Birds of the Galapagos Archipelago. 1896

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BIRDS OF THE GALAPAGOS ARCHIPELAGO.

BY

ROBERT RIDGWAY,
Curator of the Department of Birds.

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BIRDS OF THE GALAPAGOS ARCHIPELAGO.

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Introduction.—While the present publication is intended to embody practically all that is known of the avifauna of the Galapagos Archipelago, it does not claim to be exhaustive, for a great deal has yet to be learned before anything like a co' iplete exposition of the subject is possible. Although our knowledge of the bird life of this interesting island group has been vastly increased since the publication of Darwin's discoveries there, chiefly through the large collections made by Dr. Habel in 1868, the naturalists of the *Albatross* in 1888 and 1891, and Messrs. Baur and Adams in 1891, the information which has accumulated is still too fragmentary to warrant any serious attempt to solve the problems to which Mr. Darwin first called attention.

Theories as to the origin of the Galapagoan fauna and related problems will therefore be briefly touched in the following pages, the principal object of the work being to collate the knowledge thus far secured and thereby facilitate future investigation in the field whose natural products afforded the basis of Darwin's deductions concerning "the complicated problems involved in the doctrine of the derivative origin of species, . . . the importance of which in their bearing upon the study of natural science has never been equaled."[1]

But for the unfortunate loss in transit of a box containing a large number of specimens collected by Messrs. Baur and Adams on South Albemarle, Charles, Hood, and Barrington islands,[2] we should know much more concerning the fauna of those islands from which such scant material has been examined by naturalists.

Not a single island of the group can be said to have been exhaustively explored,[3] and few of the species are known in all their various

[1] Salvin, Trans. Zool. Soc. Lond., IX, Pt. ix, 1876, pp. 461–462.

[2] This box, which was lost or stolen at Guayaquil, contained specimens of land birds from these least explored islands of the group, among them being more than forty species from the southern part of Albemarle Island, the fauna of which is almost unknown.

[3] Many novelties may be expected to occur in the elevated interior portions of the islands, where "clouds usually hang over the higher mountains, where the moisture is far greater than on the seashore, and consequently the vegetation is far more luxuriant" (Salvin). These verdurous mountain districts, being less readily accessible than the arid lowlands, are doubtless but very imperfectly explored.

phases; in fact, many are known only from a few specimens in female or immature dress. No observations have been made "upon the attitude the different species of *Geospiza*[1] maintain toward one another tending to show how far the differences observable, or thought to be observable, in dried specimens indicate the actual grouping in species of living individuals."[2] The anomaly of individuals adult as to plumage but with bills suggesting immaturity, and of others which show exactly the reverse, remains to be explained; and there are other questions which only protracted field-studies by a competent investigator can decide. Until all these present mysteries are solved, theories and generalizations are necessarily futile.

An effort to obtain the unknown data should not be too long delayed. As Mr. Salvin truly says:[3]

> The advent of man to islands previously uninhabited is of the highest importance to the existence of the indigenous fauna and flora. . . . It may safely be said that these islands have been visited from time to time for more than three centuries, so that during this period man's influence has been more or less felt by the indigenous products. This influence is manifested in all similar cases by the capture and destruction for food of all animals fit to eat; and in order to establish a supply of fresh food for vessels in need of it, pigs and goats are usually turned out in such places. The vegetation chiefly suffers from the latter, while upon such animals as easily fall a prey to the former the effect is generally very speedily marked. Cats often abound on such islands, and rats and mice escaped from some vessel calling for wood and water. All these prove enemies to some previously unmolested species. Fires, too, either wantonly or carelessly lighted, sometimes work great destruction.
>
> So far as the birds of the Galapagos Islands are concerned the effect produced by the visits of ships, chiefly whalers, and the attempts at colonization do not seem to have lessened their numbers at present. Judging from the records of the various authors I have been able to consult, I should say that birds are about as numerous now as they were two centuries ago. How long this will remain so is uncertain. All the species are able to fly, and thus protect themselves from the wild pigs and cats, their most open enemies. The effect upon the vegetation produced by the cattle, horses, and goats may eventually lessen the number of birds, if not eradicate some of the species; but as so many of the species resort to the seashore for food, the destruction of the vegetation will be of less importance than it otherwise might. With a lessened vegetation, however, less rain would fall, and in consequence the increased difficulty in procuring water will operate against the birds maintaining their numbers. On the whole, it seems evident that the avifauna of these singular islands is menaced not only by open enemies, but also is in danger of serious injury should any further disturbances of the conditions of life supervene.

Since the preceding paragraphs were published it has been ascertained that at least one of the indigenous birds of the Galapagos has apparently become extinct, the larger mockingbird of Charles Island (*Nesomimus trifasciatus*) having been fruitlessly searched for by the naturalists of the *Albatross* and by Messrs. Baur and Adams. Others appear to have become extinct on the islands where they were origi-

[1] Also those of *Camarhynchus*, of which also there are sometimes several forms found on a single island.

[2] Salvin, Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 469.

[3] Ibid. p. 455.

nally found; as the largest of the ground finches (*Geospiza magnirostris*), which seems no longer to inhabit Charles or Chatham islands, where Darwin collected his specimens,[1] and *Camarhynchus variegatus*, originally discovered on Abingdon and Bindloe islands, but according to Dr. Baur no longer occuring there.[2]

It is evident, therefore, that if we are to acquire a more exact knowledge of this classic fauna, an effort to do so should be made before it is too late.

I have already remarked that the time has not arrived when we may indulge in speculations as to the origin of the Galapagoan fauna with reason for great confidence in the correctness of any theories which may be advanced. Nevertheless, a few observations on the subject with reference to Dr. Baur's subsidence theory[3] as opposed to that of volcanic uplift, together with the possibility of a non-American element in the composition of the fauna, may not be altogether futile.

All writers are agreed that the Galapagos Islands are volcanic; nearly all, from Darwin to Agassiz, agree that they were uplifted from the sea by volcanic action, and that their upheaval therefore antedates the advent of organic life upon them. Dr. Baur, however, believes that these islands are the higher points of an extensive submerged area, whose subsidence took place after a fauna and flora had been acquired; or, to quote his own words: "At a former period these islands were connected with each other, forming a single large island, which itself at a still earlier time was united to the continent, probably with Central America and the West Indies."[4]

I am not competent to discuss the relative merits of these two opposite theories from the physiographer's standpoint; but if the apparent relationships of the fauna have any bearing on the question, I believe Dr. Baur's theory to be at least worthy of serious consideration.

By reference to the map accompanying Professor Agassiz's report upon the *Albatross* cruise of 1891,[5] it will be seen that the Galapagos Archipelago and Cocos Island rise from a submarine plateau of 1,500 fathoms depression, which at its northeastern extremity approaches within 100 miles of the nearest point of the present coast line of Central America, being separated from the 1,500-fathom coast line by only

[1] Dr. Baur says (Amer. Nat., XXV, 1891, p. 905) that he and Mr. Adams collected this species on South Albemarle and Jervis islands; but their specimens were lost, and it is possible that the birds they met with were not the true *G. magnirostris*, but an undescribed related form.

[2] It has subsequently been ascertained to inhabit Albemarle, James, Indefatigable, Chatham, and Charles islands. The question therefore arises, Has it shifted its range from Abingdon and Bindloe to these islands, or were the original specimens wrongly labeled as to locality?

[3] Amer. Nat., XXV, 1891, pp. 217–229, 307–326.

[4] The Differentiation of Species on the Galapagos Islands and the Origin of the Group. Biological Lectures delivered at the Marine Biological Laboratory of Woods Hole, in the summer session of 1894. Reprint, pp. 67–78.

[5] Bull. Mus. Comp. Zool., XXIII, No. 1, pl. III.

a little more than 30 miles of deeper water, and this of less than 2,000 fathoms depth. Its eastern edge, on the other hand, is decidedly more than 200 miles distant from the nearest point on the coast of Ecuador (a little south of the equator), while the deeper water between is more than five times as wide as the northeastern "strait."

If Dr. Baur's theory be correct, therefore, the Galapagos group and Cocos Island were once culminating points of his "single large island," and the nearest approach of this oceanic land area to the continental area was toward the southern portion of Central America.[1] It is somewhat in favor of Dr. Baur's theory that at least one of the smaller land birds of the Galapagos (*Dendroica aureola*) is common also to Cocos Island; but as the same species is said to occur also along the coast of the mainland, from Gorgona Island to the Gulf of Guayaquil, its bearing on the subject loses some of its importance. We unfortunately know very little as to the birds of Cocos Island, only four species of land birds having thus far been collected there.[2] Of the three remaining Cocos Island birds, one (*Coccyzus ferrugineus*, Gould) is most nearly related to a Central American and West Indian species, *C. minor*, (Gmelin). The other two—*Cocornis agassizi*, Townsend,[3] and *Nesotriccus ridgwayi*, Townsend[4]—are genera peculiar to Cocos Island, whose

[1]That portion of the Colombian isthmus between the southern boundary of Costa Rica and the Bay of Panama.

[2]Cocos Island lies within the rain belt and supports an exceedingly luxuriant vegetation from its summit down to the water's edge, numerous streams dashing down its mountain sides into the sea. Undoubtedly it supports a much more varied bird fauna than any of the Galapagos Islands, and interesting if not remarkable forms remain to be discovered there. Unfortunately it is difficult of exploration on account of the density of the vegetation, which can only be penetrated by the aid of a machéte; but as Mr. Townsend, who made a brief landing there February 28, 1891, collected among four species of land birds two new and exceedingly distinct genera, it is to be hoped that the unknown treasures which certainly await discovery may tempt some adventurous naturalist to direct his efforts to a thorough exploration of this island.

Mr. Townsend has recently published a list of the birds which he obtained on Cocos Island, in a paper with the following title:

Bulletin of the Museum of Comparative Zoology | at Harvard College. | XXVII, No. 3. | —— | Reports on the Dredging operations off the West coast of | Central America to the Galapagos, to the West coast | of Mexico, and in the Gulf of California, in charge of | Alexander Agassiz, carried on by the U. S. Fish Commis | sion steamer *Albatross*, during 1891, Lieut. Commander | Z. L. Tanner, U. S. N., commanding. | XVII. | Birds from Cocos and Malpelo Islands, with notes on | Petrels obtained at Sea. | By C. H. Townsend. | [Published by Permission of Marshall McDonald, U. S. Fish Commissioner.] | With Two Colored Plates. | Cambridge, Mass., U. S. A.: | Printed for the Museum. | July, 1895.

Pages 121-126; plates not numbered.

[3]*Cocornis*, TOWNSEND, Bull. Mus. Comp. Zool., XXVII, July, 1895, p. 123. Type, *C. agassizi*, Townsend (Bull. Mus. Comp. Zool., XXVII, July, 1895, p. 123, colored plate; Cocos Island; U. S. Nat. Mus.).

[4]*Nesotriccus*, TOWNSEND, Bull. Mus. Comp. Zool., XXVII, July, 1895, p. 124. Type, *N. ridgwayi*, Townsend (Bull. Mus. Comp. Zool., XXVII, July, 1895, p. 124, colored plate; Cocos Island; U. S. Nat. Mus.).

nearest relatives, apparently, are the Galapagos genus *Geospiza* (subgenus "*Cactornis*") and subgenus *Eribates* of the continental genus *Myiarchus*. If, therefore, the Galapagos group and Cocos Island, together with a connecting land area, were formerly united to the continent, the relationships of their bird fauna point to a Central American rather than a South American connection; but in order to account for this relationship actual land connection with the continent is not necessary, the narrow passage of deep water (between 1,600 and 1,700 fathoms) which possibly may always have intervened being easily crossed by birds of only ordinary powers of flight.

Forty-six genera of birds have thus far been found in the Galapagos Archipelago. Following is a list of them, together with an exposition of their geographic range:

List of genera of Galapagos birds.

Names of genera.	Geographic range.							
	Peculiar.	Antarctic.	Pacific.	South American.	Central American.	West Indian.	North American.	Cosmopolitan or Tropicopolitan.
1. Nesomimus	x							
2. Dendroica					x	x	x	
3. Certhidea	x							
4. Progne				x	x	x	x	
5. Geospiza	x							
6. Camarhynchus	x							
7. Dolichonyx							x	
8. Myiarchus				x	x	x	x	
9. Pyrocephalus				x	x			
10. Coccyzus				x	x	x	x	
11. Strix								x
12. Asio								x
13. Buteo								x
14. Fregata								x
15. Pelecanus								x
16. Sula								x
17. Phaëthon								x
18. Ardea								x
19. Herodias								x
20. Butorides								x
21. Nyctanassa				x	x	x	x	
22. Phœnicopterus								x
23. Pœcilonetta				x		x		
24. Querquedula								x
25. Nesopelia	x							
26. Porzana								x
27. Gallinula								x
28. Hæmatopus								x
29. Arenaria								x
30. Squatarola								x
31. Ægialitis								x
32. Calidris								x
33. Tringa								x
34. Heteractitis			x					
35. Numenius								x
36. Himantopus								x
37. Larus								x
38. Creagrus	x ?							
39. Anous								x
40. Diomedea								x
41. Aestrelata								x
42. Puffinus								x
43. Oceanodroma								x
44. Procellaria								x
45. Oceanites								x
46. Spheniscus		x						
Summary	6 ?	1	1	6	6	6	6	30

SUMMARY.

Groups of genera.	Number of genera.	Per cent of whole number.
Peculiar genera	6?	13.04
Antarctic genera	1	2.17
Pacific genera	1	2.17
Genera peculiar to North America	1	2.17
Genera of wide or general range	30	65.22
Genera common to Central America, West Indies, and North America	1	2.17
Genera common to South America, Central America, West Indies, and North America	4	8.70
Genera common to Central America and South America	1	2.17
Genera common to South America and West Indies	1	2.17
Total	46	

Taking into consideration, however, only those genera which have species breeding (or presumably breeding) in the Galapagos Archipelago (whether peculiar or not), the result is slightly different, as the following will show:

Groups of genera.	Number of genera.	Per cent of whole number breeding.
Peculiar genera	6	15.8
Antarctic genera	1	2.6
Pacific genera	1?	2.6
Genera common to Central America, West Indies, and North America	1	2.6
Genera common to South America, Central America, West Indies, and North America	4	10.5
Genera common to Central America and South America	1	2.6
Genera common to South America and the West Indies	1	2.6
Genera of wide range	23?	60.5
Total	38?	

Restricting the comparison still further by eliminating all the genera of wide range, we are able to get a more definite idea of the relationships of the Galapagoan avifauna. Thus limited to American types, its composition appears to be as follows:

Groups of genera.	Number of genera.	Per cent of whole number.
Peculiar genera	6	46.15
Genera common to Central America, the West Indies, and North America	1	7.69
Genera common to South America, Central America, the West Indies and North America	4	30.77
Genera common to Central America and South America	1	7.69
Genera common to South America and the West Indies	1	7.69
Total	13	

The foregoing analysis shows that a study of the genera alone will not enable us to decide whether the nonpeculiar portion of the Galapagoan avifauna is most nearly related to that of the adjacent mainland of South America or that of lower Central America or the West

Indies. The species themselves (those peculiar to the group being of course excluded) afford better evidence.

Names of species.	Cocos Island.	Colombian Isthmus north of Panama.	West Indies.	Coast of Ecuador.
1. Dendroica aureola	x	?		x
2. Coccyzus melanocoryphus				x
3. Fregata aquila		x	x	x
4. Sula cyanops		x?	x	?
5. Sula nebouxii		x?		x
6. Sula brewsteri		x?		
7. Sula piscator		x?	x	?
8. Phaëthon æthereus		?	x	?
9 Ardea herodias?		x	x	
10. Herodias egretta?		x	x	x
11. Nyctanassa violacea		x	x	
12. Phœnicopterus ruber		?	x	
13. Gallinula galeata		x	x	x
14. Himantopus mexicanus		x	x	?
Summary	1	10?	11	6?

Were the above figures correct, they would point very decidedly to a Central American and West Indian origin for the nonpeculiar resident birds of the Galapagos, but unfortunately there are so many interrogation points, indicating doubt in regard to the range of the species, that they can only be accepted as approximately accurate. *Dendroica aureola*, for example, is said to occur at least as far north along the coast of Colombia as Gorgona Island, and may extend as far as the isthmus, if not farther.

Turning now our attention to the six peculiar genera of Galapagos birds, the question of their relationships may be briefly discussed as follows:

(1) *Nesomimus*. This has evidently been derived from *Mimus* (or at least from the same stock), a genus found throughout Central America, the West Indies, and South America, the Galapagos forms being at least as nearly related to the larger West Indian species (*M. hillii*, March) as to any other, and far more nearly than to the single Ecuadorean species (*M. longicaudatus*, Tschudi).[1]

(2) *Certhidea*. This genus was formerly placed among the *Coerebidæ*, but more recently has been transferred to the *Mniotiltidæ*.[2] It has no very near relative among the known continental or West Indian birds, but in general appearance is very much like a smaller "edition" of the Hawaiian genus *Oreomyza*, belonging to the chiefly Polynesian family *Dicæidæ*.

[1] *M. longicaudatus* has, like the North American *M. polyglottos* and allied forms of the Greater Antilles, a white wing-speculum; the Galapagos species of *Nesomimus*, the Central American *Mimus gilvus* (Vieillot), *M. hillii*, and the species of eastern and southern South America have not, except *M. triurus* (Vieillot), which stands quite apart from other species by reason of its unique wing-pattern.

[2] Lucas, Proc. U. S. Nat. Mus., XVII, pp. 309–311.

(3) *Geospiza.* This heteromorphic genus is of very uncertain relationship. Some of the species resemble somewhat the Central American genus *Cyanoloxia*,[1] but perhaps still more the West Indian genus *Melanospiza*,[2] no other American Fringillidæ being enough like *Geospiza* to suggest even distant kinship, unless it be the Central American and South American genus *Oryzoborus*, which, superficially at least, recalls such *Geospizæ* as *G. magnirostris*, *G. pachyrhyncha*, and *G. strenua* in the excessive shortness and thickness of the beak. The more slender-billed species (formerly separated under the generic name *Cactornis*) have no continental or West Indian prototype. The only form closely resembling them is the genus *Cocornis*, peculiar to Cocos Island, which is essentially a small, slender-billed "*Cactornis*" with exactly the same sexual and seasonal differences of plumage as the species of "*Cactornis*" and *Geospiza*. It is a singular and most suggestive circumstance that the peculiar departure from the normal fringilline type, begun in the thicker-billed "*Cactorni*" and carried, through a nicely graded transition, to its extreme development in *Cocornis*, should be in the direction of the Hawaiian family mentioned under the head of *Certhidea*.[3]

(4) *Camarhynchus.* This is another heteromorphic genus, whose variations of structure exactly parallel those of *Geospiza*, the longest-billed species (*C. pallidus*) having been originally referred to "*Cactornis*." I have been unable to find a continental or West Indian genus that could be of common origin with it, unless it be the West Indian genus *Pyrrhulagra*. Certainly the western Peruvian genus *Neorhynchus*, the only one which has been mentioned as possibly related,[4] is not its prototype. Certain Hawaiian genera, by some writers referred to the Fringillidæ and by others considered to be thick-billed Dicæidæ, although very different from *Camarhynchus* in coloration, strongly sug-

[1] *Cyanoloxia*, Bonaparte, Conspectus Avium, I, Aug. 15, 1850, p. 502. Type, by elimination, *Coccoborus cyanoides*, Lafresnaye.

[2] *Melanospiza*, Ridgway, new genus. Type, *Loxigilla richardsoni*, Cory.

Generic characters.—Similar to *Geospiza*, Gould (size of type intermediate between *G. fortis* and *G. fuliginosa*), but tail relatively much longer and wing much more rounded (first quill shorter than seventh); mandible relatively broader basally (basal width considerably exceeding length of gonys); culmen quite straight, and mandibular rami much narrower. Coloration: Adult male wholly deep black, except legs and feet, which are brownish white. (Female and young unknown.)

[3] This genus *Cocornis* may possibly furnish the key to the derivation of the family Coerebidæ, since it shows unquestionable resemblance in form to the chiefly West Indian genus *Coereba* (= *Certhiola*, Sundevall). The close resemblance between the adult male of *Cocornis* and the adult (the sexes being alike) of *Coereba atrata* is indeed remarkable, so much so that there can be no doubt, in my mind, that the similarity is something more than merely accidental. That *Cocornis* belongs on the fringilline side of the line, however, is proven by the fact that while the adult male is wholly uniform black the adult female and the young male are varied with olive and rusty above, while their under parts are conspicuously streaked with dusky on a yellowish ground—exactly like the species of *Geospiza;* the sexes of *Coereba*, on the other hand, being alike, and neither the adult nor young streaked beneath.

[4] Salvin, Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 488.

gest relationship in structural characters, the form of the bill in *Loxioides*, *Telespiza*,[1] and *Psittirostra* being not very dissimilar in character to that of some species of *Camarhynchus*.

(5) *Nesopelia*. This genus is closely related to the genus *Zenaida*, of general Neotropical distribution. In fact, it is doubtfully distinct from the latter.

To sum up: Of the five peculiar Galapagoan genera of birds, only two (*Nesomimus* and *Nesopelia*) are of evident American relationship. The remaining three have so obvious a leaning toward certain Hawaiian dicæidine forms[2] that the possibility of a former land connection, either continuous or by means of intermediate islands as "stepping stones," becomes a factor in the problem. It may be that the resemblance of *Cocornis*, "*Cactornis*," and *Camarhynchus* to the above-mentioned Hawaiian forms is merely a superficial one, and not indicative of real relationship. I do not by any means claim, on the strength of such evidence, a common origin for them, but merely present the facts as "food for reflection."[3]

It will doubtless seem to some that I have gone to an undesirable if not reprehensible extreme in naming so many forms of the genera *Certhidea*, *Geospiza*, *Camarhynchus*, and *Pyrocephalus*. Whether such is true or not, I have certainly not been actuated by any desire to add to the number of species. On the contrary, several names, chiefly of my own, have been relegated to synonymy in consequence of what seemed to be good evidence of their untenability; and in naming new ones I have in all cases been guided by definite principles without regard to the character of the criticism which might result. Some of these new names may, when additional material has been secured, prove also to be untenable, and will then have to be "degraded;" but the decision of such questions should always be a matter of evidence, never of individual opinion or prejudice; and I am sure that all who have had equal experience in the laborious and time-consuming task of dissecting and reconstructing synonymies will bear me witness that the real promoter

[1] At least what I take to be *Telespiza flavissima*, Rothschild, but, not being able to refer to the "Avifauna of Laysan," the identification is doubtful. The bird was taken on the island of Laysan by Mr. W. T. Brigham, and is No. 128455, U.S.N.M.

[2] Whether the genera *Loxioides*, *Telespiza*, *Psittirostra*, and other finchlike Hawaiian forms are true Fringillidæ or thick-billed Dicæidæ can scarcely be said to be yet satisfactorily decided.

[3] While the prevailing *facies* of the Hawaiian avifauna is unquestionably Polynesian, a small but by no means insignificant American element is present. How it came there has not yet been explained. Of land birds, the peculiar genus *Phœornis* is most like *Myadestes*, of America (see Stejneger, Proc. U. S. Nat. Mus., X, 1887, p. 92, and XII, 1889, pp. 383, 384). The American *Circus hudsonius* occurs also in Hawaii; the Hawaiian *Gallinula* is barely separable from the American species, *G. galeata*, and the *Plegadis* seems to be identical with *P. guarauna*. The *Himantopus* is nearly related to *H. mexicanus*, and *Anas wyvilliana* is very similar to *A. aberti* of western Mexico. Two of the Hawaiian Procellariidæ, *Æstrelata phœopygia* and *Oceanodroma cryptoleucura* occur also in the Galapagos!

of chaos and enemy of order is the "lumper," and not his much maligned co-worker, the "hair-splitter."

When it is remembered that the coloration is practically if not absolutely the same in all of the twenty-odd forms of the genus *Geospiza*, it will be seen that if any segregation of species is made at all it must be based upon measurements; and when it is further seen that there is a gradual transition in size from the enormous beak of *G. magnirostris* to the comparatively minute one of *G. parvula* (see Plate LVII) and from the excessively thick one of *G. pachyrhyncha* (whose lateral outlines approximate an equilateral triangle) to the slender and curved one of *G. scandens* or the acuminate one of *G. acutirostris;* and that size of beak is not necessarily correlated with length of wing, tarsus, etc., the difficulty of defining the species becomes obvious. In fact, the segregation of definable forms would not be possible were there not a reasonable uniformity of measurements among specimens from one locality, it being usually the case that when a great difference in size between specimens from any one island is observed, the specimens can easily be divided into two or more (rarely as many as seven) sets, whose measurements do not inosculate, the individuals whose measurements are intermediate coming from some other island. Some islands, unfortunately, are so poorly represented by specimens that much doubt must necessarily exist respecting the forms which are found upon them.

Having been perplexed by these difficulties, I have carefully weighed all doubtful cases, and whenever there seemed to be a well-defined average difference between specimens from different islands, I have not hesitated to separate them as local forms. No other course, indeed, is practicable; for were "lumping" once begun there could be no end to it, unless purely arbitrary limits were given to the species recognized, and if followed to a logical conclusion might easily end in the recognition of a single variable species, equivalent in its limits to the genus.

How many fairly good species there really are in the genus it is not possible for me to conjecture from the insufficient material that I have been able to examine. A considerable number of the forms recognized in this work are undoubtedly mere local races. Insular forms, however, can hardly be treated in the same manner as continental ones, whose conditions of environment are so much more favorable to intergradation; hence I have treated alike as species all the forms that it has seemed worth while to distinguish by a separate name. Regarding supposed excessive individual variation in the genus *Geospiza*, I am unable to agree entirely with Mr. Salvin,[1] who has, I think, made the specific limits too wide, and thus brought together under one specific name forms from different islands which are really more or less distinct. Indeed I have failed to discover in the series of specimens from any one island a greater range of variation in measurements than often exists among an equal number of specimens of mainland forms. (See under genus *Geospiza*, p. 508.)

[1] Trans. Zool. Soc. London, IX, Pt. IX, 1876, pp. 479–484.

LISTS OF SPECIES OF BIRDS FOUND UPON EACH ISLAND OF THE GALAPAGOS ARCHIPELAGO.

In the following lists of species which have thus far been taken upon or (in the cases of sea birds) near by each island, I give, in chronological order, the authorities upon which the records are based. I have not deemed it worth while to give a description of each island, this having already been done so well by Mr. Salvin[1] and Professor Agassiz.[2]

List of birds ascertained to occur on Albemarle Island.

[Peculiar species in italic.]

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus *parvulus*	x	....	....	....	.....	x	....	....	x	....	x
2. Dendroica aureola	....	....	....	....	[x]	....	....	....	....	....	x
3. Certhidea *albemarlei*	....	....	....	....	.....	....	....	....	....	....	x
4. Geospiza magnirostris?	....	....	....	....	.....	....	....	....	....	....	*a* x
5. Geospiza fortis	....	....	....	....	.....	....	....	....	x	....	x
6. Geospiza fuliginosa	....	....	....	....	.....	x	....	....	x	....	x
7. Geospiza fatigata?	....	....	....	....	.....	....	....	....	....	....	x
8. Camarhynchus variegatus	....	....	....	....	*b*[x?]	....	....	....	....	....	x
9. Camarhynchus *affinis*	....	....	....	....	.....	....	....	....	....	....	x
10. Camarhynchus prosthemelas	....	....	....	....	.....	....	....	....	....	....	x
11. Camarhynchus *productus*	....	....	....	....	.....	....	....	....	....	....	x
12. Myiarchus magnirostris	....	....	....	....	.....	....	....	....	....	....	x
13. Pyrocephalus intercedens	....	....	....	....	.....	....	....	....	....	....	x
14. Asio galapagoensis	....	....	....	....	.....	....	....	....	....	....	x
15. Buteo galapagoensis	....	....	....	....	.....	....	....	....	....	....	x
16. Pelecanus californicus	....	....	....	....	.....	....	....	....	....	....	x
17. Sula nebouxii	....	....	....	....	.....	....	....	....	....	....	x
18. Herodias egretta?	....	....	....	....	.....	....	....	....	....	....	x
19. Butorides plumbeus	....	....	....	....	.....	....	....	....	....	....	x
20. Nyctanassa violacea	....	....	....	....	.....	....	....	....	....	....	x
21. Pœcilonetta galapagensis	....	....	....	....	.....	....	....	....	....	....	x
22. Nesopelia galapagoensis	....	....	....	....	[x]	....	....	....	....	....	....
23. Gallinula galeata?	....	....	....	....	.....	....	....	....	....	....	x
24. Hæmatopus galapagensis	....	....	....	....	.....	....	....	....	....	....	x
25. Arenaria interpres	....	....	....	....	.....	....	....	....	....	....	x
26. Squatarola squatarola	....	....	....	....	.....	....	....	....	....	....	x
27. Ægialitis semipalmata	....	....	....	....	.....	....	....	....	....	....	x
28. Calidris arenaria	....	....	....	....	.....	....	....	....	....	....	x
29. Heteractitis incanus	....	....	....	....	.....	....	....	....	....	....	x
30. Numenius hudsonicus	....	....	....	....	.....	....	....	....	....	....	x
31. Himantopus mexicanus?	....	....	....	....	.....	....	....	....	....	....	x
32. Anous galapagensis	....	....	....	....	.....	....	....	....	....	....	x
33. Oceanodroma cryptoleucura	....	....	....	....	.....	....	....	....	....	x	....
34. Oceanites gracilis	....	....	....	....	.....	....	....	....	....	....	x
35. Spheniscus mendiculus	....	....	....	....	.....	....	....	....	x	....	x
Total by each collector	1	0	0	0	[3]	2	0	0	4	1	33

a See. Amer. Nat., XXV, 1891, p. 905.

b "*C. habeli*" of Trans. Zool. Soc. Lond., IX, Pt. IX, p. 460?.

Messrs. Baur and Adams collected at two points on Albemarle Island—"East Albemarle, opposite Cowley Island," and "South Albemarle."

[1] Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, pp. 447–461.

[2] Bull. Mus. Comp. Zool., Harvard College, XXIII, No. 1, 1892, pp. 63–74.

The brief notes which Dr. Baur has kindly sent me concerning the collections made at the two localities are as follows:

East Albemarle opposite Cowley Island.—Composition of fauna different from that of South Albemarle. Large *Geospiza*[1] absent; many black individuals of *fortis* and *fuliginosa*.

Cactornis rare, only black specimens seen.

Camarhynchus, two species [*affinis* and *prosthemelas*]; large form [*variegatus*] absent.

Nesomimus, *Certhidea*, *Myiarchus*, and *Pyrocephalus* present, but not common.

South Albemarle.—*Geospiza*, three species [*fortis*, *fuliginosa*, and a large form, doubtless either *G. strenua* or *G. magnirostris*—most likely the former].

Cactornis, two species, the large blackish species [*Geospiza fatigata?*] common. [The other one is *Camarhynchus productus*.]

Nesomimus [*parvulus*] common.

Certhidea [*albemarlei*] common.

Pyrocephalus [*intercedens*] common, but red males rare.

Myiarchus [*magnirostris*] common.

Dendroica, *Buteo*, *Pœcilonetta*, common.

Spheniscus, very common.

As Dr. Baur, and his associate, Mr. Adams, collected more than forty species on South Albemarle, there are at least twenty-five species found there which are as yet unidentified.

List of birds ascertained to occur on Duncan Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Dendroica aureola	....	....	....	....	....	....	....	....	....	....	x
2. Certhidea (undetermined)	....	....	....	....	....	....	....	....	....	....	x
3. Geospiza fortis	....	....	....	....	....	....	....	....	....	....	x
4. Geospiza fuliginosa	....	....	....	....	....	....	....	....	....	....	x
5. Geospiza (undetermined) *a*	....	....	....	....	....	....	....	....	x	x	x
6. Camarhynchus (undetermined) *b*	....	....	....	....	....	....	....	....	....	....	x
7. Myiarchus magnirostris	....	....	....	....	....	....	....	....	x	....	....
8. Pyrocephalus (undetermined)	....	....	....	....	....	....	....	....	x	x	x
9. Buteo galapagoensis	....	....	....	....	....	....	....	....	....	....	x
10. Ardea herodias?	....	....	....	....	....	....	....	....	....	....	x
11. Butorides plumbeus	....	....	....	....	....	....	....	....	x	....	....
12. Pœcilonetta galapagensis	....	....	....	....	....	....	....	....	x	x	....
13. Nesopelia galapagoensis	....	....	....	....	....	....	....	....	....	....	x
Total by each collector	0	0	0	0	0	0	0	0	x	x	....
									6	4	9

a One of the so-called *Cactorni*, probably *G. fatigata*.

b Perhaps *C. affinis*.

[1] What this large species of South Albemarle could have been, I can only conjecture; perhaps *G. strenua*, possibly *G. magnirostris*.

List of birds ascertained to occur on Brattle Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Sula nebouxii	....	....	....	....	....	....	....	....	....	....	*a* x
2. Creagrus furcatus	....	....	....	....	....	....	....	....	....	....	x
Total by each collector	0	0	0	0	0	0	0	0	0	0	2

a Breeding.

List of birds ascertained to occur on Charles Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus *trifasciatus*	x	....	....	....	....	....	....	....	....	....	....
2. Nesomimus melanotis?	....	....	x	....	....	....	....	....	....	....	....
3. Dendroica aureola	x?	....	x	....	....	x	....	....	x	x	....
4. Progne modesta	....	x	....	....	....	....	....	....	....	....	....
5. Geospiza magnirostris	x	....	....	....	....	....	....	....	....	....	....
6. Geospiza strenua	....	....	....	....	....	....	....	....	x	....	....
7. Geospiza fortis	x	....	x	....	....	....	....	....	x	x	x
8. Geospiza fuliginosa	....	....	x	....	....	....	....	....	x	x	....
9. Geospiza dentirostris	....	....	....	....	....	....	x	....	....	....	....
10. Geospiza difficilis?	....	....	....	....	....	....	x	....	....	....	....
11. Geospiza *intermedia*	....	x	x	....	....	....	....	....	x	x	x
12. Geospiza brevirostris	....	....	....	....	....	....	....	....	x	....	....
13. Camarhynchus crassirostris	x?	....	....	....	....	....	....	....	....	....	....
14. Camarhynchus variegatus	....	....	....	....	....	....	....	....	x	x	x
15. Camarhynchus psittaculus?	....	....	....	....	....	....	....	....	x	....	....
16. Camarhynchus *pauper*	....	....	....	....	....	....	....	....	x	....	....
17. Camarhynchus prosthemelas	....	....	x	....	....	....	....	....	x	....	x
18. Myiarchus magnirostris	....	....	x	....	....	....	....	....	x	x	x
19. Pyrocephalus *carolensis*	x?	....	....	....	....	x	....	....	x	x	x
20. Coccyzus melanocoryphus	....	....	....	....	....	....	....	....	x	x	x
21. Pelecanus californicus	....	....	....	....	....	....	x	....	....	....	x
22. Sula cyanops	....	....	....	....	....	....	x	....	....	....	....
23. Sula nebouxii	....	....	....	....	....	....	....	....	....	....	x
24. Butorides plumbeus	....	....	....	....	....	....	....	....	....	....	x
25. Phœnicopterus ruber	....	....	....	....	....	....	....	....	x	....	x
26. Pœcilonetta galapagensis	....	....	....	....	....	....	x	....	x	....	x
27. Nesopelia galapagoensis	....	x	....	....	....	....	....	x	....	....	....
28. Numenius borealis	....	....	....	....	....	....	x	....	....	....	....
29. Larus fuliginosus	x?	....	x	....	....	....	....	....	....	....	x
30. Anous galapagensis	....	....	....	....	....	....	x	....	....	....	....
31. Puffinus subalaris?	....	....	....	....	....	....	x	....	....	....	....
32. Spheniscus mendiculus *a*	....	....	....	....	....	....	....	....	....	....	....
Total by each collector	5	3	8	0	0	2	8	1	15	8	13

a Wolf, Ein Besuch aus den Galápagos-Inseln, p. 42.

List of birds ascertained to occur on Hood Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, —.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus *macdonaldi*	....	....	....	....	[x]	....	....	....	x	....	x
2. Dendroica aureola	....	....	....	....	[x]	....	....	....	....	....	x
3. Certhidea *cinerascens*	....	....	....	....	....	....	....	....	x	....	x
4. Geospiza *conirostris*	....	....	....	....	....	....	....	....	x	....	x
5. Geospiza *media*	....	....	....	....	....	....	....	....	x	....	....
6. Geospiza fuliginosa	....	....	....	....	....	....	....	....	x	....	x
7. Myiarchus magnirostris	....	....	....	....	....	....	....	....	x	....	x
8. Asio galapagoensis	....	....	....	....	[x]	....	....	....	....	....	x
9. Buteo galapagoensis	....	....	....	....	[x]	....	....	....	....	....	....
10. Sula nebouxii	....	....	....	....	[x]	....	....	....	....	....	....
11. Butorides plumbeus	....	....	....	....	....	....	....	....	x	....	x
12. Nyctanassa violacea	....	....	....	....	....	....	....	....	x	....	x
13. Pœcilonetta galapagensis	....	....	....	....	[x]	....	....	....	....	....	x
14. Nesopelia galapagoensis	....	....	....	....	[x]	....	....	....	x	....	....
15. Hæmatopus galapagensis	....	....	....	....	....	....	....	....	....	....	x
16. Arenaria interpres	....	....	....	....	....	....	....	....	x	....	....
17. Heteractitis incanus	....	....	....	....	....	....	....	....	x	....	....
18. Creagrus furcatus	....	....	....	....	....	....	....	....	....	....	x
19. Anous galapagensis	....	....	....	....	....	....	....	....	x	....	x
20. Diomedea exulans *a*	....	....	....	....	[x?]	....	....	....	....	....	....
21. Diomedea nigripes??	....	....	....	....	[x]	....	....	....	....	....	....
Total by each collector	0	0	0	0	[9]	0	0	0	12	0	13

a Wolf, Ein Besuch aus den Galápagos-Inseln, 1879, p. 13. Perhaps one of the "two kinds of Albatrosses" seen at Hood Island by Dr. Habel (see Trans. Zool. Soc., IX, Pt. IX, 1876, pp. 453, 459) was this species.

List of birds ascertained to occur on Chatham Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, —.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus *adamsi*	x	....	x	....	....	....	....	....	x	x	x
2. Dendroica aureola	x?	....	x	....	....	....	....	x	x	x	x
3. Certhidea *luteola*	x	....	....	....	....	....	....	....	x	x	x
4. ?Progne modesta? *a*	....	....	....	....	....	....	....	....	....	....	....
5. Geospiza magnirostris	x	....	....	....	....	....	....	....	....	....	....
6. Geospiza strenua	x	....	....	....	....	....	....	....	....	....	....
7. Geospiza dubia	x	....	x	....	....	....	....	....	x	x	x
8. Geospiza fuliginosa	x	....	x	....	....	....	....	....	x	x	x
9. Geospiza parvula	....	....	x	....	....	....	....	....	....	x	....
10. ?Geospiza dentirostris *b*	....	....	....	....	....	....	....	....	....	....	....
11. Geospiza fatigata ??	....	....	....	....	z	....	....	....	x	....	....
12. Camarhynchus variegatus	....	....	....	....	....	....	....	....	x	x	x
13. Camarhynchus *salvini*	....	....	x	....	....	....	....	....	x	x	x
14. Myiarchus magnirostris	x	....	x	....	....	....	....	....	x	x	x
15. Pyrocephalus *dubius*	x?	....	....	....	....	....	....	....	x	x	x
16. Coccyzus melanocoryphus	....	....	....	....	....	....	....	....	x	....	x
17. Buteo galapagoensis	x?	....	....	....	....	....	....	x	....	....	x
18. Fregata aquila	....	....	....	....	....	....	....	....	x	....	x
19. Pelecanus californicus	....	....	....	....	....	....	....	....	....	....	x
20. Sula nebouxii	....	....	....	....	....	....	....	....	x	....	x
21. Butorides plumbeus	....	....	....	....	....	....	....	....	x	....	x
22. Nyctanassa violacea	....	....	....	....	....	....	....	x	....	....	....
											x

a See Sharpe, Cat. Birds Brit. Mus., X, 1885, p. 176. *b* Fide Sharpe, Cat. Birds Brit. Mus., XII, p. 12.

List of birds ascertained to occur on Chatham Island—Continued.

Names of species.	Darwin, 1835.	Néboux, 1836-1839.	Kinberg, 1852.	Kellett and Wood, —.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
23. Pœcilonetta galapagensis	....	....	....	....	....	....	....	....	....	x	x
24. Nesopelia galapagoensis	....	....	....	....	....	....	....	x	....	....	x
25. Hæmatopus galapagensis	....	....	....	....	....	....	....	x	....	....	....
26. Numenius hudsonicus	....	....	....	....	....	....	....	....	....	....	[x]
27. Himantopus mexicanus	....	....	....	....	....	....	....	....	....	....	x
28. Larus fuliginosus	....	....	....	....	....	....	....	....	x	x	x
29. Creagrus furcatus	....	....	....	x	....	....	....	....	x	....	....
30. Anous galapagensis	....	....	....	x	....	....	....	....	x	....	....
31. Aestrelata phæopygia	....	....	....	x	....	....	....	....	....	....	....
32. Puffinus subalaris	....	....	....	....	....	....	....	....	....	x	....
Total by each collector	10	0	7	3	0	0	0	5	16	14	20

According to Dr. Baur,[1] the fauna of the northern part of Chatham Island is different from that of the southern portion, where collections have chiefly been made, the absence of *Nesomimus*, *Certhidea*, and *Camarhynchus* from the northern part being particularly noted.

List of birds ascertained to occur on Barrington Island.

Names of species.	Darwin, 1835.	Néboux, 1836-1839.	Kinberg, 1852.	Kellett and Wood, —.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus (undetermined)	....	....	....	....	....	....	....	....	....	....	x
2. Dendroica aureola	....	....	....	....	....	....	....	....	....	....	x
3. Certhidea *bifasciata*	....	....	....	....	....	....	....	....	....	....	x
4. Geospiza (undetermined) *a*	....	....	....	....	....	....	....	....	....	....	x
5. Geospiza parvula?	....	....	....	....	....	....	....	....	....	....	x
6. Geospiza *barringtoni*	....	....	....	....	....	....	....	....	....	....	x
7. Camarhynchus (undetermined) *b*	....	....	....	....	....	....	....	....	....	....	x
8. Myiarchus magnirostris	....	....	....	....	....	....	....	....	....	....	x
9. Buteo galapagoensis	....	....	....	....	....	....	....	....	....	....	x
10. Fregata aquila	....	....	....	....	....	....	....	....	....	....	x
11. Pelecanus californicus	....	....	....	....	....	....	....	....	....	....	x
12. Sula nebouxii	....	....	....	....	....	....	....	....	....	....	x
13. Butorides plumbeus	....	....	....	....	....	....	....	....	....	....	x
14. Pœcilonetta galapagensis	....	....	....	....	....	....	....	....	....	....	x
15. Larus fuliginosus	....	....	....	....	....	....	....	....	....	....	x
Total by each collector	0	0	0	0	0	0	0	0	0	0	15

a "The median form observed." (Baur.) *b* "One specimen (the middle form) collected." (Baur.)

[1] Amer. Nat., 1891, XXV, p. 904, footnote.

List of birds ascertained to occur on Indefatigable Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, —.	Habel, 1869.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus melanotis	....	....	x	....	x	....	....	....	x	x	x
2. Dendroica aureola	....	....	....	....	x	....	....	....	x	....	x
3. Certhidea *salvini*	....	....	....	....	x	....	....	....	....	....	x
4. Progne modesta	....	....	....	....	[x]	....	....	....	x	....	....
5. Geospiza strenua	....	....	....	....	x	....	....	....	....	....	....
6. Geospiza fortis	....	....	....	....	x	....	....	....	x	....	....
7. Geospiza fuliginosa	....	....	....	....	x	....	....	....	x	....	....
8. Geospiza parvula	....	....	....	....	....	....	....	....	....	....	x
9. Geospiza fatigata	....	....	....	....	x	....	....	....	x	....	x
10. Geospiza brevirostris?	....	....	....	....	x	....	....	....	....	....	....
11. Camarhynchus variegatus	....	....	....	....	....	....	....	....	x	....	....
12 Camarhynchus psittaculus	....	....	....	....	x	....	....	....	x	....	....
13. Camarhynchus prosthemelas	....	....	....	....	x	....	....	....	....	....	x
14. Camarhynchus pallidus	....	....	....	....	x	....	....	....	....	....	x
15. Myiarchus magnirostris	....	....	....	....	x	....	....	....	x	....	x
16. Pyrocephalus intercedens	x?	....	x	....	x	....	....	....	x	....	x
17. Strix punctatissima	....	....	....	....	x	....	....	....	....	....	....
18. Asio galapagoensis	....	....	....	....	x	....	....	....	....	....	....
19. Buteo galapagoensis	x?	....	....	....	x	....	....	....	x	....	x
20. Sula piscator	....	....	....	....	....	....	....	....	....	....	x
21. Ardea herodias?	....	....	....	....	x	....	....	....	....	....	....
22. Butorides plumbeus	....	....	....	....	x	....	....	....	....	....	....
23. Nyctanassa violacea	....	....	....	....	x	....	....	....	x	....	....
24. Phœnicopterus ruber	....	....	....	....	[x]	....	....	....	....	....	....
25. Pœcilonetta galapagensis	....	....	....	....	x	....	....	....	....	x	x
26. Nesopelia galapagoensis	x?	....	....	....	x	....	....	....	x	....	....
27. Porzana spilonota	....	....	....	....	x	....	....	....	....	....	....
28. Hæmatopus galapagensis	....	....	....	....	x	....	....	....	....	x	....
29. Arenaria interpres	....	....	....	....	x	....	....	....	....	....	....
30. Ægialitis semipalmata	....	....	....	....	x	....	....	....	....	....	....
31. Tringa minutilla	....	....	....	....	x	....	....	....	....	....	....
32. Heteractitis incanus	....	....	....	....	x	....	....	....	....	....	....
33. Numenius hudsonicus	....	....	....	....	x	....	....	....	....	....	....
34. Himantopus mexicanus	....	....	....	....	x	....	....	....	....	....	....
35. Larus fuliginosus	x?	....	x	....	x	....	....	....	x	....	....
36. Aestrelata phæopygia	....	....	....	....	....	....	....	....	....	....	a x
Total by each collector	4?	0	3	0	32	0	0	0	14	3	13

a Off pass between Indefatigable and James islands and between Barrington and Indefatigable islands.

Doctor Habel saw in the Puerta de la Aguada on Indefatigable Island "two species of swallows. One, a large kind, kept to the perpendicular rocks which lined the estuary, and did not fly inland; the other, smaller, flew about the island, but too rapidly to be shot by me." The first-mentioned species is with scarcely any doubt *Progne modesta;* but the second has not yet been seen by other explorers, and therefore remains unidentified. It may possibly be a species of swift, perhaps of the genus *Chætura.*

List of birds ascertained to occur on Jervis Island.

Names of species.	Darwin, 1835.	Néboux, 1836-1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus melanotis	....	....	....	....	....	....	....	....	....	....	x
2. Dendroica aureola	....	....	....	....	....	....	....	....	....	....	x
3. Certhidea (undetermined)	....	....	....	....	....	....	....	....	....	....	x
4. Geospiza magnirostris? *a*	....	....	....	....	....	....	....	....	....	....	x
5. Geospiza (undetermined) *b*	....	....	....	....	....	....	....	....	....	....	x
6. Geospiza (undetermined)	....	....	....	....	....	....	....	....	....	....	x
7. Geospiza fatigata?	....	....	....	....	....	....	....	....	....	....	x
8. Camarhynchus psittaculus	....	....	....	....	....	....	....	....	....	....	x
9. Camarhynchus *compressirostris*	....	....	....	....	....	....	....	....	....	....	x
10. Camarhynchus prosthemelas	....	....	....	....	....	....	....	....	....	....	x
11. Camarhynchus pallidus	....	....	....	....	....	....	....	....	....	....	x
12. Myiarchus magnirostris	....	....	....	....	....	....	....	....	....	....	x
13. Pyrocephalus nanus? *c*	....	....	....	....	....	....	....	....	....	....	x
14. Pœcilonetta galapagensis	....	....	....	....	....	....	....	....	....	....	x
15. Puffinus subalaris?	....	....	....	....	....	....	....	....	....	....	x
Total by each collector	0	0	0	0	0	0	0	0	0	0	15

a Baur, Amer. Nat., XXV, 1891, p. 905.
b "Three species of *Geospiza*, the middle form common." (Baur.)
c "Rare; only one specimen seen and procured." (Baur.)

List of birds ascertained to occur on James Island.

Names of species.	Darwin, 1835.	Néboux, 1836-1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus melanotis	x	....	x	....	....	....	....	....	x	....	x
2. Dendroica aureola	x?	....	x	....	....	....	....	....	x	....	x
3. Certhidea *olivacea*	x	....	....	....	....	....	....	....	x	....	x
4. Progne modesta	x	....	x	....	....	....	....	....	....	....	....
5. Geospiza strenua	x	....	x	....	....	....	....	....	....	....	....
6. Geospiza *bauri*	....	....	....	....	....	....	....	....	....	....	x
7. Geospiza fortis	....	....	x	....	....	....	....	....	x	....	....
8. Geospiza fuliginosa	x	....	x	....	....	....	....	....	x	....	x
9. Geospiza parvula	x	....	....	....	....	....	....	....	....	....	....
10. Geospiza *debilirostris*	....	....	....	....	....	....	....	....	x	....	....
11. Geospiza *scandens*	x	....	x	....	....	....	....	....	....	....	x
12. Geospiza assimilis?	....	....	....	....	....	....	....	....	....	....	x
13. Camarhynchus variegatus	....	....	....	....	....	....	....	....	....	....	x
14. Camarhynchus psittaculus	x	....	....	....	....	....	....	....	x	....	x
15. Camarhynchus *incertus*	....	....	....	....	....	....	....	....	....	....	x
16. Camarhynchus prosthemelas	....	....	x	....	....	....	....	....	x	....	x
17. Camarhynchus pallidus	....	....	....	....	....	....	....	....	x	....	x
18. Dolichonyx oryzivorus	x	....	....	....	....	....	....	....	....	....	....
19. Myiarchus magnirostris	....	....	x	....	....	....	....	....	x	....	x
20. Pyrocephalus nanus	x?	....	x	....	....	....	....	....	x	....	x
21. Strix punctatissima	x	....	....	....	....	....	....	....	....	....	....
22. Asio galapagoensis	x	....	....	....	....	....	....	....	....	....	....
23. Buteo galapagoensis	x	....	....	....	....	....	....	....	....	....	....
24. Butorides plumbeus	....	....	x	....	....	....	....	....	x	....	x
25. Phœnicopterus ruber	....	....	....	....	....	....	....	....	x	....	x
26. Pœcilonetta galapagensis	....	....	....	....	....	....	....	....	....	....	x
27. Nesopelia galapagoensis	....	....	x	....	....	....	....	....	x	....	x
28. Porzana spilonota	x	....	....	....	....	....	....	....	....	....	....
29. Hæmatopus galapagensis	....	....	....	....	....	....	....	....	x	....	....
30. Heteractitis incanus	....	....	....	....	....	....	....	....	x	....	....

List of birds ascertained to occur on James Island—Continued.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, —.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
31. Himantopus mexicanus	....	....	....	....	....	....	....	....	x	....	....
32. Larus fuliginosus	x	....	....	....	....	....	....	....	x	....	....
33. Creagrus furcatus	....	....	....	....	....	....	....	....	....	....	x
34. Aestrelata phæopygia	....	....	....	....	....	....	....	....	....	....	*a*x
35. Oceanites gracilis	....	....	....	....	....	....	....	....	....	....	x
36. Spheniscus mendiculus	....	....	x	....	....	....	....	....	....	....	[x]
Total by each collector	16?	0	13	0	0	0	0	0	18	0	22

a "Off pass between Indefatigable and James islands."

List of birds ascertained to occur on Tower Island.

Names of species.	Dawin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, —.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus *bauri*	....	....	....	....	....	....	....	....	....	....	x
2. Dendroica aureola	....	....	....	....	....	....	....	....	....	....	x
3. Certhidea *mentalis*	....	....	....	....	....	....	....	....	....	....	x
4. Geospiza *pachyrhyncha*	....	....	....	....	....	....	....	....	....	....	x
5. Geospiza *acutirostris*	....	....	....	....	....	....	....	....	....	....	x
6. Geospiza *propinqua*	....	....	....	....	....	....	....	....	....	....	x
7. Asio galapagoensis	....	....	....	....	....	....	....	....	....	....	x
8. Fregata aquila	....	....	....	....	[x]	....	....	....	....	....	x
9. Fregata aquila minor	....	....	....	....	....	....	....	....	....	....	x
10. Sula cyanops	....	....	....	....	....	....	....	....	....	....	x
11. Sula piscator	....	....	....	....	*a*[x]	....	....	....	....	....	x
12. Sula brewsteri?	....	....	....	....	*a*[x]	....	....	....	....	....	....
13. Phaëthon æthereus	....	....	....	....	[x]	....	....	....	....	....	x
14. Pœcilonetta galapagensis	....	....	....	....	....	....	....	....	....	....	x
15. Nesopelia galapagoensis	....	....	....	....	....	....	....	....	....	....	[x]
16. Creagrus furcatus	....	....	....	....	....	....	....	....	....	....	x
17. Anous galapagensis	....	....	....	....	....	....	....	....	....	....	x
Total by each collector	0	0	0	0	[4]	0	0	0	0	0	16

a See Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 460.

List of birds ascertained to occur on Bindloe Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus *bindloei*	....	....	....	....	....	....	....	....	....	....	x
2. Dendroica aureola	x?	....	....	....	x	....	....	....	....	....	....
3. Certhidea (fusca?)	....	....	....	....	x	....	....	....	....	....	....
4. Geospiza strenua	....	....	....	....	x	....	....	....	....	....	....
5. Geospiza fortis	....	....	....	....	x	....	....	....	....	....	....
6. Geospiza parvula	....	....	....	....	x	....	....	....	....	....	....
7. Geospiza assimilis	....	....	....	....	x	....	....	....	....	....	....
8. Camarhyncus variegatus	....	....	....	....	x	....	....	....	....	....	....
9. Camarhyncus *bindloei*	....	....	....	....	x	....	....	....	....	....	....
10. Myiarchus magnirostris	....	....	....	....	x	....	....	....	....	....	....
11. Pyrocephalus (abingdoni?)	....	....	....	....	x	....	....	....	....	....	[x]
12. Asio galapagoensis	....	....	....	....	....	....	....	....	....	....	[x]
13. Buteo galapagoensis	....	....	....	....	....	....	....	....	....	....	[x]
14. Fregata aquila	....	....	....	....	....	....	....	....	....	....	[x]
15. Pelecanus californicus	....	....	....	....	....	....	....	....	....	....	[x]
16. Sula nebouxii	....	....	....	....	....	....	....	....	....	....	[x]
17. Sula brewsteri	....	....	....	....	....	....	....	....	....	....	[x]
18. Nesopelia galapagoensis	....	....	....	....	x	....	....	....	....	....	....
19. Hæmatopus galapagensis	....	....	....	....	....	....	....	....	....	....	[x]
20. Arenaria interpres	....	....	....	....	x	....	....	....	....	....	....
21. Calidris arenaria	....	....	....	....	x	....	....	....	....	....	....
22. Larus fuliginosus	....	....	....	....	....	....	....	....	....	....	[x]
Total by each collector	1?	0	0	0	13	0	0	0	0	0	10

List of birds ascertained to occur on Abingdon Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Nesomimus *personatus*	....	....	....	....	....	....	....	....	x	....	x
2. Dendroica aureola	....	....	....	....	x	....	....	....	....	....	....
3. Certhidea fusca	....	....	....	....	x	....	....	....	x	....	....
4. Geospiza strenua	....	....	....	....	x	....	....	....	x	....	....
5. Geospiza *fratercula*	....	....	....	....	x	....	....	....	x	....	....
6. Geospiza fuliginosa	....	....	....	....	x	....	....	....	x	....	....
7. Geospiza parvula	....	....	....	....	x	....	....	....	x	....	....
8. Geospiza difficilis	....	....	....	....	x	....	....	....	x	....	....
9. Geospiza *abingdoni*	....	....	....	....	x	....	....	....	x	....	....
10. Camarhynchus variegatus	....	....	....	....	x?	....	....	....	....	....	....
11. Camarhynchus *habeli*	....	....	....	....	x	....	....	....	x	....	....
12. Myiarchus magnirostris	....	....	....	....	x	....	....	....	x	....	....
13. Pyrocephalus abingdoni	....	....	....	....	....	....	....	....	x	....	....
14. Strix punctatissima	....	....	....	....	x	....	....	....	....	....	....
15. Buteo galapagoensis	....	....	....	....	x	....	....	....	x	....	....
16. Butorides plumbeus	....	....	....	....	....	....	....	....	x	....	....
17. Heteractitis incanus	....	....	....	....	x	....	....	....	....	....	....
18. Larus fuliginosus	....	....	....	....	x	....	....	....	....	....	....
Total by each collector	0	0	0	0	15?	0	0	0	13	0	1

Among the few birds collected on Abingdon Island, Dr. Baur mentions, in a letter, "a black *Geospiza* with a yellow bill." Whether this

is one of the species named in the above list or an additional one, it is of course impossible to tell in the absence of specimens.

List of birds ascertained to occur on Wenman Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Sula piscator	....	....	....	....	....	....	....	....	....	....	x
2. Anous galapagensis	....	....	....	....	....	....	....	....	....	x	....
3. Puffinus subalaris	....	....	....	....	....	....	....	....	....	x	....
4. Oceanodroma cryptoleucura	....	....	....	....	....	....	....	....	....	x	....
5. Procellaria tethys	....	....	....	....	....	....	....	....	....	x	....
Total by each collector	0	0	0	0	0	0	0	0	0	4	1

List of birds ascertained to occur on Cowley Island.

Names of species.	Darwin, 1835.	Néboux, 1836–1839.	Kinberg, 1852.	Kellett and Wood, ——.	Habel, 1868.	Cookson, 1875.	Markham, 1880.	Jones, 1884.	"Albatross," 1888.	Townsend, 1891.	Baur and Adams, 1891.
1. Sula brewsteri?	....	....	....	....	....	....	....	....	....	....	*a* x
Total by each collector	0	0	0	0	0	0	0	0	0	0	1

a Breeding.

List of species of birds which have been ascertained to occur in the Galapagos Archipelago, showing the islands upon or near which each species has been found.

Names of species.	Narborough.	Albemarle.	Duncan.	Crossman.	Brattle.	Charles.	Hood.	Chatham.	Barrington.	Indefatigable.	Jervis.	James.	Tower.	Bindloe.	Abingdon.	Wenman.
1. Nesomimus trifasciatus (Gould)	....	....	....	....	....	x	....	....	....	....	....	....	....	....	....	....
2. Nesomimus macdonaldi, Ridgway	....	....	....	....	....	....	*a*x	....	....	....	....	....	....	....	....	....
3. Nesomimus adamsi, Ridgway	....	....	....	....	....	....	....	x	....	....	....	....	....	....	....	....
4. Nesomimus personatus, Ridgway	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Nesomimus melanotis (Gould)	....	....	....	....	....	x??	....	....	....	....	....	....	....	....	x	....
6. Nesomimus parvulus (Gould)	....	x	....	....	....	....	....	....	....	x	x	x	....	....	....	....
7. Nesomimus bauri, Ridgway	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
8. Nesomimus bindloei, Ridgway	....	....	....	....	....	....	....	....	....	....	....	....	x	....	....	....
—. Nesomimus (undetermined species)	....	....	....	....	....	....	....	....	x	....	....	....	....	x	....	....
9. Dendroica aureola (Gould)	....	x	x	....	....	x	x	x	x	x	x	x	x	x	x	....
10. Certhidea olivacea (Gould)	....	....	....	....	....	....	....	....	....	....	....	x	....	....	....	....
11. Certhidea salvini, Ridgway	....	....	....	....	....	....	....	....	....	x	....	....	....	....	....	....
12. Certhidea albemarlei, Ridgway	....	x	....	....	....	....	....	....	....	....	....	....	....	....	....	....
13. Certhidea luteola, Ridgway	....	....	....	....	....	....	....	x	....	....	....	....	....	....	....	....
14. Certhidea fusca, Sclater and Salvin	....	....	....	....	....	....	....	....	....	....	....	....	....	x?	x	....
15. Certhidea cinerascens, Ridgway	....	....	....	....	....	....	x	....	....	....	....	....	....	....	....	....

a Also Gardner Island, fide G. Baur; but possibly *N. trifasciatus* and not *N. macdonaldi*.

List of species of birds which have been ascertained to occur in the Galapagos Archipelago, showing the islands upon or near which each species has been found—Continued.

Names of species.	Narborough.	Albemarle.	Duncan.	Crossman.	Brattle.	Charles.	Hood.	Chatham.	Barrington.	Indefatigable.	Jervis.	James.	Tower.	Bindloe.	Abingdon.	Wenman.
16. Certhidea mentalis, Ridgway													x			
17. Certhidea bifasciata, Ridgway									x							
—. Certhidea (undetermined)			x								x					
18. Progne modesta (Néboux)						x		x?		x		x				
19. Geospiza magnirostris, Gould		x?				x		x			x?					
20. Geospiza strenua, Gould						x		x		x		x		x	x	
21. Geospiza pachyrhyncha, Ridgway													x			
22. Geospiza dubia, Gould								x								
23. Geospiza conirostris, Ridgway							x									
24. Geospiza bauri, Ridgway												x				
—. Geospiza (undetermined)									x		x					
—. Geospiza (undetermined)											x					
25. Geospiza media, Ridgway							x									
26. Geospiza fortis, Gould		x	x			x				x		x		x		
27. Geospiza fratercula, Ridgway															x	
28. Geospiza fuliginosa, Gould		x	x			x	x	x		x		x			x	
29. Geospiza parvula, Gould								x	x?	x		x		x	x	
30. Geospiza acutirostris, Ridgway													x			
31. Geospiza dentirostris, Gould						x		x?								
32. Geospiza difficilis, Sharpe						x?									x	
33. Geospiza debilirostris, Ridgway												x				
34. Geospiza scandens (Gould)												x				
35. Geospiza intermedia, Ridgway						x										
36. Geospiza assimilis (Gould)												x?		x		
37. Geospiza fatigata, Ridgway		x?						x??		x	x?					
—. Geospiza (undetermined)			x?													
38. Geospiza abingdoni (Sclater and Salvin)															x	
39. Geospiza barringtoni, Ridgway									x							
40. Geospiza brevirostris, Ridgway						x				x?						
41. Geospiza propinqua, Ridgway													x			
42. Camarhynchus variegatus, Sclater and Salvin		x				x		x		x		x		x??	x??	
43. Camarhynchus crassirostris, Gould						x?										
44. Camarhynchus psittaculus, Gould						x?				x	x	x				
45. Camarhynchus affinis, Ridgway		x														
—. Camarhynchus (undetermined)			x?													
46. Camarhynchus habeli, Sclater and Salvin															x	
47. Camarhynchus bindloei, Ridgway														x		
48. Camarhynchus compressirostris, Ridgway											x					
49. Camarhynchus pauper, Ridgway						x										
50. Camarhynchus incertus, Ridgway												x				
51. Camarhynchus salvini, Ridgway								x								
52. Camarhynchus prosthemelas, Sclater and Salvin		x				x				x	x	x				
53. Camarhynchus pallidus (Sclater and Salvin)										x	x	x				
54. Camarhynchus productus, Ridgway		x														
55. Dolichonyx oryzivorus (Linnæus)												x				
56. Myiarchus magnirostris (Gray)		x	x			x	x	x	x	x	x	x		x	x	
57. Pyrocephalus nanus, Gould											x?	x				
58. Pyrocephalus intercedens, Ridgway		x								x						
59. Pyrocephalus carolensis, Ridgway						x										
60. Pyrocephalus abingdoni, Ridgway														x?	x	
61. Pyrocephalus dubius, Gould								x								
—. Pyrocephalus (undetermined)			x													
62. Coccyzus melanocoryphus, Vieillot						x		x								
63. Strix punctatissima										x		x			x	
64. Asio galapagoensis (Gould)		x					x			x		x	x	x		
65. Buteo galapagoensis (Gould)		x	x				x	x	x	x		x		x	x	
66. Fregata aquila								x	x				x	x		
67. Fregata aquila minor (Gmelin)													x			
68. Pelecanus californicus, Ridgway		x				x		x	x					x		
69. Sula cyanops, Sundevall						x							x			
70. Sula nebouxii, Milne-Edwards		x			x	x	x	x	x					x		
71. Sula brewsteri, Goss													x?	ax		
72. Sula piscator (Linnæus)										x			x			x
73. Phaëthon æthereus, Linnæus													x			
74. Ardea herodias, Linnæus?			x							x						
75. Herodias egretta (Gmelin)?		x														
76. Butorides plumbeus (Sundevall)		x	x			x	x	x	x	x		x			x	
77. Nyctanassa violacea (Linnæus) *b*		x					x	x		x						
78. Phœnicopterus ruber, Linnæus						x				x		x				
79. Pœcilonetta galapagensis, Ridgway		x	x			x	x	x	x	x	x	x	x			

a Also found on Cowley Island by Baur and Adams.
b Also found on Gardner Island by Baur and Adams.

List of species of birds which have been ascertained to occur in the Galapagos Archipelago, showing the islands upon or near which each species has been found—Continued.

Names of species.	Narborough.	Albemarle.	Duncan.	Crossman.	Brattle.	Charles.	Hood.	Chatham.	Barrington.	Indefatigable.	Jervis.	James.	Tower.	Bindloe.	Abingdon.	Wenman.
80. Querquedula versicolor (Vieillot)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
81. Nesopelia galapagoensis (Gould)	...	x	x	...	...	x	x	x	...	x	...	x	x	x	...	...
82. Porzana spilonota (Gould)	...	...	...	...	...	...	...	...	...	x	...	x	...	...	...	...
83. Porzana galapagoensis, Sharpe	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
84. Gallinula galeata (Lichtenstein)	...	x	...	...	...	...	...	...	...	...	...	...	...	...	...	...
85. Hæmatopus galapagensis, Ridgway	...	x	...	...	...	...	x	x	...	x	...	x	...	x	...	...
86. Arenaria interpres (Linnæus)	...	x	...	...	...	...	x	...	...	x	...	...	...	x	...	...
87. Squatarola squatarola (Linnæus)	...	x	...	...	...	...	...	...	...	...	...	...	...	...	...	...
88. Ægialitis semipalmata, Bonaparte	...	x	...	...	...	...	...	...	...	x	...	...	...	...	...	...
89. Calidris arenaria (Linnæus)	...	x	...	...	...	...	...	...	...	...	...	...	...	x	...	...
90. Tringa minutilla, Vieillot	...	...	...	...	...	...	...	...	...	x	...	...	...	...	...	...
91. Heteractitis incanus (Gmelin)	...	x	...	...	...	...	x	...	...	x	...	x	...	...	x	...
92. Numenius hudsonicus, Latham	...	x	...	...	...	...	...	x	...	x	...	...	...	...	...	...
93. Numenius borealis (Forster)	...	...	...	...	...	x	...	...	...	...	...	...	...	...	...	...
94. Himantopus mexicanus (Müller)[a]	...	x	...	...	...	...	...	x	...	x	...	x	...	...	...	...
95. Larus fuliginosus, Gould	...	...	...	...	...	x	...	x	x	x	...	x	...	x	x	...
96. Creagrus furcatus (Néboux)	...	...	...	...	x	...	x	x	...	...	...	x	x	...	...	...
97. Anous galapagensis, Sharpe	...	x	...	...	...	x	x	x	...	...	...	...	x	...	...	x
98. Diomedea exulans, Linnæus?	...	...	...	...	...	...	x	...	...	...	...	...	...	...	...	...
99. Diomedea nigripes, Audubon?	...	...	...	...	...	...	x	...	...	...	...	...	...	...	...	...
100. Aestrelata phæopygia, Salvin	...	...	...	...	...	...	...	x	...	x	...	x	...	...	...	...
101. Puffinus subalaris, Townsend[a]	...	...	...	...	...	x?	...	x	...	...	x	...	...	...	...	x
102. Oceanodroma cryptoleucura, Ridgway	...	x	...	...	...	...	...	...	...	...	...	...	...	...	...	x
103. Procellaria tethys, Bonaparte	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	x
104. Oceanites gracilis (Elliot)	...	x	...	...	...	...	...	...	...	...	...	x	...	...	...	...
105. Spheniscus mendiculus, Sundevall	...	x	...	...	...	x	...	...	...	...	...	x	...	...	...	...
Total	0	35	13	0	2	32	21	32	15	36	15	36	17	22	18	5

a Also, Kicker Rock, Baur and Adams.

Family MIMIDÆ.

Genus NESOMIMUS, Ridgway.

Nesomimus, Ridgway, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 102, footnote. Type, *Orpheus melanotis*, Gould.

Generic characters.—Similar to *Mimus*, Boie, but bill longer and much more compressed basally, and tarsus much longer (nearly twice as long as middle toe instead of only about one-third longer).

Range.—Peculiar to the Galapagos Archipelago.

KEY TO THE SPECIES OF NESOMIMUS

a^1. Breast crossed by a broken band of dusky spots (sometimes interrupted medially), and chest with a similar but less distinct band (the spots mostly concealed), the two separated by an area of plain white.

b^1. Larger (wing 4.60–5.05, exposed culmen 1.27–1.35); white tips to lateral rectrices indistinct.

c^1. Pileum and back blackish brown, with very indistinct grayish edgings. (Charles Island; Gardner Island?) ..... 1. *N. trifasciatus* (p. 483).

c^2. Pileum and back brownish gray, the feathers with dusky mesial stripes (broader on back). (Hood Island.) ..... 2. *N. macdonaldi* (p. 484).

b^2. Smaller (wing 4.20–4.50, exposed culmen 0.85–0.95); white tips to lateral rectrices very distinct and more extended. (Chatham Island.) 3. *N. adamsi* (p. 485).

a^2. No markings on breast or chest.

b^1. Darker, with dusky prevailing on upper parts.

c^1. Bill larger, but wing averaging shorter (exposed culmen 0.92–1.07, wing 4.00–4.60). (Abingdon Island)..... 4. *N. personatus* (p. 488).

c^2. Bill smaller and more slender, but wing averaging longer (exposed culmen 0.80–0.87, wing 4.20–4.68). (James, Indefatigable, and Jervis islands)..... 5. *N. melanotis* (p. 489).

b^2. Paler, with grayish brown prevailing on upper parts.

c^1. Bill smaller (exposed culmen 0.72–0.80). (Albemarle Island.) 6. *N. parvulus* (p. 491).

c^2. Bill larger (exposed culmen 0.83–1.00).

d^1. Larger, with shorter tarsus (exposed culmen 0.95–1.00, wing 4.30–4.45, tail 3 95–4.30, tarsus 1.25–1.35. (Tower Island).. 7. *N. bauri* (p. 492).

d^2. Smaller, with longer tarsus (exposed culmen 0.83–0.91, wing 3.85–4.20, tail 3.50–3.90, tarsus 1.32–1.39). (Bindloe Island). 8. *N. bindloei* (p. 492).

I am aware of the unsatisfactory nature of the above key, which is owing in large measure to the fact that in some cases the specimens upon which it is based (Dr. Baur's specimens having previously been returned to him) are in a state of plumage different from that of specimens of the allied species, rendering exact comparison impossible.

The species of this genus fall into two groups, which in a more exact sense might be considered as species, the several allied forms being more properly subspecies or local races. Thus *N. trifasciatus*, *N. macdonaldi*, and *N. adamsi*, with their double breastbands, represent one type, while *N. melanotis*, *N. parvulus*, *N. personatus*, *N. bauri*, and *N. bindloei* represent another. Were these forms of continental habitat, where there was every probability or even certainty of intergradation, I should consider them subspecies and give them trinomial instead of binomial names (for example, *Nesomimus trifasciatus macdonaldi*, *Nesomimus trifasciatus adamsi*, *Nesomimus melanotis personatus*, *Nesomimus melanotis parvulus*, *Nesomimus melanotis bauri*, and *Nesomimus melanotis bindloei*). But the case of insular forms is different, intergradation in the same sense being impossible, and therefore, notwithstanding the slight differences they present, I prefer to consider the several forms as if they were distinct species.

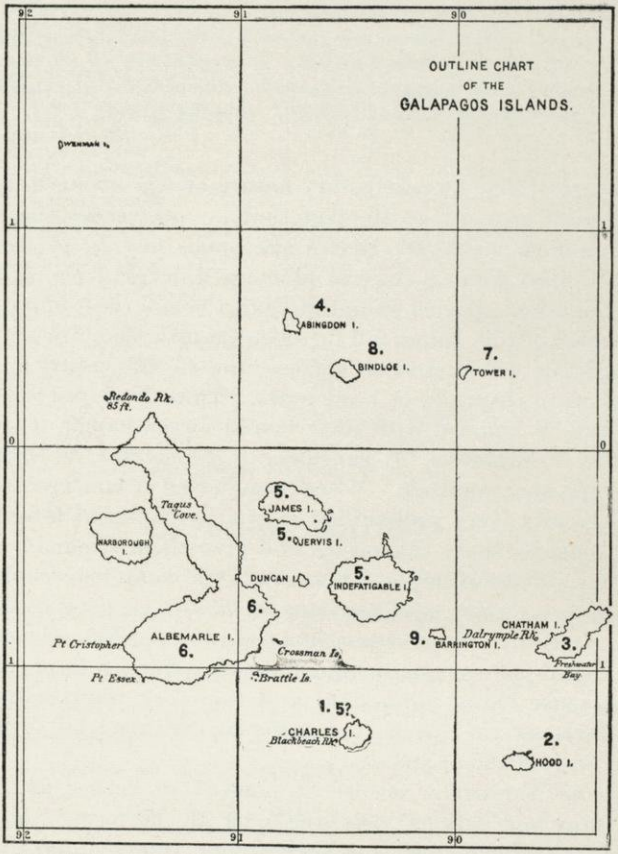
The genus *Nesomimus* occurs at present, or rather as recently as Messrs. Baur and Adams' visit (1891), on all the larger islands of the Galapagos Archipelago, except Narborough, Duncan, and Charles. It was formerly represented on the last-named by a peculiar species (*N. trifasciatus*, closely related to *N. macdonaldi* of Hood Island), which seems to have, like *Geospiza magnirostris* of the same island, become extinct there.[1] The genus was also found by Messrs. Baur and Adams to be

[1]Messrs. Baur and Adams collected a *Nesomimus* on Gardner Island, which they identified as *N. macdonaldi*, the Hood Island form; but as Gardner Island is much closer to Charles than to Hood Island it is possible the species was *N. trifasciatus*. Unfortunately the specimens were lost, and the form must therefore remain in doubt until more can be procured.

absent from the northern part of Chatham Island, though observed and collected by them in the southern portion.

In addition to the islands inhabited by an identified species, there are two which possess, or formerly possessed, forms not satisfactorily determined. These are Barrington Island, upon which a *Nesomimus* was found to be common by Messrs. Baur and Adams—but their speci-

ASCERTAINED RANGE OF THE GENUS NESOMIMUS, RIDGWAY.



1. *Nesomimus trifasciatus* (Gould).
2. *Nesomimus macdonaldi*, Ridgway.
3. *Nesomimus adamsi*, Ridgway.
4. *Nesomimus personatus*, Ridgway.
5. *Nesomimus melanotis* (Gould).
6. *Nesomimus parvulus* (Gould).
7. *Nesomimus bauri*, Ridgway.
8. *Nesomimus bindloei*, Ridgway.
9. (Undetermined form.)

mens having been lost, the species is unknown—and Charles Island, upon which Darwin found *N. trifasciatus* and Kinberg what Professor Sundevall identified as *N. melanotis*. Dr. Baur informs me that not a single specimen of *Nesomimus* could be discovered by Mr. Adams and himself on Charles Island; so it would seem that those which formerly inhabited that island had become extinct.

NESOMIMUS TRIFASCIATUS (Gould).

Orpheus trifasciatus, GOULD, Proc. Zool. Soc., 1837, p. 27 (no locality; coll. J. Gould).

Mimus trifasciatus, GRAY, Zool. Voy. Beag., III, Birds, 1841, p. 62, pl. XVI (Charles Island).—BONAPARTE, Consp. Av., I, 1850, p. 277.—SCLATER, Proc. Zool. Soc., 1859, p. 345.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 127.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 3.—SALVIN, Trans Zool. Soc., IX, Pt. IX, 1876, p. 471.—SHARPE, Cat. Birds Brit. Mus., VI, 1881, p. 346.

Specific characters.—Similar to *N. macdonaldi*, Ridgway, of Hood Island, but pileum and back blackish brown with indistinct grayish edgings.

Range.—Galapagos Archipelago: Charles Island (Darwin). [Extinct?.]

"*Adult.*—General color above blackish brown, the feathers mottled with obsolete ashy markings on the back, a little plainer on the head, the lower back, and rump, the latter ashy brown, mottled with dark brown centers to the feathers; least wing-coverts blackish brown, edged with ashy whitish; median and greater series blackish, tipped with white and margined with ashy brown; bastard wing-feathers and primary coverts blackish brown, edged with ashy brown and narrowly tipped with white; quills blackish brown, the secondaries margined with pale reddish brown and tipped with white, the primaries edged with ashy whitish; upper tail-coverts light brown with ashy-whitish margins; tail-feathers dark brown, all but the center ones lighter brown at the tip, the outer ones whitish at the end of either web; lores dusky blackish; over the eye a distinct white stripe; sides of face and ear-coverts whitish, mottled below the eye and on the fore part of the ear coverts with dusky blackish tips to the feathers; cheeks and throat and fore neck white, with a slight mustache of dusky blackish; remainder of under surface of body white, the sides spotted with blackish brown in the form of longitudinal drops; across the chest a band of blackish-brown feathers tipped with white; thighs brown, some of the inner feathers tipped with white; under tail-coverts white, with dusky bases; under wing-coverts and axillaries dark brown, edged with dull white; quills dusky brown, with ashy-fulvous margins to the inner web. Total length, 9.5 inches; culmen, 1.3; wing, 5; tail, 4.2; tarsus, 1.7.

"The second specimen in the Museum has the chest-band much less developed than in the one described, it being composed of blackish-brown bars instead of forming a broad band across." (Sharpe.)

No specimens of this form have been collected by any one since Darwin's visit to the Galapagos, and the two examples in the British Museum (the one described by Dr. Sharpe being the type) appear to be the only ones extant. It may possibly still exist upon some island from which no specimens have been secured; but no species of the genus was found on Charles Island by either Mr. Townsend or Messrs. Baur and Adams, and it is not at all unlikely *N. trifasciatus* may be extinct.

Messrs. Baur and Adams obtained a *Nesomimus* on Gardner Island, which lies between Charles and Hood islands, which Dr. Baur thought to be the same as the Hood Island form (*N. macdonaldi*); but as Gardner Island lies very close to Charles, it seems more likely to have been *N. trifasciatus*. Dr. Baur's specimens having been lost, the question remains to be decided.

NESOMIMUS MACDONALDI, Ridgway.

(Plate LVI, fig. 6.)

Nesomimus macdonaldi, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 103, fig. 1 (Hood Island, Galapagos; U. S. Nat. Mus.).

Specific characters.—Similar to *N. trifasciatus* (Gould), but much grayer above, much more black on side of head, the bill much longer, and the tarsi much shorter.

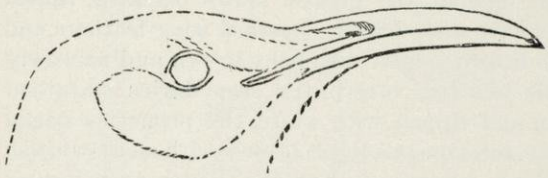


FIG. 1. *Head of Nesomimus macdonaldi.*

Range.—Galapagos Archipelago: Hood Island (Townsend, Baur and Adams); ? Gardner Island (Baur and Adams.[1])

Adult male.—(Type, No. 116066, U.S.N.M.; Hood Island, Galapagos, April 7, 1888; U. S. S. *Albatross.*) Above brownish gray, more ashy anteriorly and on lesser wing-coverts, becoming decidedly brown on rump, each feather with a central or mesial space of dusky, these markings largest on back and scapulars, nearly obsolete on lower back and hind neck; wings (except lesser coverts) dull black, the posterior row of lesser coverts, middle coverts, and greater coverts broadly margined at tips with white, forming three bands across the wing; greater coverts and tertials broadly edged with drab or grayish brown, the latter margined terminally with white; primaries and their coverts narrowly edged with pale brownish gray or dull whitish; tail blackish dusky, the outer feather with an ill-defined pale brownish-gray space near tip of inner web, next to edge, the second with a mere edging of the same color in corresponding position. A narrow and poorly defined superciliary stripe of white, bordered beneath by a blackish stripe covering lores, extending beneath eye, and thence along upper edge of auricular region, the rest of the latter dull light gray mixed with black, especially on lower posterior portion; a broad white malar stripe, bordered beneath by a narrow interrupted stripe of dusky along each side of throat. Under parts white, tinged with pale drab across chest, where

[1] The specimens collected were lost. Gardner Island being nearer to Charles than to Hood, the species may have been *N. trifasciatus*.

sparsely spotted with brownish dusky; upper part of breast immaculate, forming a rather distinct broad band or belt, this succeeded by broad lateral patches (nearly or quite meeting on middle of breast) where the feathers are faintly tinged with brownish gray and marked with large central, more or less U-shaped spots of dusky; sides and flanks broadly streaked with dusky. Bill black, slightly brownish on basal portion of lower mandible; legs and feet brownish black. Length (skin), 10.50; wing, 4.90; tail, 4.48 (middle feathers not grown out); exposed culmen, 1.25; bill to rictus, 1.60; tarsus, 1.55; middle toe, 0.90.

Adult female.—(No. 116064 U.S.N.M.; Hood Island, Galapagos, April 7, 1888.) Similar to the male described above, but slightly smaller, bill straighter, and under parts more tinged with brown, as well as more distinctly spotted across chest. Length (skin), 10; wing, 4.55; tail, 4; exposed culmen, 1.25; bill to rictus, 1.58; tarsus, 1.49; middle toe, 0.88.

Four additional adult males agree essentially in coloration with the one described, and measure as follows: Length (skin), 10–10.50; wing, 4.60–5.05; tail, 4.40–4.60; exposed culmen, 1.27–1.35; bill to rictus, 1.55–1.65; tarsus, 1.50–1.53; middle toe, 0.88–0.93.

This fine new species is named after the late Colonel Marshall McDonald, United States Commissioner of Fish and Fisheries.

The collection of Messrs. Baur and Adams contains one example of this species from Hood Island.

Measurements of Nesomimus macdonaldi.

No.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
116063	U. S.	Adult male	Hood Island	Apr. 7, 1888	4.95	(4.30)	1.30	1.50	0.91
116064	U. S.	Adult female	do	do	4.50	(4.00)	1.24	1.50	0.88
116065	U. S.	Adult male	do	do	(4.50)	(4.08)	1.25	1.50	0.92
116066	U. S.	do	do	do	4.93	4.50	1.28	1.52	0.90
116067	U. S.	do	do	do	5.00	(4.12)	1.22	1.50	0.90
149823	U. S.	do	do	do	.....	.....	1.28	1.51	0.91
149824	U. S.	do	do	do	4.85	(4.28)	1.23	1.52	0.91
149825	U. S.	Adult	do	do	(4.32)	(4.00)	1.21	1.45	0.85
149846	U. S.	do	do	do	4.50	4.20	1.20	1.50	0.90
			Average		4.79	4.19	1.25	1.50	0.90

NESOMIMUS ADAMSI, Ridgway.

(Plate LVI, fig. 2.)

Mimus melanotis (part), GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 62 (Chatham Island).—SUNDEVALL, Proc. Zool. Soc., 1871, p. 124 (Chatham Island).

Nesomimus melanotis (part), RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 102 (Chatham Island).

Nesomimus adamsi, RIDGWAY, Proc. U. S. Nat. Mus., XVII (Nov. 15, 1894)[1], p. 358 (Chatham Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *N. macdonaldi*, Ridgway, in color, but very much smaller, and differing in some respects as to coloration.

Range.—Galapagos Archipelago: Chatham Island (Darwin, Kinberg, Townsend, Baur and Adams).

[1] Author's edition of separates.

Adult male.—Type, collection Dr. G. Baur; Chatham Island, June 13, 1891. Above brownish gray changing to light brown on the rump; top of head marked with distinct mesial streaks of black (proportionally narrower than those of *N. macdonaldi*) and back with broad mesial spots of dusky (much less intense than those of *N. macdonaldi*); rump and upper tail-coverts (the latter grayish, like back, etc.) with streaks indistinct and mostly concealed; lesser wing-coverts light brownish gray with dusky central spots (mostly concealed); rest of wings dusky, the middle coverts with broad terminal margins of grayish white, slightly tinged with buff; greater coverts broadly tipped and edged with the same, the edgings more buffy, the tips purer white; secondaries broadly edged with light buffy brown passing into buffy white on terminal margins; primaries, primary coverts, and alula very narrowly edged with grayish white and with broader terminal margins of purer white; tail nearly black, becoming brownish slaty basally, the feathers indistinctly but rather broadly edged with brownish gray; outermost feather edged with white, and with a large white space (about 0.85 long) terminating the inner web; next feather with the white space about 0.80 long, the next with it about 0.60, and so on, decreasing in size and distinctness of definition to the fifth, where it forms a narrow mark along the edge of the inner web near tip. A rather indistinct superciliary stripe of dull grayish white; lores, suborbital region, and ear-coverts blackish, the last streaked with light brownish gray. Under parts, including malar region, buffy white; along each side of throat a narrow streak of dusky; chest faintly shaded with grayish, forming an indistinct broad band, within which many of the feathers have a small dark brownish gray cordate central spot; sides of breast similarly colored, forming two lateral patches nearly meeting on the median line, but the dark spots larger and more distinct; sides and flanks with broad longitudinal streaks of dusky, most intense on flanks. Bill brownish black, becoming pale brownish on basal third of mandible; legs and feet black; "iris dull yellow." Length (skin), 8.60; wing, 4.40; tail, 3.90; exposed culmen, 0.87; bill to rictus, 1.25; tarsus, 1.50; middle toe, 0.83.

Young.—No. 115933, U.S.N.M.; Chatham Island, April 5, 1888; C. H. Townsend. Forehead and crown dark brownish gray, uniform anteriorly but posteriorly streaked with pale brownish gray, the feathers of the hinder crown and occiput being this color, with broad, dusky grayish mesial streaks; nape and hind neck very pale brownish gray, indistinctly mottled with darker tips to the feathers; back and scapulars buffy brown with large central longitudinal spots of dusky; lower back and rump buffy cinnamon, broadly but indistinctly streaked with dusky toward upper tail-coverts, the latter nearly uniform grayish tinged with cinnamon on edges; wings dusky (nearly black on remiges); lesser coverts broadly margined with buffy brownish gray; middle coverts broadly tipped with pale buff; greater coverts broadly tipped with pale buff and broadly edged with deep buff; secondaries broadly margined

with cinnamon-buff, paler at tips; primaries, primary coverts, and alulæ edged with dull whitish. Tail as in adult. Under parts dull white, the chest marked with distinct blackish spots (larger and more round centrally, smaller and more angular or sagittate laterally); sides and flanks broadly streaked with dusky grayish. An indistinct superciliary stripe of grayish white; lores and suborbital region dusky mixed with grayish; ear-coverts dusky grayish, paler centrally, the feathers with dull whitish shaft streaks.

This very distinct species, while about the size of *N. melanotis*, clearly belongs to the same group as *N. trifasciatus* and *N. macdonaldi*, having the same brownish gray band across the chest and broken belt of dusky spots across the lower breast. The ear-coverts are more extensively and solidly black than in the larger species, nearly as much so as in *N. melanotis*, which perhaps has caused it to be referred to the latter. The white tips to the outer rectrices are much more extensive and more abruptly defined than in *N. macdonaldi*, being very much as in *N. melanotis*.

Compared with 16 specimens of *N. melanotis* from James Island, the 11 adults of the present species from Chatham Island differ in the much lighter color of the pileum, the ground color of which is brownish gray relieved by mesial streaks of blackish, which never, at any season, equal the gray in extent; the feathers of the dorsal region are much more broadly edged with gray, and the lower parts are markedly different, as described above.

The young of *N. adamsi* may at once be distinguished from that of *N. melanotis* by its much paler coloration above, and much more distinctly as well as extensively cinnamomeous rump, the entire pileum of the young *N. melanotis* (of which two are before me) being nearly uniform sooty blackish, whereas the young *N. adamsi* described above is the darkest crowned of five examples.

The failure of previous authors to distinguish this species from *N. melanotis* is doubtless due to the circumstance that their specimens were in such badly worn plumage that the differential characters were not apparent; certainly this was the case with those examined by Professor Sundevall, and also with the series collected by Mr. Townsend. Dr. Habel, whose collection formed the basis of Mr. Salvin's monograph, did not obtain it.

Measurements of Nesomimus adamsi.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
52409	U. S.	Adult	Chatham Island.		4.43	(4.00)	0.90	1.47	0.85
125889	U. S.	Adult male	do	Mar. 30, 1891	4.55	4.12	.95	1.50	.85
125890	U. S.	Adult female	do	do	4.20	3.62	.85	1.50	.82
125891	U. S.	Adult male	do	do	4.32	3.75	.92	1.50	.87
125893	U. S.	Adult	do	do	4.30	3.90	.97	1.50	.86
			Average		4.36	3.85	.92	1.49	.85

NESOMIMUS PERSONATUS, Ridgway.

(Plate LVI, fig. 5.)

Nesomimus personatus, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 104 (Abingdon Island, Galapagos; collection U. S. Nat. Mus.).

Specific characters.—Similar to *N. melanotis* (Gould), but much larger and darker, with sides and flanks more tinged with brown.

Range.—Galapagos Archipelago: Abingdon Island (Townsend).

Adult male.—Type, No. 116098, U.S.N.M.; Abingdon Island, Galapagos, April 16, 1888; U. S. S. *Albatross*. Pileum, hind neck, back, scapulars, wings, and tail[1] dull blackish, the feathers indistinctly margined or edged with dull grayish brown, these edgings much wider and more distinct on wing- and tail-feathers; feathers of hind neck ash-gray beneath the surface; lower back, rump, and upper tail-coverts dull grayish brown, the feathers darker centrally, forming indistinct streaks; middle and greater wing-coverts broadly tipped with dull white, forming two distinct bands across wing; remiges rather broadly margined at tips with dull light brownish gray (more brownish on tertials); three outer tail-feathers broadly tipped with pale grayish brown (fading into dull white exteriorly), this color confined to the inner web on third feather; fourth feather with a more restricted and less definite lighter terminal space, and two middle pairs merely fading at tips into dull grayish brown edged with dull whitish. A superciliary stripe of dull grayish white, narrower, whiter, and more sharply defined over lores; lores, suborbital region, and auriculars dull black, forming a conspicuous patch along side of head; malar region, sides of neck, and lower parts white, the first speckled with dusky, the second spotted with same posteriorly, and the latter tinged with light brownish, except on chin and throat, the sides and flanks very distinctly washed or suffused with brown, the latter broadly streaked or striped with dusky. Bill black, inclining to horn color at tip of upper and base of lower mandible; legs and feet brownish black. Length (skin), 9.30; wing, 4.50; tail, 4.15; exposed culmen, 1; bill from rictus, 1.35; tarsus, 1.43; middle toe, 0.87.

Adult female.—No. 116099, U.S.N.M.; same locality, etc. Essentially like the male in coloration, but smaller. Length (skin), 9; wing, 4.10; tail (feathers much worn), 3.90; exposed culmen, 1.07; bill from rictus, 1.40; tarsus, 1.35; middle toe, 0.80.

Six additional adult males agree in all essential characters with the type.

[1]The specimen was molting when shot, though the new plumage had been mostly assumed; consequently, in this description, the duller, faded coloration of the old feathers is ignored.

Measurements of Mimus personatus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
116094	U. S.	Adult male	Abingdon Island	Apr. 16, 1888	4.37	(3.82)	0.98	1.40	0.90
116095	U. S.	do	do	do	4.28	3.91	.98	1.45	.87
116096	U. S.	do	do	do	4.45	3.98	1.00	1.45	.87
116097	U. S.	do	do	do	4.48	4.07	1.00	1.48	.88
116098	U. S.	do	do	do	4.55	4.10	.98	1.45	.87
135666	U. S.	do	do	do	4.37	4.10	.98	1.43	.88
135667	U. S.	do	do	do	4.35	4.12	1.07	1.43	.85
135668	U. S.	do	do	do	4.45	4.00	1.00	1.50	.90
135670	U. S.	do	do	do	4.40	4.00	.98	1.42	.88
135671	U. S.	do	do	do	4.20	3.82	.95	1.43	.85
135672	U. S.	do	do	do	4.28	.....	.90	1.50	.87
			Average		4.38	4.01	.98	1.45	.87
116099	U. S.	Adult female	Abingdon Island	Apr. 16, 1888	4.12	3.78	1.00	1.38	.80
135674	U. S.	do	do	do	4.15	.....	1.00	1.33	.82
135675	U. S.	do	do	do	4.12	3.73	.98	1.38	.....
			Average		4.13	3.76	.99	1.36	.81

NESOMIMUS MELANOTIS (Gould).

(Plate LVI, fig. 2.)

Orpheus melanotis, GOULD, Proc. Zool. Soc., 1837, p. 27 (no locality; coll. J. Gould).

Mimus melanotis, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 62, pl. XVII ("Chatham and James islands," Galapagos Archipelago).—SCLATER, Proc. Zool. Soc., 1859, p. 345.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (part: James and Indefatigable islands); Nom. Av. Neotr., 1873, p. 3.—SUNDEVALL, Proc. Zool. Soc., 1871, pp. 124, 126 (part: Charles, James, and Indefatigable islands).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 471 (Charles, James, and Indefatigable islands).—SHARPE, Cat. Birds Brit. Mus., VI, 1881, p. 349.

Nesomimus melanotis (part), RIDGWAY, Proc. U. S. Nat. Mus., XII, 1890, p. 102 (James and Indefatigable islands).

Specific characters.—Similar to *N. personatus*, Ridgway, of Abingdon Island, but much smaller, the bill especially; colors paler, with the flanks less strongly tinged with brown.

Range.—Galapagos Archipelago: ?? Charles Island (Kinberg); Indefatigable Island (Habel, Kinberg, *Albatross*, Baur and Adams); Jervis Island (Baur and Adams); James Island (Darwin, Kinberg, Townsend, Baur and Adams).

Adult female.[1]—No. 115990, U.S.N.M.; James Island, April 11, 1888; C. H. Townsend. Entire pileum sooty blackish, the feathers narrowly margined with brownish gray, producing a scaled appearance; hind neck light brownish gray—almost grayish white, longitudinally spotted with sooty black, producing a conspicuous collar; back and scapulars sooty blackish, the feathers indistinctly margined with dull brownish gray; lower back and rump light buffy brownish, almost uniform; upper tail-coverts brownish gray. Wings dusky black; lesser coverts broadly margined with brownish gray; middle coverts broadly

[1] There is no adult male in good plumage available for description.

tipped with dull white; greater coverts broadly tipped with dull buffy white and edged with light grayish brown; secondaries edged with light grayish brown, more whitish terminally, the tertials with broader, browner edgings which terminate in still broader dull whitish tips; primaries, primary coverts, and alula not distinctly edged with paler except at tips. Tail dusky blackish, the feathers edged with dull brownish gray; outermost feather with a terminal spot of pale brownish gray passing into white at tip, this much broadest (0.07 of an inch next to shaft) on inner web; these light-colored tips gradually diminish in size to the middle pair of rectrices, which have merely a narrow terminal margin of brownish gray. A distinct superciliary stripe of dull grayish white extending from bill to occiput; a whitish crescent immediately beneath eye; lores and entire auricular region uniform sooty blackish, connected by a narrow band beneath the suborbital whitish crescent. Malar region, sides of neck, and entire under parts white, the first minutely speckled posteriorly with dusky; sides and flanks slightly tinged with buff and broadly streaked with dusky. Bill black, paler at base of mandible; legs and feet black. Length (skin), 9.20; wing, 4.10; tail, 3.95; exposed culmen, 0.88; bill to rictus, 1.08; tarsus, 1.40; middle toe, 0.80.

Young male.—No. 115991, U.S.N.M.; James Island, April 11, 1888; C. H. Townsend. Similar to the adult, as described above, but chest and upper breast thickly marked with triangular spots of grayish dusky; feathers of pileum without grayish margins, except on forehead, and there indistinct; superciliary stripe less distinct, and dusky band on side of head (from lores to auriculars, inclusive) less black, with the center of the auricular region mostly light grayish; wing-markings more tinged with buff, especially tips of greater coverts; rump and upper tail-coverts more obviously streaked.

Adults in worn plumage are much more uniform above, the lighter margins to the feathers of the pileum and dorsal region having disappeared while the broad whitish collar across the hind neck is unbroken by dusky spotting.

Owing to the circumstance that so few of the specimens are in good plumage, it is impossible to make satisfactory comparison between specimens from the different islands. Those from Jervis Island (in Dr. Baur's collection) appear, however, to be rather browner (some of them conspicuously so) than those from James and Indefatigable.

Dr. Baur's collection contained specimens from James (8), Indefatigable (5), and Jervis (5).

I have not seen specimens from Charles Island, and doubt the correct identification of the so-called *N. melanotis* from that locality.

Measurements of Nesomimus melanotis.

Number.	Collection.	Sex and age.	Locality.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
115986	U. S. N. M.	Adult male ...	James Island, Galapagos.	4.55	4.30	0.90	1.45	0.77
115983	U. S. N. M.	.....do	.....do	4.65	4.40	.87	1.50	.85
115987	U. S. N. M.	Adult	.....do	4.35	4.20	.82	1.45	.78
115985	U. S. N. M.	Adult female .	.....do	4.05	3.80	.85	1.40	.78
115989	U. S. N. M.	.....do	.....do	4.20	4.08	.82	1.35	.78
115984	U. S. N. M.	.....do	.....do	4.18	3.90	.87	1.42	.85
115990	U. S. N. M.	.....do	.....do	4.10	3.95	.88	1.40	.80
			Average	4.29	4.09	.86	1.42	.80
116036	U. S. N. M.	.....do	Indefatigable Island.....	4.28	4.12	.78	1.42	.82
125888	U. S. N. M.	.....do	.....do	4.30	4.05	.85	1.45	.82
116034	U. S. N. M.	Adult	.....do	4.48	4.20	.82	1.40	.78
116035	U. S. N. M.	Adult male ...	.....do	4.52	4.22	.90	1.50	.80
			Average	4.40	4.15	.84	1.44	.81

NESOMIMUS PARVULUS (Gould).

(Plate LVI, fig. 1.)

Orpheus parvulus, GOULD, Proc. Zool. Soc., 1837, p. 27 (no locality; coll. J. Gould).

Mimus parvulus, GRAY, Zool. Voy. Beagle, III, Birds, 1841, p. 63, pl. XVIII (Albemarle Island, Galapagos Archipelago).—BONAPARTE, Consp. Av., I, 1850, p. 277.—SCLATER, Proc. Zool. Soc., 1859, p. 345.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 127.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 3.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 472.—SHARPE, Proc. Zool. Soc., 1877, p. 65; Cat. Birds Brit. Mus., VI, 1881, p. 350.

Nesomimus parvulus, RIDGWAY, Proc. U. S. Nat. Mus., XII, 1890, p. 104.

Specific characters.—Similar to *N. melanotis* (Gould), but considerably smaller, bill less curved, sides of head less dark, and general coloration of upper parts paler; in worn breeding plumage a distinct brownish gray shade across the upper breast, not noticeable in *N. melanotis*.

Range.—Galapagos Archipelago: Albemarle Island (Darwin, Townsend, Baur and Adams).

Adult.[1]—"The vertex, the nape of the neck, and the tail intensely black, with the tips of the tail-feathers marked with white; the wings brown with the secondaries and coverts tipped with white marks, giving the appearance of two transverse bands; the lores and the feathers of the ears black; the throat, the sides of the neck, breast, and the abdomen white; the flanks marked longitudinally with brown."[2]

Six adult examples in fresh plumage in Messrs. Baur and Adams' collection (4 from Albemarle, 2 from East Albemarle) show that the supposed more grayish breast of *N. parvulus*, to which I have called attention,[3] is a character which can not be relied on in all conditions of

[1] In the absence of any adult specimen in good plumage, I am obliged to quote Gould's description. Dr. Baur's collection contained six examples in fresh plumage, but they were returned without a description having been taken.

[2] Gould, Zool. Voy. Beagle, III, Birds, p. 63.

[3] Proc. U. S. Nat. Mus., XII, pp. 102, 103.

plumage. In fact, when examining Dr. Baur's specimens and comparing them with examples of *N. melanotis* in corresponding condition, the smaller size, especially of the bill, of *N. parvulus* seemed to be the only positively distinctive character, apart from a general lighter coloration of the upper parts and sides of the head.

The two adults in the National Museum collection measure as follows: Wing, 4.30–4.35; tail, 4.05–4.35; exposed culmen, 0.75; tarsus, 1.45; middle toe, 0.81.

A young bird, in first plumage, I can distinguish from the young of *N. melanotis* only by its smaller and straighter bill.

Measurements of Nesomimus parvulus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
115972	U. S.	Male adult.	Albemarle Island ..	Apr. 10, 1888	4.20	4.05	0.76	1.47	0.80
115973	U. S.	....do	.....do.....	....do	4.40	4.38	.79	1.45	.80
			Average.....	.....	4.30	4.22	.78	1.46	.80

NESOMIMUS BAURI, Ridgway.

(Plate LVI, fig. 4.)

Nesomimus bauri, RIDGWAY, Proc. U. S. Nat. Mus., XVII (No. 1007, Nov. 15, 1894), p. 357 (Tower Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *N. personatus*, Ridgway, of Abingdon Island, but much lighter colored above. Dimensions averaging less, and flanks more narrowly streaked with dusky. Wing, 4.30–4.45; tail, 3.95–4.30; exposed culmen, 0.95–1; bill from rictus, 1.25–1.27; tarsus, 1.25–1.35; middle toe, 0.78–0.85. (Type in Dr. Baur's collection, September 2, 1891.)

Range.—Galapagos Archipelago: Tower Island (Baur and Adams).

In coloration of the upper parts this form resembles *N. melanotis* much more than *N. personatus;* otherwise, however, it is easily distinguished, the bill being much larger (sometimes quite as large as in smaller billed examples of *N. personatus*), the light-colored tips to middle wing-coverts much wider, white terminal spots of rectrices smaller and differently shaped, and dusky streaks much narrower.

Three specimens are in Dr. Baur's collection.

NESOMIMUS BINDLOEI, Ridgway.

Nesomimus bindloei, RIDGWAY, Proc. U. S. Nat. Mus., XVII, (No. 1007, Nov. 15, 1894), p. 358 (Bindloe Island, Galapagos; collection of Dr. G. Baur).

Specific characters.—Similar to *N. bauri*, Ridgway, but smaller and with proportionally longer tarsus; ear-coverts solidly black, tips to lesser wing-coverts paler (usually nearly white on posterior row), and

white on rectrices more extended. Wing, 3.85–4.20; tail, 3.50–3.90; exposed culmen, 0.83–0.91; bill from rictus, 1.15–1.20; tarsus, 1.32–1.39; middle toe, 0.75–0.81. (Type in Dr. Baur's collection.)

Range.—Galapagos Archipelago: Bindloe Island (Baur and Adams.)

Five specimens, all separable from *N. bauri* by the above-mentioned characters.

Family MNIOTILTIDÆ.

Genus DENDROICA, Gray.

Dendroica, GRAY, List Gen. B. App., III, 1842, p. 8. Type, *Motacilla coronata*, Linnæus.

Range.—North and Middle America, and extreme northern part of South America; Galapagos Archipelago (one species only, closely related to West Indian forms).

According to Dr. Baur, the Galapagoan species, *D. aureola* (Gould), occurs on all the islands of the group.

DENDROICA AUREOLA (Gould).

Sylvicola aureola, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 86, pl. XXVIII (Galapagos Archipelago).—BONAPARTE, Consp. Av., I, 1850, p. 309.

Dendroica aureola, CASSIN, Proc. Acad. Nat. Sci. Phila., 1860, p. 192.—BAIRD, Review, I, 1864, p. 194.—BAIRD, BREWER, and RIDGWAY, Hist. N. Amer. Birds, I, 1874, p. 217.—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 105, 119, 121–126 (Indefatigable, Charles, James, and Chatham islands).—TOWNSEND, Bull. Mus. Comp. Zool., XXVII, No. 3, 1895, p. 122 (Cocos Island).

Dendræca aureola, SCLATER and SALVIN, Proc. Zool. Soc. 1870, p. 323 (Indefatigable, Bindloe, and Abingdon islands); Nom. Av. Neotr., 1873, p. 9.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 473 (Indefatigable, Bindloe, and Abingdon islands); Proc. Zool. Soc., 1883, p. 420 (Charles Island).—SHARPE, Proc. Zool. Soc., 1877, p. 66 (Charles Island); Cat. Birds Brit. Mus., X, 1885, p. 282 (Indefatigable, Charles, and Abingdon islands; Gorgona Island, Panama Bay; Ecuador; Peru).—TACZANOWSKI, Orn. du Pérou, I, 1884, p. 467 (Sta. Lucia and Tumbez, w. Peru).

Dendroica petechia, L., var., SUNDEVALL, Proc. Zool. Soc. 1871, p. 124 (Chatham, Charles, and James islands).

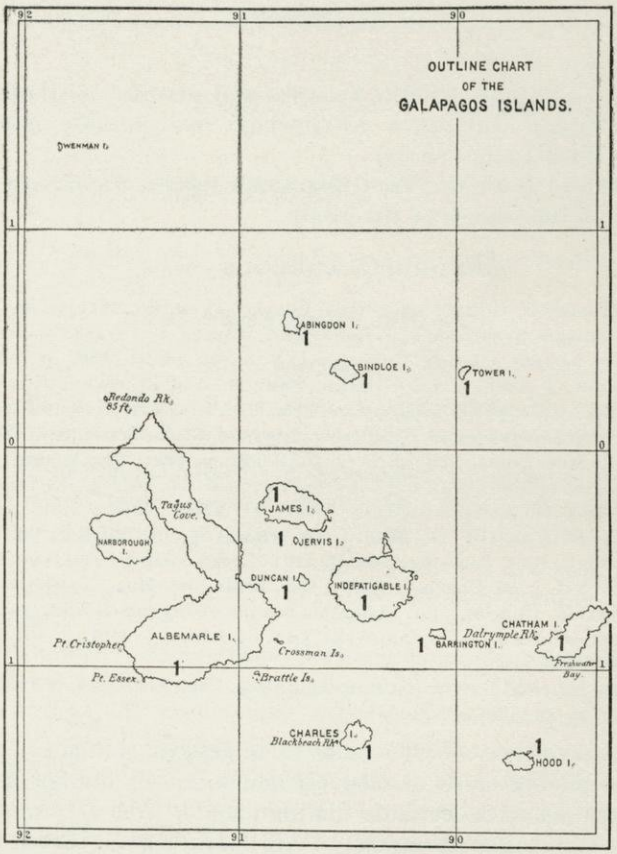
Specific characters.—Very similar to *D. petechia* (Linnæus), but adult male with pileum more extensively and intensely orange-rufous. In other stages not with certainty distinguishable from *D. petechia* (?).

Range.—Galapagos Archipelago: Albemarle Island (Habel, Baur and Adams); Duncan Island (Baur and Adams); Charles Island (Darwin ?, Kinberg, Cookson, *Albatross*); Hood Island (Habel, Baur and Adams); Chatham Island (Darwin ?, Kinberg, Jones, *Albatross*, Baur and Adams); Barrington Island (Baur and Adams); Indefatigable Island, (Habel, *Albatross*, Baur and Adams); Jervis Island (Baur and Adams); James Island (Darwin ?, Kinberg, *Albatross*, Baur and Adams); Tower Island (Baur and Adams); Bindloe Island (Darwin ?, Habel); Abingdon Island (Habel). Cocos Island (Townsend). Gorgona Island, Bay of

Panama (Kellett and Wood). Western Ecuador: Guayaquil (Baur and Adams). Western Peru: Santa Lucia (Stolzmann); Tumbez (Raimondi).

Adult male.—No. 81788, U.S.N.M.; Abingdon Island, Galapagos, April, 1879, Dr. A. Habel. Pileum light chestnut, the feathers clear lemon yellow basally; rest of upper parts yellowish olive green, paler and more grayish on rump and upper tail-coverts; wing-coverts (except lesser) and remiges dusky blackish, the middle and greater coverts and

ASCERTAINED RANGE OF THE GENUS DENDROICA, GRAY, IN THE GALAPAGOS ARCHIPELAGO.



1. *Dendroica aureola* (Gould).

tertials broadly margined with canary yellow, the greater coverts so broadly edged with this color as almost to form a solid patch on the closed wing; secondaries and three or four outermost primaries narrowly edged with olive-yellow, the remaining primaries and primary coverts with yellowish olive-gray. Inner webs of rectrices pale canary yellow, except for terminal portion, which is dusky; the yellow on three outermost feathers occupying full width of the web, while the fourth and fifth have a stripe of dusky next the shaft (widest on fifth),

both webs of the middle pair being dusky; outer webs of all the rectrices edged with light olive-green. Whole side of head (including superciliary region) and entire under parts rich yellow, becoming paler (canary yellow) posteriorly, on under wing coverts and edges (broadly) of inner webs of remiges; chest and sides of breast marked with broad streaks (more or less cuneate or sagittate anteriorly) of rather light orange-chestnut, the sides and flanks with still narrower and paler streaks of the same. Bill blackish (in dried skin) with paler tomia; legs and feet brownish.[1] Length (skin), 4.70; wing, 2.55; tail (much worn), 2; exposed culmen, 0.48; tarsus, 0.85; middle toe, 0.48.

Adult female.—No. 125901, U.S.N.M.; Chatham Island, March 30, 1891, C. H. Townsend. Altogether duller colored than the adult male. Above plain olive-green, becoming more yellowish on forehead; wings and tail as in adult male, but dusky color not so dark, and yellow edgings, etc., rather less sharply contrasted; superciliary stripe (wider and clearer in color on sides of forehead) and entire under parts clear yellow, rather less intense than in adult male, the under parts without trace of orange-chestnut streaks. Length (skin), 4.90; wing, 2.38; tail, 1.80; exposed culmen, 0.42; tarsus, 0.80; middle toe, 0.45.

Young (male?).—No. 115904, U.S.N.M.; Charles Island, April 8, 1888; C. H. Townsend. Pileum and hind neck dull gray, the crown strongly tinged with olive-green; rest of upper parts grayish olive-green; wings and tail as in adult male, but yellow edgings paler, on terminal half or more of secondaries and ends of primaries passing into dull buffy whitish; under parts dull buffy white, tinged with olive-gray on sides and flanks and with pale yellow on anal region and under tail-coverts.

I am unable to appreciate any constant differences between specimens from the several islands. Immature birds exhibit every intermediate condition of plumage between the earliest stage, with dull white under parts and ashy gray hind neck and the full adult dress, as described above.

Although said to occur on the coast of Ecuador and Peru, I have not seen a specimen from any part of the mainland. Two adult males collected on Cocos Island by Mr. Townsend appear to be quite identical with Galapagos examples.

[1] "Legs flesh color, yellow behind; soles of feet yellow; bill dark brown above, bluish olive below." (Adams, MS.) Unfortunately it is not stated whether the specimen from which the notes were taken was an adult male or otherwise.

Measurements of Dendroica aureola.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
77759	U. S.	Adult male.	Abingdon Island...	.....	2.67	2.02	0.48	0.84	0.55
81788	U. S.	.....do	.... do.....	Apr. —, ——	2.60	1.98	.48	.85	.49
			Average.....	.....	2.64	2.00	.48	.85	.52
115993	U. S.	.....do	James Island.....	Apr. 11, 1888	2.68	1.95	.50	.88	.50
77760	U. S.	.....do	Indefatigable Island	.....	2.70	2.05	.48	.88	.52
81789	U. S.	.....do	.....do.....	Oct. —, ——	2.60	2.00	.47	.87	.50
			Average	.....	2.65	2.03	.48	.88	.51
125904	U. S.	.....do	Duncan Island.....	Apr. 2, 1891	2.53	1.93	.48	.88	.51
115901	U. S.	.....do	Charles Island	Apr. 8, 1888	.....	2.08	.48	.83	.49
125896	U. S.	.....do	.....do.....	Apr. 1, 1891	2.60	1.92	.48	.83	.50
			Average	.....	2.60	2.00	.48	.83	.50
115935	U. S.	.....do	Chatham Island....	Apr 4, 1888	2.68	2.00	.48	.83	.....
125898	U. S.	.....do	.....do.....	Mar. 25, 1891	2.53	1.92	.42	.81	.50
125900	U. S.	.....do	.....do.....	.....do	2.60	2.01	.46	.80	.50
			Average	.....	2.60	1.98	.45	.81	.50
131678	U. S.	.....do	Cocos Island	Feb. 28, 1891	2.67	2.08	.45	.83	.50
131679	U. S.	.....do	.....do.....	.....do	2.53	1.95	.47	.82	.50
			Average	.....	2.60	2.01	.46	.83	.50
115902	U. S.	Adult female	Charles Island.....	Apr. 8, 1888	2.59	1.97	.47	.....	.....
125901	U. S.	.....do	Chatham Island....	Mar. 30, 1891	2.45	1.85	.45	.80	.48
135650	U. S.	.....do	.....do.....	Apr. 4, 1891	2.48	1.88	.45	.81	.....
			Average	.....	2.51	1.90	.46	.81	.48

Genus CERTHIDEA, Gould.

Certhidea, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 7. Type, *C. olivacea*, Gould.

Generic characters.—Bill rather small (exposed culmen less than two-thirds the tarsus, not longer than middle toe without claw, usually shorter), pointed, deeper than broad at base; culmen distinctly ridged, nearly or quite straight for basal half (more or less), the terminal portion very slightly curved and the extreme base sometimes slightly convex; gonys straight or very slightly convex, shorter than distance from nostril to tip of maxilla; maxillary tomium with an indistinct notch near tip (sometimes obvious only by very close inspection), its basal portion gradually curved downward from a point beneath or slightly anterior to nostril; nostrils exposed, rather large, horizontally oval, surrounded superiorly and posteriorly by membrane; rictal bristles distinct. Wing rather short (less than three times tarsus), rounded (second to fifth quills longest, first not longer than eighth), the primaries exceeding shortest secondaries by less than length of culmen. Tail short (more than two-thirds the wing, less than twice tarsus), rounded. Tarsi long and slender, about twice exposed culmen, with scutellæ indistinct on outer side; middle toe, with claw, decidedly shorter than tarsus; lateral claws reaching about to base of middle claw; hind toe about as long as lateral toes, but very much stouter,

its claw decidedly shorter than the digit. Colors, plain brownish, lighter below, with or without tawny-buff on throat or light wing-bars.

Notwithstanding the close general resemblance of the species of this genus to the females of certain Coerebidæ of the genus *Dacnis*, I have long been convinced that *Certhidea* belonged to the Mniotiltidæ rather than the Coerebidæ, where it had been placed by Messrs. Sclater and Salvin. This view of its relationships has been confirmed by an examination of its anatomical structure, made at my suggestion by Mr. F. A. Lucas It is but fair to question, however, whether *Dacnis* itself, if examined in the same way, would be found to agree in certain structural characters with *Coereba*, *Arbelorhina*, and *Glossiptila*, the typical Coerebine forms with which Mr. Lucas' comparison of *Certhidea* was made.

Range.—Peculiar to the Galapagos Archipelago, where absent, apparently, only from Charles and Narborough Islands. (See map.)

Owing to their extremely plain coloration it is very difficult to construct a "key" to the species of this genus, a difficulty greatly enhanced by the circumstance that I have at the present time examples of only four of the eight forms before me, and among these but few specimens in good plumage, the extensive series belonging to Dr. Baur having some time since been returned. The following attempt, therefore, can only be regarded as provisional.

KEY TO THE SPECIES OF CERTHIDEA.

a^1. No whitish wing bars.

b^1. Adult males with superciliary stripe and throat ochraceous-buff or tawny; bill never (?) blackish.

c^1. Adult male with throat and superciliary stripe tawny or tawny ochraceous, remaining under parts dull light buffy. (James Island.)
1. *C. olivacea* (p. 498).

c^2. Adult male with throat and superciliary stripe ochraceous-buff, remaining under parts pale buff-yellow. (Indefatigable Island.)
2. *C. salvini* (p. 500).

b^2. Adult males without ochraceous-buff or tawny throat, etc.

c^1. Adults with chin like rest of under parts, or paler, and under wing-coverts whitish.

d^1. Bill never (?) black. (Albemarle Island) ..... 3. *C. albemarlei* (p. 500).

d^2. Bill black or blackish, at least in some breeding adults.

e^1. Bill larger (exposed culmen 0.40—0.45); upper parts distinctly olivaceous, lower parts strongly tinged with olive-yellowish.

f^1. Under parts distinctly buff yellowish, except in worn plumage. (Chatham Island) ..... 4. *C. luteola* (p. 501).

f^2. Under parts buffy grayish white or very pale yellowish olive-gray. (Abingdon and Bindloe islands) ..... 5. *C. fusca* (p. 502).

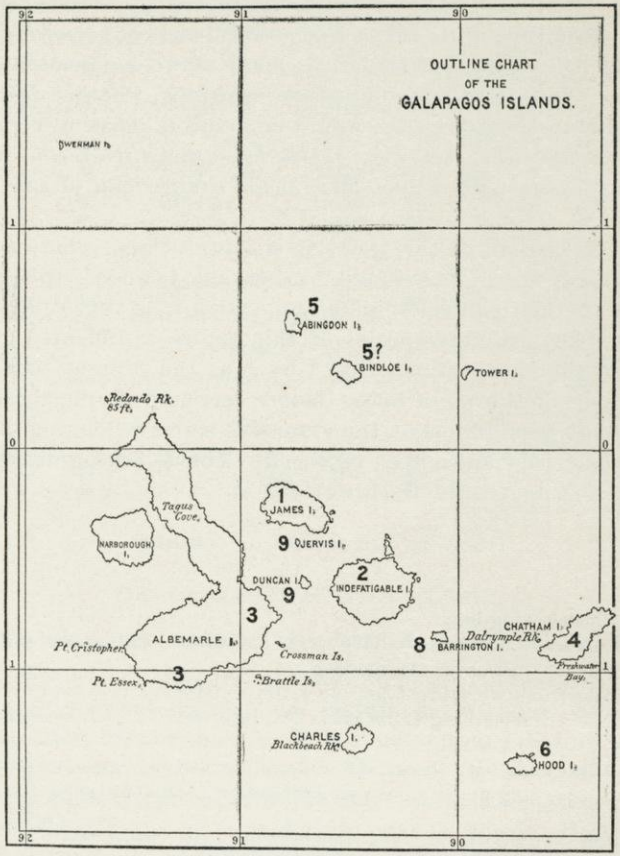
e^1. Bill smaller (exposed culmen less than 0.40); upper parts dull olive-gray, lower parts dull whitish. (Hood Island.)
6. *C. cinerascens* (p. 503).

c^2. Adult with chin and under wing-coverts buff. (Tower Island.)
7. *C. mentalis* (p. 504).

a^2. Two whitish wing bands. (Barrington Island)..... 8. *C. bifasciata* (p. 504).

Birds of this genus were collected by Messrs. Baur and Adams on Jervis and Duncan islands, but to what species they belong has not been determined, since the specimens were among those lost at Guayaquil.

ASCERTAINED RANGE OF THE GENUS CERTHIDEA, GOULD.



1. *Certhidea olivacea*, Gould.
2. *Certhidea salvini*, Ridgway.
3. *Certhidea albemarlei*, Ridgway.
4. *Certhidea luteola*, Ridgway.
5. *Certhidea fusca*, Sclater and Salvin.
6. *Certhidea cinerascens*, Ridgway.
7. *Certhidea mentalis*, Ridgway.
8. *Certhidea bifasciata*, Ridgway.
9. (Undetermined form.)

CERTHIDEA OLIVACEA, Gould.

Certhidea olivacea, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 7 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 106, pl. XLIV (part: James Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 476 (part: James Island specs. only).—SCLATER, Cat. Birds Brit. Mus., XI, 1886, p. 28 (part: James Island only).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 105, 119, 123, 125 (part: James Island).

Specific characters.—Plain light olive above, somewhat grayer on head and neck; under parts light buffy or cream-buff, shaded with light olive laterally; adult male with superciliary stripe, chin, and throat cinnamon-tawny or tawny ochraceous; mandible always (?) pale colored.

Range.—Galapagos Archipelago: James Island (Darwin, Townsend, Baur and Adams).

Adult male.—No. 556, collection Dr. G. Baur, James Island, August 17, 1891. Pileum and hind neck olive-gray; rest of upper parts light olive; wings and tail dusky, feathers edged with light olive, the middle wing-coverts broadly tipped and the greater coverts broadly edged with wood brown. A superciliary stripe, extending from bill to about 0.15 of an inch behind the eye, lower eyelid, malar region, chin, and throat cinnamon-tawny or deep tawny ochraceous; lores and suborbital region pale dull buffy; ear-coverts light buffy grayish; median portion of breast and abdomen and under tail-coverts cream-buff, many of the feathers of the breast marked with a more or less concealed, ill-defined spot of pale tawny, the shorter under tail-coverts tinged with the same color; lateral lower parts deep grayish buffy. Upper mandible dusky, lower entirely pale; "iris dark brown;" legs deep horn brown, the feet considerably darker. Length (skin), 3.60; wing, 2.15; tail, 1.40; exposed culmen, 0.32; tarsus, 0.80; middle toe, 0.48.

Young male.—No. 115995, U.S.N.M., James Island, April 11, 1894. Above similar to the adult, but plumage of looser texture, and wing-coverts margined terminally with cinnamon-buffy; beneath as in adult, except anteriorly, the chin, throat, and chest, as well as supraloral and superciliary regions, being dull buffy whitish or very pale dull grayish buffy.

It is singular that, although figured in the Zoology of the Beagle (Birds, pl. 44, lower figure[1]), the plumage of the adult male, as described above, has hitherto been undescribed, all authors, from Darwin and Gould to Salvin, ignoring it. It is so very distinct from the ordinary (immature) plumage as to give a decided impression at first of representing a different species. The specimen above described is the deepest colored of four adult males in the collection of Messrs. Baur and Adams, all the others being considerably paler, both as to the general color of the under parts and the tawny color of the throat, etc.

The two remaining specimens are also males, and were collected on the same dates as those in the tawny-throated plumage; but they are both evidently young birds, as are also the two *Albatross* specimens, collected April 11, one of the latter being a male, the other with sex undetermined.

All specimens seen of this species have the under mandible light colored.

[1] The figure is, however, very badly colored.

CERTHIDEA SALVINI, Ridgway.

Certhidea olivacea (nec GOULD), SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island, Galapagos Archipelago).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 476 (excl. syn. part: Indefatigable Island).—SCLATER, Cat. Birds Brit. Mus., XI, 1886, p. 28 (Indefatigable Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 119, 122 (Indefatigable Island).

Certhidea salvini, RIDGWAY, Proc U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 358 (Indefatigable Island; collection of Dr. G. Baur).

Specific characters.—Similar to *C. olivacea*, Gould, of James Island, but much yellower below, the upper parts more decidedly and uniformly olivaceous, and the bill larger; adult male with throat, etc., ochraceous-buff instead of tawny.

Range.—Galapagos Archipelago: Indefatigable Island (Habel, Baur and Adams).

Adult male.—Type, No. 438, collection of Dr. G. Baur, Indefatigable Island, August 6, 1891. Above brownish olive (decidedly browner than *C. olivacea*), the pileum and hind neck quite uniform with the back, etc., but the rump and upper tail-coverts brighter, more tinged with tawny olive; wings and tail dusky, the feathers edged broadly with the color of the back, inclining on greater wing-coverts to wood brown. Supraloral streak, orbits, chin, and throat, soft ochraceous-buff, the latter slightly mottled with buffy whitish; rest of under parts pale buff-yellow, deepening on sides and flanks into a more brownish tint. Upper mandible dark brown, lower brownish white; "iris dark brown;" legs dark horn brown; feet dusky. Length (skin), 3.60; wing, 2.10; tail, 1.38; exposed culmen, 0.40; tarsus, 0.81; middle toe, 0.48.

Adult female.—No. 77757, U.S.N.M., Indefatigable Island, August 30, 1868; Dr. A. Habel. Similar to the adult male, as described above, but supraloral streak, orbits, chin, and throat pale dull grayish buffy, like general color of under parts, only paler and duller. Wing, 2.10; tail, 1.40; tarsus, 0.79; middle toe, 0.50 (bill broken).

Females and immature males are much more olivaceous above than those of *C. olivacea*, and the under parts are conspicuously more yellowish.

All of the seven examples, two of which are in the United States National Museum collection, have the under mandible pale brown or whitish.

CERTHIDEA ALBEMARLEI, Ridgway.

Certhidea albemarlei, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 360 (Albemarle Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *C. olivacea*, Gould, of James and Jervis islands, but under parts nearly clear pale buff, and tips of middle and greater wing-coverts deeper rusty.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams).

Adult?.—Type, No. 595, collection Dr. G. Baur, Albemarle Island, July 21, 1891. Above uniform dull grayish brown, slightly tinged with olive; wings and tail dusky, the feathers broadly edged with the color of the back; middle and greater wing-coverts rather broadly tipped with cinnamon; under parts cream-buff, paler on belly, more brownish on sides and flanks. Upper mandible light brown, darker on culmen; lower mandible brownish white; tarsi pale horn color, toes somewhat darker. Wing, 2.05; tail, 1.45; exposed culmen, 0.40; tarsus, 0.83.

Another specimen from Cowley Bay, East Albemarle (August 10), is quite like the one described above.

CERTHIDEA LUTEOLA, Ridgway.

Certhidea olivacea (part), GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 106 (Chatham Island, Galapagos Archipelago).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 476 (part: Chatham Island).—SCLATER, Cat. Birds Brit. Mus., XI, 1886, p. 28 (Chatham Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 105 (part), 121 (Chatham Island).

Certhidea luteola, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 360 (Chatham Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Most like *C. olivacea*, Gould, of James and Jervis islands, but much brighter olivaceous above and (except in very abraded plumage) distinctly buff-yellowish beneath.

Range.—Galapagos Archipelago: Chatham Island (Darwin, Townsend, Baur and Adams).

Adult male.—Type, No. 56, collection of Dr. G. Baur, Chatham Island, June 17, 1891. Above uniform bright olive or buffy olive; wings and tail dusky, feathers broadly edged with the color of the back, the tips of the middle and greater wing-coverts (rather broadly) pale olive-buff, producing two indistinct bands across the wing. Superciliary streak extending from nostrils to above posterior angle of eye, eyelids, and entire under parts light buff yellowish, deepest on throat, elsewhere tinged with olive, especially on sides and flanks; under wing-coverts and under tail-coverts pale yellowish buff. Bill wholly deep black; "iris brown;" legs and feet dark brown. Wing, 2.13; tail, 1.52; exposed culmen, 0.40; tarsus, 0.82; middle toe, 0.45.

Young male.—No. 115940, U.S.N.M., "high hills," Chatham Island, April 5, 1888, C. H. Townsend. Above deep olive-brown, much darker on pileum (approaching sooty on forehead), more fulvescent on rump and upper tail-coverts, many of the feathers of top of head, hind neck, and back showing very indistinct tips of dusky, producing a very faintly mottled appearance; greater wing-coverts conspicuously edged and tipped with bright tawny; secondaries edged with tawny olive. Sides of head and neck, throat, and chest nearly uniform dull light grayish brown, mixed with pale dull buffy, the feathers dusky gray basally; sides and flanks similar but browner; median portion of under

parts, posterior to chest, dull pale buffy, nearly white on lower belly and anal region.

There are seven specimens of this very distinct form in Dr. Baur's collection, and six in the National Museum collection. None of the latter are in perfect plumage, however, and I have accordingly been obliged to select one of Dr. Baur's specimens as the type.

Two of Dr. Baur's specimens (both adult males, obtained June 17 and 18, while "in full song") and one of the United States National Museum specimens (obtained March 30, and in greatly worn plumage) have the bill entirely deep black. All the rest have the under mandible pale brownish, the upper deep brown or dusky. Among the latter are apparently adult birds of both sexes, obtained April 5 and June 16–18; but they may be young birds which have just assumed the adult plumage.

Measurements of Certhidea luteola.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
115939	U. S.	Adult	Chatham Island	Apr. 5, 1888	2.08	.....	.....	0.83	0.48
125008	U. S.	Adult male	do	Mar. 30, 1891	2.06	1.40	0.43	.81	.48
135654	U. S.	Adult	do	Apr. 4, 1888	2.05	1.48	.40	.81	.48
135655	U. S.	do	do	do	2.06	1.43	.41	.85	.48
			Average		2.06	1.44	.41	.82	.48

CERTHIDEA FUSCA, Sclater and Salvin.

Certhidea fusca, SCLATER and SALVIN, Proc. Zool. Soc., 1870, pp. 323, 324 (Abingdon and Bindloe islands, Galapagos Archipelago); Nom. Av. Neotr., 1873, p. 16.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 477.—SCLATER, Cat. Birds Brit. Mus., XI, 1886, p. 28.—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 105, 119, 123, 124, 126 (Abingdon Island).

Specific characters.—Similar to *C. olivacea*, Gould, but darker and less olivaceous, the under parts buffy grayish white or very pale yellowish olive-gray; bill more dusky (wholly black in adult male); adult male without tawny or ochraceous-buff on throat or superciliary region.

Range.—Galapagos Archipelago: Abingdon Island (Habel, Townsend; Bindloe Island, Habel).

Adult male.—No 116100, U.S.N.M., Abingdon Island, April 16, 1888, C. H. Townsend. Above uniform grayish olive, the wing edgings similar but rather paler on tips of greater and middle coverts; supraloral streak, orbits, and lower parts generally dull pale grayish buffy (the buff clearer and more pronounced on throat), deepening on sides and flanks into buffy olive-grayish and fading on belly and under-tail coverts into buffy whitish. Bill brownish black, rather paler on basal portion of mandible; tarsi dark horn color, toes darker. Length (skin), 3.95; wing, 2; tail, 1.40; exposed culmen, 0.40; tarsus, 0.80; middle toe, 0.45.

Adult female?.—No. 116102, U.S.N.M.; same locality and collector, April 16, 1888. Similar to the specimen described above, but slightly paler beneath and on sides of head, with throat less tinged with buffy; basal half of mandible and maxillary tomium horn brown. Length (skin), 4.05; wing, 2.02; tail, 1.42; exposed culmen, 0.42; tarsus, 0.80; middle toe, 0.47.

Another adult male, No. 116101, U.S.N.M., obtained April 16, has the under mandible distinctly light colored, except at tip, thus showing the color of the bill to be an inconstant feature in this as well as in some other species of the genus.

Young.—No. 116103, U.S.N.M., Abingdon Island, April 16, 1888, C. H. Townsend. Above similar to adult, but rather browner, and feathers, especially on back, hind neck, and pileum, showing in certain lights very indistinct narrow terminal bars of dusky; beneath much as in adult, but sides of head and neck, throat, and chest more grayish; sides and flanks faintly mottled with light grayish brown, the flanks tinged with pale buffy.

Measurements of Certhidea fusca.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
116100	U. S.	Adult male	Abingdon Island	Apr. 16, 1888	2.00	1.42	0.45	0.82	0.48
116101	U. S.	do	do	do	.....	.....	.42	.80	.45
116102	U. S.	Adult female?	do	do	2.06	1.42	.45	.80	.45
116105	U. S.	Adult male	do	do	2.05	1.30	.42	.80	.45
135683	U. S.	Adult	do	do	.....	1.45	.....	.....	.....
			Average		2.04	1.40	.44	.80	.46

CERTHIDEA CINERASCENS, Ridgway.

Certhidea cinerascens, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, pp. 105, 119, 127 (Hood Island, Galapagos Archipelago; collection of U. S. Nat. Mus.).

Certhidea olivascens (lapsus penna), RIDGWAY, Proc. U. S. Nat. Mus., XII, 1890, p. 124 (Hood Island).

Specific characters.—Similar to *C. fusca*, Sclater and Salvin, of Abingdon Island, but much grayer above and whiter beneath, and bill smaller.

Range.—Galapagos Archipelago: Hood Island (Townsend, Baur and Adams).

Adult male.—Type, No. 116069, Hood Island, Galapagos, April 7, 1888, U. S. S. *Albatross*. Above plain dull brownish gray, beneath wholly dull grayish white, faintly tinged with buffy, especially along sides. Bill black, basal half of lower mandible horn-color; legs and feet deep black. Length (skin), 3.85; wing, 2; tail, 1.40; exposed culmen, 0.37; bill from rictus, 0.45; tarsus, 0.73; middle toe, 0.43.

CERTHIDEA MENTALIS, Ridgway.

Certhidea mentalis, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 359 (Tower Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *C. fusca*, Sclater and Salvin, of Abingdon Island, but rather smaller, color darker and less olivaceous, the under parts dull light olive-grayish, becoming pale buffy on chin and under wing-coverts.

Range.—Galapagos Archipelago: Tower Island (Baur and Adams).

Adult.—Type, No. 594, collection of Dr. G. Baur, Tower Island, September 2, 1891. Above uniform deep grayish olive; chin, throat, and under wing-coverts pale buff, deepest on chin, that of throat changing gradually on chest to buffy gray, which covers whole chest, upper breast, sides, and flanks; belly dull whitish; under tail coverts buffy white. An indistinct whitish supraloral streak. Wing, 2.05; tail, 1.58; exposed culmen, 0.40; tarsus, 0.80.

There are five specimens in Dr. Baur's collection, one of which has the under mandible apparently black, one dark brown, the other three brownish white.

CERTHIDEA BIFASCIATA, Ridgway.

Certhidea bifasciata, RIDGWAY, Proc. U. S. Nat. Mus. XVII, No. 1007, Nov. 15, 1894, p. 359 Barrington Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Most like *C. cinerascens*, Ridgway, of Hood Island, but still whiter (entirely almost pure white) beneath, and wing with two broad whitish bands across tips of greater and middle coverts.

Range.—Galapagos Archipelago: Barrington Island (Baur and Adams).

Adult.—Type, No. 593, collection of Dr. G. Baur, Barrington Island, July 9, 1891. Above brownish gray, becoming very much paler on the rump; wings and tail dusky, the feathers broadly edged with grayish brown; middle wing-coverts broadly tipped with pale dull buffy, and greater coverts with dull white, producing two conspicuous bands across the wing. Lores, orbits, cheeks, and entire under parts uniform dull white. Upper mandible dark brown, edged with whitish; under mandible whitish; legs and feet brownish black. Length (skin), 3.40; wing, 2; tail, 1.40; exposed culmen, 0.40; tarsus, 0.78; middle toe, 0.48.

Three specimens from Barrington Island agree in the above characters.

Family HIRUNDINIDÆ.

Genus PROGNE, Boie.

Progne, BOIE, Isis, 1826, p. 971. Type, *Hirundo purpurea*, Linnæus, = *H. subis*, Linnæus.

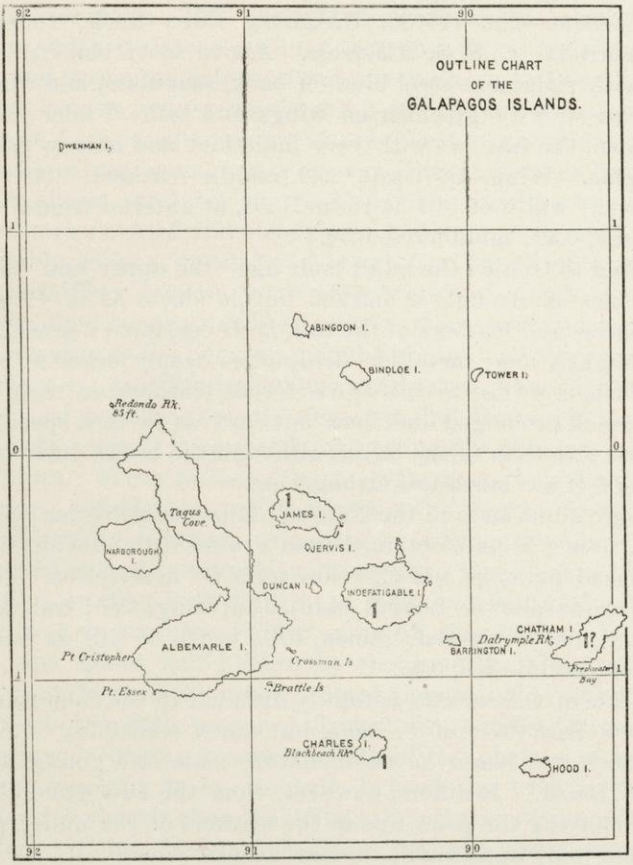
Range.—The whole of temperate and tropical America. Galapagos Archipelago (one peculiar species).

PROGNE MODESTA (Néboux).

Hirundo concolor (nec SYKES, 1832), GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 22 (Galapagos Archipelago; collection of Zool. Soc. Lond.).

Progne concolor, BONAPARTE, Consp. Av., I, 1850, p. 337.—BAIRD, Rev. Amer. Birds, I, 1864, p. 278.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 476 —SHARPE, Cat. Birds Brit. Mus., X, 1885, p. 176 ("Chatham Island"[1]).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 105 (Eden Rock, Indefatigable Island).

ASCERTAINED RANGE OF THE GENUS PROGNE, BOIE, IN GALAPAGOS ARCHIPELAGO.



1. *Progne modesta* (Néboux).

Hirundo modesta, NÉBOUX, Rev. Zool., 1840, p. 291 (Charles Island).—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (James Island).

Progne modesta,[2] GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 39, pl. v (James Island, Galapagos).—PRÉVOST et DES MURS, Voy. Vénus, 1855, p. 182.

[1] Although Dr. Sharpe gives Chatham Island as the locality of Darwin's specimen, Mr. Darwin himself says he obtained it on James Island.

[2] *Progne modestus* on plate.

Specific characters.—Similar to *P. subis* (Linnæus), but much smaller; adult male less glossy, and "having no silky white feathers on the sides of the back or sides of the breast" (Sharpe); adult female much darker than that of *P. subis*.

Range.—Galapagos Archipelago: Charles Island (Néboux); Indefatigable Island (Habel,[1] *Albatross*); James Island (Darwin, Kinberg).

Adult male.—"Similar to *P. purpurea* [i. e., *P. subis*], but smaller, and having no silky white feathers either on the sides of the back or sides of the breast. Total length, 6.5 inches; culmen, 0.45; wing, 4.95; tail, 2.7; tarsus, 0.45." (Sharpe.[2])

Adult female.—No. 116038, U.S.N.M., Eden Rock, Indefatigable Island, April 12; U. S. S. *Albatross*. Above sooty blackish, strongly glossed with violaceous steel blue on back, scapulars, and rump, more faintly glossed with greenish on wings and tail. Under parts deep sooty brown, the feathers with very indistinct and narrow paler terminal margins. Wing, 4.85; tail, 2.40 (middle feathers, 1.90); exposed culmen, 0.42; width of bill at rictus, 0.58, at anterior frontal feathers, 0.35; tarsus, 0.49; middle toe, 0.50.

According to Gould[3] the adult male has "the upper and under surface . . . not so strongly a marked purple shade as in *P. purpurea*. The primaries and feathers of the tail, however, have a greenish gloss, perhaps slightly more metallic. Tail not so deeply forked as in *P. purpurea*, which is owing to the two external feathers on each side not being so much prolonged and bent outward as in that species. Nostrils of less size than in the latter, although the beaks differ but little. Claws and feet are much less strong," etc.

The single adult male in the National Museum collection (No. 52412, U.S.N.M., James Island, obtained from Professor Sundevall) is in worn and tarnished plumage and therefore unfit for description. Its measurements are as follows: Length (skin), 6.10; wing, 4.85; tail, 2.42 (middle feathers, 1.85); exposed culmen, 0.45, width of bill at base, 0.55; tarsus, 0.48; middle toe, 0.45.

The female of this species is totally different in the coloration of the lower parts from that of *P. subis*, but much resembles "*P. elegans*," Baird,[4] which was based on an immature male and young female of *P. furcata*, Baird.[5] It differs, however, from the two examples of "*P. elegans*" in having the paler tips to the feathers of the under parts far less distinct (only appreciable, in fact, at near view).

In the volume of the British Museum catalogue cited above, Mr. Sharpe gives Chatham Island as the locality of the type specimen.

[1] Seen, but not collected, at Puerto de la Aguada; see Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 459.

[2] Cat. Birds Brit. Mus., X, 1885, p. 176.

[3] Zool. Beag., III, p. 39.

[4] Review Amer. Birds, p. 275.

[5] See Sharpe, Cat. Birds Brit. Mus., X, p. 176.

This can not be, however, since Mr. Darwin[1] mentions only James Island as its habitat. Mr. Sharpe has made similar mistakes regarding type localities of *Geospiza nebulosa* and *G. parvula*.

Family FRINGILLIDÆ.

Genus GEOSPIZA, Gould.

Geospiza, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 5. Type, *G. magnirostris*, Gould.
Cactornis, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 6. Type, *C. scandens*, Gould.

Generic characters.—Bill exceedingly variable in relative length, depth, and width, its lateral outlines and gonys nearly (sometimes quite) straight, and tip acute; culmen, from extreme base, less than two-thirds to quite as long as tarsus; depth of bill at base less than half culmen to nearly as long as culmen, but always greater than width of mandible at base; culmen more or less convex (always most so basally), but sometimes almost straight; the basal portion usually strongly ridged and sometimes elevated and strongly arched; gonys straight or almost inappreciably convex, decidedly shorter than length of maxilla from nostril; maxillary tomium without subterminal notch, first faintly (sometimes almost inappreciably) concave, then about as much convex, again reëntering at the beginning of the abrupt and very conspicuous basal deflection; mandibular tomium nearly straight or slightly convex, with its basal portion abruptly deflected, but the angle thus formed not toothed; nostrils very small, oval or nearly circular; no obvious rictal bristles. Wing rather short (a little more than 3 to nearly 3½ times tarsus), rounded (second to fourth quills longest, first not longer than fifth, usually shorter); primaries exceeding secondaries by less than exposed culmen; tertials not longer than secondaries. Tail short (decidedly more than half the wing, a little less to a little more than twice as long as tarsus), slightly rounded, the feathers broad, with rounded tips, about half hidden by the coverts. Outstretched feet reaching to or beyond tip of tail; tarsus about equal to middle toe with claw (sometimes a little longer or shorter), its scutellæ distinct; lateral toes very long, reaching to nearly middle of last phalanx of middle toe, their claws reaching to or decidedly beyond the base of the middle claw; hind toe shorter than lateral toes, its claw nearly or quite as long as the digit. Color: Fully adult males entirely black, including bill and feet, but under tail-coverts with broad whitish or buffy margins; immature males, females, and young grayish brown streaked and spotted with dusky above, beneath light colored with conspicuous dusky streaks, the bill largely light colored (except in some adult females and immature males).

Range.—Peculiar to the Galapagos Archipelago.

Few genera equal the present one in the extreme modifications in the form of the bill, which in some species (*magnirostris* and *strenua*) is

[1] Zoology of the Beagle, Birds, p. 39.

perhaps not excelled by that of any other member of the family Fringillidæ in its extreme thickness, in others (members of the so called genus *Cactornis*) slender and decurved, in others very acute, with straight outlines, and in others still elevated and arched at the base. The most extreme forms are, however, so gradually connected by intermediate types, that there seems no possibility of satisfactorily subdividing the genus into two or more sections. The extreme modifications of the bill and some of the connecting forms are shown in the outline illustrations on Plate LVII.

The reduction of *Cactornis* to a synonym of *Geospiza* has already been made in my paper describing the new species of Galapagos birds in Dr. Baur's collection,[1] in which is announced "the discovery of species which absolutely bridge the previously existing gap between the so-called genera *Geospiza* and *Cactornis*, thus necessitating the suppression of one of these names (the latter, according to the rule of priority)."

Dr. Baur, who has had the advantage of studying these birds in life, disapproves of this, as the following extract from one of his letters will show:

> I should like to make a few remarks, if you will permit me, about *Cactornis* and *Geospiza*. You place the species of these two genera in one genus, *Geospiza*. I do not think that this is natural. Both have their peculiar representatives on the different islands, and if you place them together this peculiar differentiation of each is lost sight of. *Cactornis* is more slender than *Geospiza*, and has many more black individuals. I would keep the two genera apart, and would not hesitate to place *G. propinqua* in *Cactornis*.

I am quite willing to adopt Dr. Baur's views concerning the position of *G. propinqua*, which I had compared with *G. conirostris* (a true *Geospiza*); but, while admitting that it would be very convenient to recognize *Cactornis* if any definite characters could be found, I am still of the opinion that not a single character can be found which will serve to separate them. The character which comes nearest to doing so is, apparently, the relative width of the mandible between the bases of the rami to the length of the gonys, which is very much less in typical "*Cactornis*" than in true *Geospiza*. This greater compression of the bill even serves to trenchantly separate "*Cactornis*" *propinqua* from *G. conirostris*, some individuals of which are almost precisely alike in the lateral profile and measurements of the bill; but the use of this character as a generic one would necessitate the removal of *Geospiza difficilis* and *G. acutirostris*, perhaps also *G. parvula*, to *Cactornis;* and it is difficult to see how the group can be divided into two genera without one or two more being necessary; for there is certainly more difference between such species as *Geospiza magnirostris* and *G. pachyrhyncha* on the one hand and *G. fuliginosa*, *G. debilirostris*, etc., on the other, than

[1] Descriptions of Twenty-two New Species of Birds from the Galapagos Islands, Proc. U. S. Nat. Mus., XVII (advance sheets published November 15, 1894), pp. 357–370.

between "*Cactornis*" *brevirostris* and *Geospiza fratercula*, or between *C. propinqua* and *G. conirostris*. Furthermore, if this group be recognized to consist of two or more genera instead of one, then, to be consistent, *Camarhynchus* must also be divided into three genera.

A very careful consideration of all the facts in the case, as they appear to me, compels me to conclude that the safest course is to regard the species of "*Cactornis*" as simply more slender-billed *Geospizæ*, the degree of departure from the typical Geospizine bill being largely a specific character. This is a conclusion which I regret having to adopt, for I regard large genera as a nuisance, and would be glad to have the slightest excuse for keeping *Geospiza* to its old limits.

As a matter of convenience, I have separated the species into two groups, which correspond in their limits with *Cactornis* and *Geospiza* as usually recognized;[1] but how slight and unsatisfactory a basis this division rests upon may be seen by reference to the characters given in the first part of the following "key to the species."

Owing to the gradual transition from one form to another, and the almost perfect resemblance between them in coloration, I have found it impossible to construct an analytical "key" to the species after the usual plan, but have drawn up the following as an aid to their more ready identification. I am prevented from making the "key" more satisfactory by the circumstance that I have no specimens of *G. assimilis* and *G. barringtoni* for comparison with the other so-called *Cactorni*, and am therefore unable to give comparative measurements of these forms alongside of *G. fatigata* and *G. abingdoni*.

KEY TO THE SPECIES OF GEOSPIZA.

a[1]. Width of mandible at base (across chin) nearly or quite equal to, sometimes greater than, length of gonys..... Subgenus *Geospiza*.

a[2]. Width of mandible at base (across chin) much less than length of gonys. Subgenus *Cactornis*.

Subgenus GEOSPIZA.

a[1]. Depth of bill at base greater than length of maxilla from nostril.

b[1]. Bill very short and thick, its depth at base very much greater than length of maxilla from nostril.

c[1]. Gonys more than 0.50 of an inch.

d[1]. Wing 3.55–3.70, tail 2–2.10. (Charles and Chatham Islands.)
1. *G. magnirostris* (p. 512).

d[2]. Wing less than 3.50, tail less than 2.

e[1]. Depth of bill at base more than 0.80; width of mandible at base (across chin) more than 0.65. (Tower Island.)
2. *G. pachyrhyncha* (p. 516).

e[2]. Depth of bill at base less than 0.80; width of mandible at base (across chin) less than 0.65. (Abingdon, Bindloe, James, Jervis, Indefatigable, Chatham, and Charles islands.)
3. *G. strenua* (p. 514).

[1] With this difference: *Cactornis pallida*, Sclater and Salvin, I have transferred to *Camarhynchus*, to which it is certainly far more nearly related (see p. 544).

c^2. Gonys less than 0.50 of an inch. (Chatham Island; Albemarle Island?.)
4. *G. dubia* (p. 519).

b^2. Bill moderately short and thick, its depth at base little if any greater than length of maxilla from nostril.

c^1. Length of maxilla from nostril more than 0.50.

d^1. Culmen nearly straight, much exceeding 0.80 (0.85–0.95). (Hood Island.)
5. *G. conirostris* (p. 516).

d^2. Culmen decidedly convex, not exceeding 0.80 (0.78–0.80).

e^1. Larger: Wing 3.20, depth of bill at base 0.68. (James Island.)
6. *G. bauri* (p. 518).

e^2 Smaller: Wing 2.90–3.10, depth of bill at base 0.60–0.65. (Hood Island.) ..... 7. *G. media* (p. 517).

c^2. Length of maxilla from nostril less than 0.50.

d^1. Wing 2.50 or more.

e^1. Depth of bill at base not less than 0.50 (0.50–0.53). (Charles, Chatham, James, Indefatigable, Albemarle, and Bindloe islands.)
8. *G. fortis* (p. 521).

e^2. Depth of bill at base less than 0.50.

f^1. Depth of bill at base 0.40 or more. (Abingdon Island.)
9. *G. fratercula* (p. 525).

f^2. Depth of bill at base less than 0.40. (Chatham, James, Indefatigable, Duncan, Charles, Hood, Albemarle, and Abingdon islands.)
10. *G. fuliginosa* (p. 526).

d^2. Wing less than 2.50.

e^1. Bill shorter (from nostril 0.30), culmen more curved. (James, Bindloe, Abingdon, and Chatham islands.)
11. *G. parvula* (p. 529).

e^2. Bill longer (from nostril 0.40), more acute, culmen nearly straight. (Tower Island.) ..... 12. *G. acutirostris* (p. 531).

a^2. Depth of bill at base less than length of maxilla from nostril.

b^1. Maxillary tomium slightly toothed. (Charles Island; Chatham Island.)
13. *G. dentirostris* (p. 532).

b^2. Maxilliary tomium not toothed.

c^1. Culmen nearly straight, much elevated basally; wing 2.35–2.45. (Abingdon Island; Charles Island??) .... 14. *G. difficilis* (p. 532).

c^2. Culmen more convex, less elevated basally; wing 2.90. (James Island.) ..... 15. *G. debilirostris* (p. 533).

Subgenus CACTORNIS.

a^1. Depth of bill at nostril not exceeding length of gonys.

b^1. Culmen not more than 0.72. (James Island).. 16 (1). *G. scandens* (p. 534).

b^2. Culmen 0.75 or more.

c^1. Culmen not more than 0.79, basal depth of bill not more than 0.40. (Charles Island) ..... 17 (2). *G. intermedia* (p. 535).

c^2. Culmen not less than 0.79, basal depth of bill not less than 0.40.
(Bindloe Island) ..... 18 (3). *G. assimilis* (p. 537).
(Indefatigable Island) ..... 19 (4). *G. fatigata* (p. 539).
(Abingdon Island) ..... 20 (5). *G. abingdoni* (p. 540).
(Barrington Island) ..... 21 (6). *G barringtoni* (p. 541).

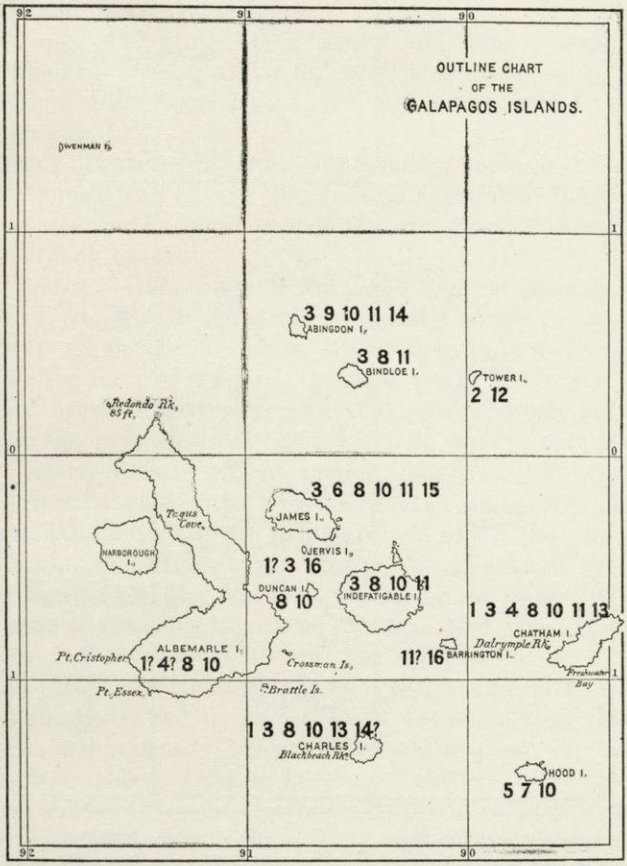
a^2. Depth of bill at nostril exceeding length of gonys.

b^1. Smaller, with more slender and pointed bill; culmen 0.70–0.72, wing 2.70–2.80. (Charles Island; Indefatigable Island?.)
22 (7). *G. brevirostris* (p. 541).

b^2. Large, with stouter and blunter bills; culmen 0.82–0.90, wing 2.95–3.15. (Tower Island) ..... 23 (8). *G. propinqua* (p. 543).

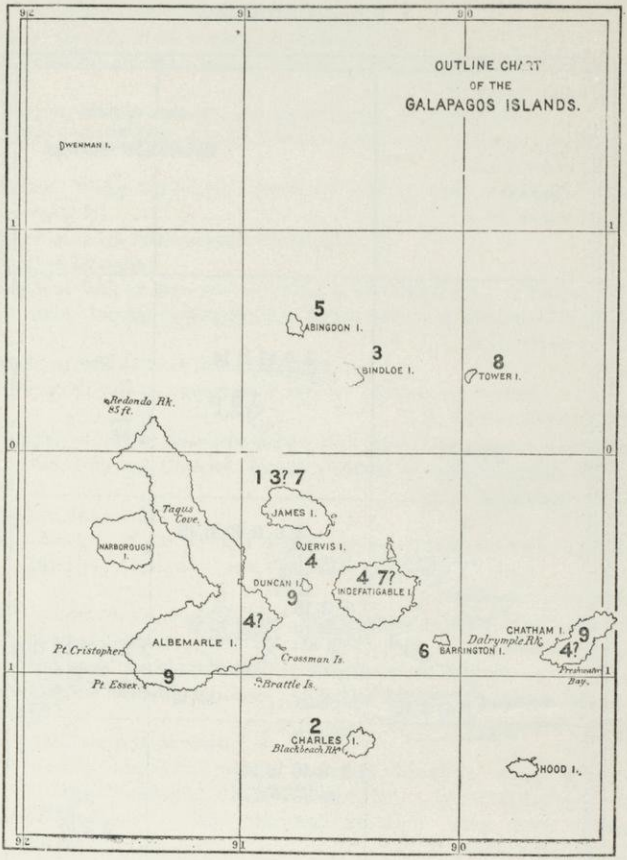
ASCERTAINED RANGE OF THE GENUS GEOSPIZA, GOULD.

a. Subgenus GEOSPIZA.



1. *Geospiza magnirostris*, Gould.
2. *Geospiza pachyrhyncha*, Ridgway.
3. *Geospiza strenua*, Gould.
4. *Geospiza dubia*, Gould.
5. *Geospiza conirostris*, Ridgway.
6. *Geospiza bauri*, Ridgway.
7. *Geospiza media*, Ridgway.
8. *Geospiza fortis*, Gould.
9. *Geospiza fratercula*, Ridgway.
10. *Geospiza fuliginosa*, Gould.
11. *Geospiza parvula*, Gould.
12. *Geospiza acutirostris*, Ridgway.
13. *Geospiza dentirostris*, Gould.
14. *Geospiza difficilis*, Sharpe.
15. *Geospiza debilirostris*, Ridgway.
16. (Undetermined form.)

b. Subgenus CACTORNIS, Gould.



1. *Geospiza scandens* (Gould).
2. *Geospiza intermedia*, Ridgway.
3. *Geospiza assimilis* (Gould).
4. *Geospiza fatigata*, Ridgway.
5. *Geospiza abingdoni* (Sclater and Salvin).
6. *Geospiza barringtoni*, Ridgway.
7. *Geospiza brevirostris*, Ridgway.
8. *Geospiza propinqua*, Ridgway.
9. (Undetermined form.)

GEOSPIZA MAGNIROSTRIS, Gould.

(Plate LVII, fig. 10.)

Geospiza magnirostris, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 5 (Galapagos Islands[1]); Zool. Voy. Beagle, III, Birds, 1841, p. 100, pl. XXXVI (Charles and Chatham islands).—BONAPARTE, Consp. Av., I, 1850, p. 542.—GRAY, Hand-l., II, 1870, p. 88.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 27.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 478 (fig. of bill).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 7 (Chatham and Charles islands).—? BAUR, Amer. Nat., XXV, 1891, p. 905 (South Albemarle and Jervis islands).

[1] According to Sharpe, the types are from Chatham Island; but in view of his erroneous statement of the type locality in the case of other species, as *G. parvula*, *G. nebulosa*, and *Progne modesta*), there is room for doubt as to this.

Specific characters.—Largest species of the genus, with largest and thickest bill. Wing, 3.55–3.70 in males; 3.25–3.45 in females; culmen, 1.

Range.—Galapagos Archipelago: ?South Albemarle Island (Baur and Adams);[1] Charles Island (Darwin); Chatham Island (Darwin); ?Jervis Island (Baur and Adams[1]).

"*Adult male.*—Entirely black above and below; quills and tail feathers blackish brown; under tail-coverts black, broadly edged and tipped with white. Total length, 5.2 inches; culmen, 1; wing, 3.55; tail, 2.1; tarsus, 1.

"In what I take to be the *seasonal plumage* a browner shade pervades the black, the feathers having edges of obscure brown; these pale edges are lighter and more conspicuous on the abdomen; under tail-coverts white with black bases.

"*Adult female.*—Different from the male; general color above brown, the feathers edged with ashy olive, especially on the rump and upper tail-coverts; wings like the back, edged with pale ashy, the greater coverts whiter on the margins; bastard wing, primary coverts, and quills dark brown edged with pale ashy, clearer whity brown on the margins of the primaries; tail-feathers pale brown, with ashy brown margins; crown of head rather darker than the back, blackish, with slightly indicated pale edges to the feathers; lores, sides of face, and ear-coverts ashy olive-brown, darker brown along the upper edge of the latter; cheeks a little darker brown; throat dark brown, streaked with ashy margins to the feathers; remainder of under surface whity brown with a slight olive tinge, the fore neck and chest streaked with dark brown centers to the feathers; the sides of the body and flanks brown, also streaked with darker brown; thighs and under tail-coverts, under wing-coverts, and axillaries whity brown, slightly tinged with olive; quills below dusky brown, ashy white along the inner edge. Total length, 6 inches; culmen, 1; wing, 3.35; tail, 2; tarsus, 1.

"None of the seven specimens in the Museum have the sexes or dates of capture marked, but the brown birds, which I take to be all females, have shorter wings than the black males. In the latter the length of the wing is from 3.55 to 3.7 inches, and in the females 3.25 to 3.45. The bill in the females varies in color, probably with season, becoming much blacker, and the increase in the color of the bill is accompanied by a blacker tone of plumage, the upper surface having the ashy margins less pronounced, while the under surface of the body is thickly mottled with black spots." (Sharpe.)

It is very singular that this powerfully built form has not been seen by any collector since Darwin's visit to the Galapagos. It seems to be near *G. strenua*, but still larger; so closely related, in fact, that Mr. Salvin has "little doubt that a large series of the skins . . . would show that thedimensions . . . graduate into those of *G. strenua*."[2]

[1] See Dr. G. Baur, Amer. Nat., XXV, 1891, p. 905. The specimens having been lost, the identification is doubtful.

[2] Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 479.

GEOSPIZA STRENUA, Gould.

Geospiza strenua, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 5 (Galapagos Islands[1]); Zool. Voy. Beagle, III, 1841, p. 100, pl. 37 (James and Chatham islands).—BONAPARTE, Consp. Av., I, 1850, p. 542.—GRAY, Hand-l., I, 1870, p. 88.—SCLATER and SALVIN, Proc. Zool. Soc. 1870, p. 323 (Indefatigable, Bindloe, and Abingdon islands); Nom. Av. Neotr., 1873, p. 27.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 124 (James Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 479 (James, Chatham, Bindloe, and Abingdon islands).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 88 (Chatham, James, Indefatigable, Abingdon, and Bindloe islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 105 (Abingdon and Charles islands).

Specific characters.—Similar to *G. magnirostris*, Gould, but smaller; wing, about 3–3.25; tail, 1.85–1.95; culmen, 0.83–0.93; depth of bill at base, 0.72–0.78; tarsus, 0.92–1.

Range.—Galapagos Archipelago: Charles Island (*Albatross*); Chatham Island (Darwin); Indefatigable Island (Habel); James Island (Darwin, Kinberg); Bindloe Island (Habel); Abingdon Island (Habel).

Male, nearly adult.—No. 77746, U.S.N.M.; Abingdon Island, Galapagos; Dr. A. Habel. Head, neck, and chest uniform brownish black; rest of upper parts duller blackish, the feathers with grayish-brown or olive-grayish margins, less distinct on back, but very conspicuous on rump, where giving the prevailing color; under parts, posterior to chest, dull blackish broken by light olive-grayish margins to the feathers, these becoming broader and more tinged with buffy posteriorly, the under tail-coverts dull grayish buffy white with a central spot of dusky. Maxilla chiefly black for basal half, terminal portion more horn colored; mandible chiefly light horn color, unsymmetrically clouded with dusky; legs and feet blackish horn color. Length (skin), 5.50; wing, 3.23; tail, 1.95; culmen, 0.93; depth of bill at base, 0.78; width of mandible at base, 0.60; tarsus, 0.95; middle toe, 0.70.

Immature male.—No. 116196, U.S.N.M.; Abingdon Island, April 16, 1888; C. H. Townsend. Similar to the above-described specimen, but uniform black confined to head (occiput excepted), the occiput, hind neck, back, scapulars, etc., grayish olive with black centers to the feathers; outermost greater wing-coverts edged with brownish buff; under parts buffy grayish white, the chest and breast spotted with blackish, other portions streaked (more broadly on sides and flanks) with the same; bill black, the mandible tinged with brown; feet horn black. Length (skin), 5.80; wing, 3.12; tail, 1.88; culmen, 0.87; depth of bill at base, 0.72; width of mandible at base, 0.59; tarsus 1; middle toe, 0.70.

Adult female.—No. 116107, U.S.N.M.; Abingdon Island, April 16, 1888; C. H. Townsend. Pileum blackish dusky, the feathers edged with olive-gray; rest of upper parts rather light olive-brown and dusky, the latter

[1] The type in the British Museum collection is said by Sharpe to be from Chatham Island.

in the form of central spots to the feathers, most conspicuous on back and scapulars; wings as in the immature male described above, but light colored margins to the feathers broader as well as paler. Sides of head pale grayish buffy indistinctly clouded with darker; chin and throat grayish dusky, indistinctly streaked with pale grayish buff; rest of under parts very pale grayish buff, the chest, upper breast, sides, and flanks broadly streaked with dusky, the under tail-coverts with broad brownish gray central spots. Maxilla and upper basal portion of mandible deep brown, darker next to head; mandible (except as described) horn-yellowish; legs and feet dusky. Length (skin), 5.65; wing, 3; tail, 1.90; culmen, 0.83; depth of bill at base, 0.72; width of mandible at base, 0.53; tarsus, 0.92; middle toe, 0.67.

The specimens examined include four from Abingdon Island, three from Bindloe, one from Charles, one from Indefatigable, four from James, and four from Jervis. None have been seen by me from Chatham Island, the alleged type locality. The specimens from James, Jervis, and Indefatigable islands, belonging to Dr. Baur's collection, have been returned without the opportunity occurring of comparing them closely with those from other islands.

I am not satisfied as to the propriety of considering the specimens from Bindloe Island referred by Mr. Salvin to this species as really the same form, but believe that they represent a local race, all of the three examples in the United States National Museum collection having the bill decidedly broader and relatively shorter, as well as lighter colored.

Measurements of Geospiza strenua.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
77746	U. S.	Adult male...	Abingdon Island.	.....	3.23	1.98	0.92	....	0.49	0.61	0.95	0.72
77747	U. S.	Immature male.	.....do	.....	3.02	1.96	.91	0.78	.49	.55	.95	.71
116106	U. S.	.....do	.....do	Apr. 16, 1888	3.14	1.92	.88	.75	.48	.57	.99	.70
			Average....	.....	3.16	1.95	.90	.77	.49	.58	.96	.71
77748	U. S.	.....do	Bindloe Island...	Feb. —, ——	3.15	1.95	.93	.80	.50	.61	1.00	.78
83781	U. S.	.....do	.....do	Nov. —, ——	3.30	2.02	.90	.80	.49	.61	1.00	.78
83782	U. S.	.....do	.....do	....do	3.00	1.91	.90	.76	.49	.58	.91	.70
			Average....	.....	3.15	1.96	.91	.78	.49	.60	.97	.75
115905	U. S.	.....do	Charles Island...	Apr. 8, 1888	3.08	1.72	.87	.78	.50	.53	.96	.70
116107	U. S.	Immature female.	Abingdon Island.	Apr. 16, 1888	3.02	1.90	.88	.76	.48	.53	.90	.65

GEOSPIZA PACHYRHYNCHA, Ridgway.

(Plate LVII, fig. 9.)

Geospiza pachyrhyncha, RIDGWAY, Proc. U. S. Nat. Mus., XVIII, No. 1067, April 23, 1896, p. 293 (Tower Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *G. strenua*, Gould, but bill much thicker and broader at the base than in that form, in this respect nearly or quite equaling *G. magnirostris*.

Range.—Galapagos Archipelago: Tower Island (Baur and Adams).

Specimens of this form having been returned to Dr. Baur, to whose collection they belong, I am not able to give a detailed description. Fortunately, however, I made a careful drawing of the bill of one of them, which shows the following measurements: Culmen, plus 0.90; depth of bill at base, 0.88; width of mandible at base, 0.70; gonys, 0.40. The bill is thus nearly if not quite as thick at the base as that of *G. magnirostris*, but it is much shorter, thus greatly increasing its relative thickness.

GEOSPIZA CONIROSTRIS, Ridgway.

(Plate LVII, fig. 8.)

Geospiza conirostris, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 106, fig. 2 (Hood Island, Galapagos Archipelago; coll. U. S. Nat. Mus.)

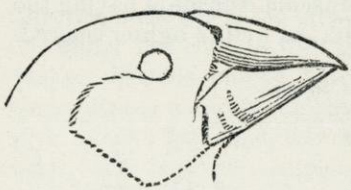


Fig. 3. *Head of Geospiza conirostris.*

Specific characters.—Similar to *G. strenua*, Gould, but bill much more elongated, much narrower, and culmen less arched.

Range.—Galapagos Archipelago: Hood Island (*Albatross;* Baur and Adams).

Adult male.—Type, No. 116070, U.S.N.M.; Hood Island, Galapagos, April 7, 1888; C. H. Townsend. Uniform black, the longer under tail-coverts margined (rather broadly) with white; bill, legs, and feet wholly black. Length (skin), 5.70; wing, 3.25; tail, 1.95; culmen, 0.95; gonys, 0.52; width of lower mandible at base, 0.51; depth of bill at base, 0.70; tarsus, 0.95; middle toe, 0.72.

Adult female.—No. 116076, U.S.N.M., same locality, etc. Much duller black than the male, or dull slate-dusky, broken on the belly, flanks, etc., by dull whitish streaks (edgings to feathers); all the under tail-coverts margined with dull whitish; under mandible dull brownish in middle portion; legs and feet dull black. Length (skin), 5.50; wing, 3.10 (quills worn at tip); tail, 1.68 (feathers very much worn at tip); culmen, 0.90; gonys, 0.50; width of under mandible at base, 0.48; depth of bill at base, 0.62; tarsus, 0.95; middle toe, 0.68.

Immature (?) male.—No. 116075, U.S.N.M, same locality, etc. Similar to the adult female as described above, but rather more sooty, and lower mandible pale brownish, with base and tip dusky. Length

(skin), 5.75; wing, 3; tail, 1.82; culmen, 0.91; gonys, 0.50; width of under mandible at base, 0.48; depth of bill at base, 0.68; tarsus, 0.95; middle toe, 0.73.

Immature (?) female.—No. 116077, U.S.N.M.; same locality, etc. Above dull sooty; anterior lower parts similar, but indistinctly streaked with pale grayish buffy, this gradually increasing posteriorly until it becomes the prevailing color and the sooty reduced to broad streaks. Length (skin), 5.70; wing, 3; tail, 1.80; culmen, 0.89; gonys, 0.50; width of lower mandible at base, 0.47; depth of bill at base, 0.62; tarsus, 0.92; middle toe, 0.67. Bill intermediate in color between that of adult female and immature male described above.

Three additional adults (two of them males, the third with sex not determined) agree minutely in form and size of bill and other measurements with the adult specimens described, one of the males being like the type in coloration while the other corresponds in plumage with the adult female described.

Measurements of Geospiza conirostris.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill at base.	Tarsus.	Middle toe.
116070	U.S.N.M.	Adult male	Hood Island, Galapagos.	Apr. 7, 1888	3.25	1.95	0.95	0.70	0.95	0.72
116071	U.S.N.M.	do	do	do	3.25	1.90	.92	.70	.93	.70
116073	U.S.N.M.	Young male	do	do	(3.08)	1.90	.85	.....	.92	.75
116075	U.S.N.M.	do	do	do	(3.00)	(1.82)	.91	.68	.95	.73
116076	U.S.N.M.	Adult female	do	do	3.10	(1.68)	.90	.62	.95	.68
116077	U.S.N.M.	Young female?	do	do	3.00	1.80	.89	.62	.92	.67
149831	U.S.N.M.	.....	do	do	2.95	1.75	.89	.67	.90	.....
149827	U.S.N.M.	.....	do	do	2.98	1.82	.93	.72	.90	.68
			Average		2.95	1.85	.90	.67	.93	.70

GEOSPIZA MEDIA, Ridgway.

(Plate LVII, fig. 13.)

Geospiza media, Ridgway, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 107, fig. 3 (Hood Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *G. conirostris*, but slightly smaller, with bill much smaller and less elongated.

Range.—Galapagos Archipelago: Hood Island (*Albatross*).

Adult male.—Type, No. 116072, U.S.N.M.; Hood Island, Galapagos, April 7, 1888; C. H. Townsend. Uniform dull black, the under tail-coverts broadly margined with buffy white; bill, legs, and feet wholly black. Length (skin), 5.50; wing, 3.10; tail, 1.90; culmen, 0.80; gonys, 0.42; width of mandible at base, 0.45; depth of bill at base, 0.62; tarsus, 0.90; middle toe, 0.65.

Immature male?.—No. 149829, U.S.N.M.; same locality, etc. Uniform sooty blackish brown, with edges of primaries (narrowly) and of

abdominal feathers and under tail-coverts buffy whitish; bill light brown, with basal half of maxilla dusky. Length (skin), 5; wing, 2.90; tail, 1.75; culmen, 0.78; gonys, 0.45; width of mandible at base, 0.45; depth of bill at base, 0.62; tarsus, 0.90; middle toe, 0.70.

Adult female?.—No. 149828, U.S.N.M.; same locality, etc. Similar to the supposed immature male, as described above, but under parts much more broadly and extensively streaked with whitish, only the chin and throat being uniform dusky. Length (skin), 4.90; wing, 2.95; tail, 1.75; culmen, 0.78; gonys, 0.42; width of mandible at base, 0.43; depth of bill at base, 0.60; tarsus, 0.92; middle toe, 0.70.

From the subjoined measurements, it will be seen, if they are compared with those of *G. conirostris*, on page 517, that *G. media* and *G. conirostris* inosculate with respect to all measurements except length of culmen, which is constantly less in the present form; but it should be stated that all the specimens of *G. conirostris* which closely approach *G. media* in measurements are either females or immature birds. It is possible that the two supposed forms really represent extremes of one variable local race; but should this prove to be the case, the difference between the extremes (as, for example, the types of the two, both adult males in perfect black plumage) is certainly remarkable.

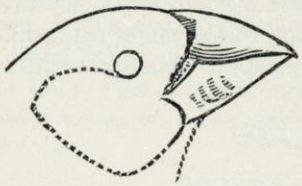


Fig. 4. *Head of Geospiza media.*

Measurements of Geospiza media.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill at base.	Tarsus.	Middle toe.
116072	U.S.N.M.	Adult male	Hood Island, Galapagos.	Apr. 7, 1888	3.05	1.90	0.80	0.62	0.90	0.65
149829	U.S.N.M.	Young male?	do	do	2.90	1.75	.78	.62	.90	.70
149830	U.S.N.M.	do	do	do	2.92	1.75	.80	.65	.91	.72
149828	U.S.N.M.	Adult female?	do	do	2.95	1.75	.78	.60	.92	.70
			Average.		2.95	1.79	.78	.62	.91	.72

GEOSPIZA BAURI, Ridgway.

(Plate LVII, fig. 12.)

Geospiza bauri, Ridgway, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 362 (James Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *G. media*, Ridgway, of Hood Island, but slightly larger, with bill much higher at base. Wing, 3.20; tail, 2; culmen, 0.80; depth of bill at base, 0.68; tarsus, 0.93.

Range.—Galapagos Archipelago: James Island (Baur and Adams). (Type, No. 562, adult male, collection Dr. G. Baur, James Island, August 7, 1891.)

One adult male, an immature male, and an immature female are in Dr. Baur's collection.

This form approaches *G. strenua* in the size and form of the beak, but the gap between them is very considerable. The bill is also proportionally much more compressed than in *G. strenua*.

GEOSPIZA DUBIA, Gould.

(Plate LVII, fig. 11.)

Geospiza dubia, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 6 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 103 (Chatham Island).—BONAPARTE, Consp. Av., I, 1850, p. 543.—GRAY, Hand-l., II, 1870, p. 88.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 480 (Chatham Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 9 (Chatham Island).

Geospiza fortis (part), GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 101 (Chatham Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 107 (Chatham Island).

Geospiza nebulosa (nec GOULD), SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (part) (Chatham Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 482 (Chatham Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 11 (part).

Specific characters.—Similar to *G. fortis*, Gould, but larger, with relatively larger and more turgid bill. Wing, 2.78–2.90; tail, 1.70–1.83; culmen, 0 65–0.75; depth of bill at base, 0.52–0.59; tarsus, 0.84–0.90.

Range.—Galapagos Archipelago: Chatham Island (Darwin, Kinberg, Townsend, Baur and Adams).

Adult male.—No. 125914, U.S.N.M.; Chatham Island, Galapagos, March 30, 1891; C. H. Townsend. Uniform deep black, the feathers abruptly clear slate-gray beneath the surface; under tail-coverts slate-gray basally, very pale brownish buff terminally and laterally (broadly), with a central, more or less cordate, spot of black. Bill wholly deep black; legs and feet grayish black. Length (skin), 5.30; wing, 2.95; tail, 1.75; culmen, 0.70; gonys, 0.38; basal width of mandible, 0.48; basal depth of bill, 0.58; tarsus, 0.85; middle toe, 0.60.

Immature male.—No. 115943, U.S.N.M.; Chatham Island, April 5, 1888; C. H. Townsend. Head and neck dull black, broken by sooty grayish brown edgings and mottlings; upper parts chiefly grayish brown, the feathers with paler edges, many of those on the back (new molt) dull black with indistinct brownish gray margins; feathers of chest and breast black with pale grayish buffy margins, producing an irregular spotted or clouded appearance; rest of under parts pale grayish buffy broadly striped with dusky, the longer under tail-coverts, however, nearly immaculate. Bill entirely black; legs and feet horn dusky. Length (skin), 4.90; wing, 2.70; tail, 1.65; culmen, 0.73; gonys, 0.38; basal width of mandible, 0.38; basal depth of bill, 0.52; tarsus, 0.86; middle toe, 0.60.

Younger (?) male.—No. 125917, U.S.N.M.; same locality, etc. Similar above to the preceding, but under parts without any "solid" black, the throat and fore neck being pale grayish buffy irregularly streaked and

clouded with dusky, and feathers of chest and breast with smaller, more longitudinal, spots of more brownish dusky. Bill wholly black and legs and feet dusky, as in the preceding. Length (skin), 4.40; wing, 2.70; tail, 1.57; culmen, 0.71; gonys, 0.38; basal width of mandible, 0.45; basal depth of bill, 0.58; tarsus, 0.90; middle toe, 0.63.

Adult female.—No. 125916, U.S.N.M.; same locality, etc. Similar to the supposed immature male last described, but pileum dusky sooty brownish with grayish brown edgings, instead of nearly uniform dusky; under parts with dusky longitudinal spots and streaks slightly less distinct; bill with terminal third of maxilla and greater part of mandible brownish; legs and feet brownish dusky. Length (skin), 4.50; wing, 2.70; tail, 1.60; culmen, 0.72; gonys, 0.40; basal width of mandible, 0.44; basal depth of bill, 0.59; tarsus, 0.90; middle toe, 0.63.

Young male?.[1]—No. 115945, U.S.N.M.; same locality, etc. Essentially like the supposed immature male (No. 115943) described above, but upper parts more tinged with olive-brown, greater wing-coverts edged with light buffy brown, and dusky color of anterior under parts much less intense, being dull grayish dusky instead of sooty black; mandible pale brownish yellow with a large squarish or trapezoidal dusky spot on each ramus.

Young female?.—No. 125920, U.S.N.M.; same locality and collector, March 30, 1891. Much lighter colored, both above and below, than the supposed young male (No. 115945), the general color of the upper parts being rather light brownish olive, the feathers of the pileum and back with dusky central spots; anterior under parts with the dull grayish dusky streaks about equal in width to the dull buffy grayish white interspaces; terminal portion of maxilla yellowish, and dusky spot on mandibular rami smaller.

A series of thirteen adult males from Chatham Island, compared with five from Charles Island, shows that the birds from the two localities can not properly be considered the same. Altogether there are in the National Museum and Dr. Baur's collections thirty-one specimens, nearly half of which are adult males in the black plumage, of the present form, and of these only three specimens (all males in the striped plumage, but with black bills) which approach very closely in size and shape of the bill to the stoutest billed examples from Charles Island.

I think there can be no question that Gould's *Geospiza dubia* was based on a young example of this form. In the large series of specimens now before me (thirty-one altogether) are several which answer in every particular to the original description except in a single measurement, that of the depth of the bill, which is given as three-eighths of an inch. None of the specimens before me have the bill less than one-half an inch in depth at the base, the average being about five-eighths,

[1] This specimen is marked "♀," but I doubt the correctness of the determination of sex.

and it is altogether probable that the "$\frac{3}{8}$" given in the original description is a misprint for "$\frac{5}{8}$".

The type of *G. dubia* having become lost, I have on the whole considered it best to identify this form as that species rather than give it a new name. In so doing I have selected an adult male as the substitute type in order to make easier the comparison of the different forms of this difficult genus.

Measurements of Geospiza dubia.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
115942	U. S.	Adult male...	Chatham Island..	Apr. 5, 1888	2.90	1.78	.73	.57	.39	.42	.85	.65
115943	U. S.	Immature male	.....do	.....do	2.70	1.65	.70	.52	.39	.39	.85	.59
115944	U. S.	.....do	.....do	.....do	2.70	1.63	.69	.52	.37	.40	.85	.60
125909	U. S.	Adult male...	.....do	Mar. 30, 1891	3.00	1.80	.76	.60	.40	.45	.91	.67
125910	U. S.	.....do	.....do	.....do	2.78	1.70	.65	.55	.38	.40	.85	.61
125911	U. S.	.....do	.....do	.....do	3.00	1.80	.75	.61	.40	.49	.91	.70
125912	U. S.	.....do	.....do	.....do	2.90	1.75	.73	.58	.40	.45	.90	.64
125914	U. S.	.....do	.....do	.....do	2.88	1.75	.70	.57	.40	.45	.87	.60
125915	U. S.	.....do	.....do	.....do	2.90	1.73	.67	.53	.33	.40	.88	.60
125917	U. S.	.....do	.....do	.....do	....	....	.70	.57	.38	.46	.90	.62
			Average....	.....	2.74	1.73	.71	.56	.38	.43	.89	.63
125916	U. S.	Adult female.	Chatham Island..	Mar. 30, 1891	....	....	.73	.59	.39	.42	.88	.63
125918	U. S.	Adult female?	.....do	.....do	2.80	1.72	.70	.53	.37	.41	.85	.60
			Average....	.....	2.80	1.72	.72	.56	.38	.42	.87	.62

GEOSPIZA FORTIS, Gould.

(Plate LVII, figs. 14, 15.)

Geospiza fortis, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 5 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 101, pl. XXXVIII (part: Charles Island).—BONAPARTE, Consp. Av., I, 1850, p. 543.—GRAY, Hand-l., II, 1870, p. 88.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (part: Indefatigable and Bindloe islands); Nom. Av. Neotr., 1873, p. 27.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 124 (Charles and James islands).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 481 (part: Charles, James, Indefatigable, and Bindloe islands).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 10 (part: James, Charles, and Bindloe islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 107 (part: Charles, James, and Indefatigable islands).

? *Geospiza nebulosa*, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 5 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 101 (Charles Island).—BONAPARTE, Consp. Av., I, 1850, p. 543.—GRAY, Hand-l., II, 1870, p. 88.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (part: Charles Island).—SCLATER and SALVIN, Nom. Av., Neotr., 1873, p. 27.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 482 (part: Charles Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 11 (part: Charles Island).

? *Geospiza albemarlei*, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1006, June 27, 1894, p. 362 (Albemarle Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *G. dubia*, Gould, of Chatham Island, but smaller, the bill especially. Wing, about 2.75–2.85; tail, 1.65–1.80; culmen, 0.62–0.68; depth of bill at base, 0.42–0.49; tarsus, 0.80–0.85.

Range.—Galapagos Archipelago: Albemarle Island (Townsend); Duncan Island (Baur and Adams); Charles Island (Darwin, Kinberg, Townsend, Baur and Adams); Indefatigable Island (Habel, *Albatross*); James Island (Kinberg, *Albatross*); Bindloe Island (Habel).

Adult male.—No. 125937, U.S.N.M.; Charles Island, Galapagos, April 1, 1891; C. H. Townsend. Uniform deep black, most intense anteriorly, tinged with dark olive-gray posteriorly, the feathers abruptly clear slate-gray beneath the surface; under tail-coverts broadly margined with buffy whitish; bill wholly deep black; legs and feet blackish brown. Length (skin), 4.80; wing, 2.82; tail, 1.75; culmen, 0.62; gonys, 0.35; basal width of mandible, 0.37; basal depth of bill, 0.48; tarsus, 0.80; middle toe, 0.62.

Immature male.—No. 125939, U.S.N.M.; same locality, etc. Above dull grayish black, the feathers indistinctly margined with olive gray, this color prevailing on rump and upper tail-coverts; beneath dull grayish white, faintly tinged with pale buffy, broadly striped with black, these black stripes or longitudinal spots broader anteriorly, much exceeding the whitish interspaces on chin, throat, and chest; bill wholly deep black; legs and feet blackish brown. Length (skin), 4.70; wing, 2.80; tail, 1.65; culmen, 0.65; gonys, 0.35; basal width of mandible, 0.37; basal depth of bill, 0.49; tarsus, 0.82; middle toe, 0.61.

Adult female.—No. 125946, U.S.N.M.; same locality, etc. Similar above to the immature male, as described above, but feathers more distinctly margined with grayish olive, the rump nearly uniformly of this color; ground-color of under parts more tinged with buffy than in immature male, and with blackish markings less coalesced on anterior portions; maxilla blackish brown, mandible pale brown, becoming blackish brown basally; legs and feet dark horn brown. Length (skin), 4.65; wing, 2.82; tail, 1.65; culmen, 0.65; gonys, 0.33; basal width of mandible, 0.37; basal depth of bill, 0.48; tarsus, 0.85; middle toe, 0.58.

Immature female.—No. 77752, U.S.N.M.; Indefatigable Island, Galapagos, August 10, 1868; Dr. A. Habel. Pileum as in adult female; rest of upper parts rather light grayish olive, the feathers of the back, etc., dusky centrally, producing a clouded appearance; rump uniform light olive or buffy olive; middle and greater wing-coverts broadly margined with light dull cinnamon or wood brown; under parts dull buffy whitish, washed with light buffy brown on sides and flanks; chin and throat clouded with grayish dusky; fore neck and chest marked with triangular longitudinal spots of the same, the breast and anterior portion of sides similarly but less distinctly marked. Bill pale cinnamon-brown passing into pale buff on under portion of mandible and into deeper brown on basal part of maxilla; legs and feet blackish brown. Length (skin), 4.50; wing, 2.85; tail, 1.80; culmen, 0.68; gonys,

0.35; basal width of mandible, 0.35; basal depth of bill, 0.42; tarsus, 0.81; middle toe, 0.58.

Fifty-six specimens of this form have been examined, of which thirty belong to the National Museum collection. The localities represented are as follows: Charles Island (15 specimens), James Island (22), Indefatigable Island (12), Albemarle Island (4), Bindloe Island (2), and Duncan Island (1).

Specimens from Albemarle Island appear to be clearly referable to this species, and agree most closely in form and size of the bill with those from James, Charles, Indefatigable, Abingdon, and Bindloe islands; but in the same locality occur others which I am unable to distinguish satisfactorily from smaller examples of the larger, heavier-billed Chatham Island bird (*G. dubia*). These I at one time separated as *G. albemarlei*, comparison having been made, through some inadvertence, with *G. dubia* and *G. media* instead of the former and *G. fortis*. The name *G. albemarlei* is therefore placed as a probable synonym of *G. fortis*, with the reservation that a larger series of specimens may show that its separation can be maintained.[1]

[1] The original description of *G. albemarlei* is as follows:

Geospiza albemarlei, Ridgway.

Specific characters.—Intermediate between *G. media*, of Hood Island, and *G. dubia*, Gould, of Chatham.

Habitat.—Albemarle Island, Galapagos.

Measurements of type.—No. 115977, U.S.N.M., immature male, Tagus Cove, Albemarle Island, April 10, C. H. Townsend. Length (skin), 5; wing, 2.80; tail, 1.85; culmen, 0.70; gonys, 0.35; width of lower mandible at base, 0.41; depth of bill at base, 0.52; tarsus, 0.85; middle toe, 0.60.

The plumage of the type specimen is about halfway between that of the young male and the perfectly adult bird, the head and neck being nearly uniform dull blackish, the feathers of the dorsal region black, broadly margined with olive, the under parts (except throat) dull buffy whitish (marked with buffy olive laterally); the entire breast and fore part of sides heavily spotted (longitudinally) with blackish.

An adult female (No. 115978, U.S.N.M., same locality, etc.) is exactly like the immature male in coloration, its measurement being as follows: Length (skin), 5; wing, 2.82; tail, 1.70; culmen, 0.75; gonys, 0.40; width of under mandible at base, 0.42; depth of bill at base, 0.55; tarsus, 0.90; middle toe, 0.65.

Another female (No. 115975, U.S.N.M., same locality, etc.), evidently not a very young bird, since its bill, like that of the two above-mentioned specimens, is hard and chiefly black in color, has the top of the head grayish olive, broadly streaked with dusky, the cheek, chin, throat, etc., very pale grayish buffy, obsoletely streaked with darker, and the breast rather indistinctly marked with dusky. Length (skin), 4.70; wing, 2.78; tail, 1.70; culmen, 0.70; gonys, 0.38; width of under mandible at base, 0.40; depth of bill at base, 0.52; tarsus, 0.90; middle toe, 0.62.

Measurements of Geospiza fortis.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
115998	U. S.	Adult male...	James Island.....	Apr. 11, 1888	2.80	1.73	.67	.52	.34	.41	.88	.65
115999	U.S	....do	.....do	.... do	2.95	1.75	.65	.52	.35	.40	.87	.60
116000	U.S.	....do	.....do	.... do	2.85	1.65	.70	.52	.37	.40	.85	.62
116001	U.S.	.....do	.... do	... do	2.80	1.62	.69	.53	.36	.41	.86	.59
116002	U.S.	.....do	.....do	.....do	2.76	1.65	.66	.48	.34	.40	.87	.63
			Average.....	.....	2.77	1.65	.67	.52	.35	.40	.87	.62
77752	U.S.	Immature male	Indefatigable Island.	Apr. —, ——	2.83	1.82	.70	.45	.36	.37	.83	.60
83783	U.S.	.....do	..... do	.... do	2.60	1.75	.71	.50	.38	.40	.85	.62
116042	U.S.	.....do	.....do	Apr. 12, 1888	2.80	1.70	.73	.53	.40	.43	.88	.62
116043	U.S.	.....do	.....do	.....do	2.70	1.65	.65	.50	.34	.38	.81	.58
			Average.....	.....	2.73	1 73	.70	.50	.37	.40	.84	.61
115976	U.S.	Adult male...	Albemarle Island.	Apr. 10, 1888	2.82	1.72	.65	.48	.35	.39	.90	.61
115977	U.S.	Immature male	.....do	.....do	2.87	1.78	.70	.55	.37	.41	.87	.63
			Average.....	.....	2.85	1.75	.68	.52	.36	.40	.88	.62
115906	U.S.	Immature male	Charles Island....	Apr. 8, 1888	2.76	1.71	.68	.49	.38	.38	.87	.65
125933	U.S.	Adult male ...	.....do	Apr. 1, 1891	2.77	1.63	.67	.52	.35	.40	.82	.60
125934	U.S.	.....do	.... do	.... do	2.83	1.72	.70	.50	.35	.40	.87	.62
125935	U.S.	.....do	.....do	.....do	2.91	1.82	.70	53	.38	.40	.85	.61
125936	U.S.	Immature male	.....do	.... do	2.85	1.70	.63	.49	.38	.39	.83	.60
125937	U.S.	Adult male ...	.....do	.....do	2.85	1.78	.66	.50	.37	.39	.83	.65
125938	U S.	.....do	.....do	.....do	2.91	1.75	.68	.53	....	.40	.88	.62
125939	U.S.	.....do	.....do	.....do	2.83	1.65	.69	.51	.35	.40	.85	.63
125942	U.S.	Immature male	.....do	.....do	2.63	1.60	.64	.50	.35	.38	.83	.62
			Average.....	.....	2.81	1.70	.67	.51	.36	.39	.85	.62
77750	U.S.	.....do	Bindloe Island....	.....	2.62	1.65	.67	.51	.38	.39	.78	.57
77751	U.S.	.....do	.....do	.....	2.63	1.55	.67	.52	.38	.39	.80	.59
			Average.....	.....	2.63	1.60	.67	.52	.38	.39	.79	.58
115907	U.S.	Immature female.	Charles Island....	Apr. 8, 1888	....	1.70	.67	.49	.35	.38	.87	.61
125940	U.S.	Adult female .	.....do	Apr. 1, 1891	2.70	1.65	.65	.47	.35	.33	.80	.55
125941	U.S.	.....do	.....do	.....do	2.65	1.69	.65	.50	.33	.38	.79	.56
125944	U.S.	.....do	.....do	.....do	2.68	1.60	.63	.49	.35	.38	.80	.60
125945	U.S.	.....do	.....do	.....do	2.63	1.64	.61	....	.32	.33	.82	.59
125946	U.S.	.....do	.....do	.....do	2.83	1.65	.69	.50	.33	.38	.85	.60
			Average.....	.....	2.70	1.64	.65	.49	.34	.36	.82	.59
115975	U. S.	.... do	Albemarle Island.	Apr. 10, 1888	2.80	1.72	.71	.52	.39	.41	.90	.66
115978	U. S.	.....do	.....do	.... do	2.82	1.70	.77	.57	.40	.42	.90	.65
129808	U.S.	.....do	.....do	.....do	2.90	1.72	.75	.53	.38	.40	.89	.63
			Average.....	.....	2.84	1.71	.74	.54	.39	.41	.90	.65
125961	U. S.	Immature female.	Duncan Island ...	Apr. 2, 1891	2.59	1.50	.62	.45	.32	.35	.81	.53

GEOSPIZA FRATERCULA, Ridgway.

(Plate LVII, fig. 16.)

Geospiza fortis (nec GOULD), SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 481 (part: Abingdon Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 107 (Abingdon Island).

Geospiza fratercula, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 363 (Abingdon Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *G. fortis*, Gould, of Charles Island, but smaller, the bill narrower and with culmen more convex. Adult males: Wing, 2.50–2.65; tail, 1.60–1.65; culmen, 0.65–0.67; basal width of mandible 0.36–0.40; depth of bill at base, 0.43–0.49; tarsus, 0.78–0.80.

Range.—Galapagos Archipelago: Abingdon Island (Habel, *Albatross*).

Adult male.—Type, No. 116110, U.S.N.M.; Abingdon Island, Galapagos, April 16, 1888; C. H. Townsend. Entirely deep black, very faintly tinged with olive posteriorly, especially on the rump, all the feathers abruptly clear slate-gray beneath the surface; bill wholly deep black; legs and feet brownish black. Length (skin), 4.65; wing, 2.68; tail, 1.72; culmen, 0.63; gonys, 0.34; basal width of mandible, 0.35; basal depth of bill, 0.42; tarsus, 0.80; middle toe, 0.53.

Immature (?) male.—No. 116109, U.S.N.M.; same locality, etc. Head, neck, and chest uniform black; rest of upper parts black, the feathers margined with olive, most broadly so on back, scapulars, rump, and upper tail-coverts; breast and sides duller black, the feathers margined with light olive-grayish; flanks grayish brown; middle of belly and anal region dull whitish, the feathers dusky beneath the surface; under tail-coverts light buff, each feather with a dusky wedge-shaped central space; bill and feet as in the fully adult male. Length (skin), 4.75; wing, 2.58; tail, 1.70; culmen, 0.65; gonys, 0.34; basal width of mandible, 0.36; basal depth of bill, 0.45; tarsus, 0.77; middle toe, 0.54.

Young male.—No. 116113, U.S.N.M.; same locality, etc. Above brownish black, the feathers margined with olive, especially on back, scapulars, rump, etc.; middle and greater wing-coverts broadly margined with dark buffy or clay color; chin and throat grayish dusky obsoletely streaked with pale buffy grayish; chest and upper breast with broad streaks of dusky and narrower ones of pale grayish buffy; rest of under parts plain grayish buffy white medially, olive grayish laterally, tinged with brownish buffy and obsoletely streaked with darker; under tail-coverts very pale buff or buffy white; bill dark brown, with the terminal and lower halves of the mandible pale yellowish; legs and feet brownish dusky.

Some other young males in first plumage differ from the one described in being darker (nearly uniform blackish brown) above, and in having the whole chin and throat "solid" dusky.

Five adult males in the United States National Museum collection from Abingdon Island agree in the above characters, by which they

may readily be distinguished from *G. fortis*, of Charles and other islands. There are four young birds in the collection, but no adult females. Mr. Salvin says that "the females from Abingdon Island are darker than those from the other two islands" (Indefatigable and Bindloe).

Measurements of Geospiza fratercula.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
116108	U. S.	Adult male	Abingdon Island	Apr. 16, 1888	2.53	1.52	.65	.44	.38	.38	.81	.55
116109	U. S.	do	do	do	2.55	1.68	.68	.48	.36	.38	.78	.55
116110	U. S.	Immature male	do	do	2.65	1.70	.65	.44	.38	.36	.80	.55
116111	U. S.	do	do	do	2.60	1.62	.68	.48	.37	.38	.79	.58
116112	U. S.	do	do	do	2.53	1.59	.67	.50	.37	.40	.80	.57
			Average		2.57	1.62	.67	.47	.37	.38	.80	.56

GEOSPIZA FULIGINOSA, Gould.

(Plate LVII, fig. 17.)

Geospiza fuliginosa, GOULD, Proc. Zool., Soc., Pt. v, 1837, p. 5 (Galapagos Islands[1]); Zool. Voy. Beagle, III, Birds, 1841, p. 101 (Chatham and James islands).—BONAPARTE, Consp. Av., I, 1850, p. 543.—GRAY, Hand-l., II, 1870, p. 88.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island); Nom. Av. Neotr., 1873, p. 27.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (Indefatigable and James islands).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 482 (Chatham, James, and Indefatigable islands).—SHARPE, Proc. Zool. Soc., 1877, p. 66 (Albemarle Island); Cat. Birds Brit. Mus., XII, 1888, p. 12 (Chatham, James, Albemarle, and Indefatigable islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 107 (Chatham, James, Indefatigable, Duncan, Charles, Hood, Albemarle, and Abingdon islands).

[*Geospiza fuligineux*, PRÉVOST et DES MURS, Voy. Vénus, Ois., 1855, p. 208.]

Specific characters.—Similar to *G. fratercula*, Ridgway, of Abingdon Island, but smaller, the bill more compressed and with straighter outlines. Wing, about 2.40–2.55; tail, 1.45–1.65; culmen, 0.49–0.55; depth of bill at base, 0.31–0.38; tarsus, 0.73–0.81. (Adult males.)

Range.—Galapagos Archipelago: Albemarle Island (Cookson, *Albatross*, Baur and Adams); Duncan Island (*Albatross*, Baur and Adams); Charles Island (Kinberg, Townsend); Hood Island (*Albatross*, Baur and Adams); Chatham Island (Darwin, Kinberg, Townsend, Baur and Adams); Indefatigable Island (Habel, *Albatross*); James Island (Darwin, Kinberg, *Albatross*, Baur and Adams); Abingdon Island (Habel, *Albatross*).

Adult male.—No. 125927, U.S.N.M.; Chatham Island, Galapagos, March 30, 1891; C. H. Townsend. Uniform deep black, most intense anteriorly, the feathers abruptly clear slate-gray beneath the surface;

[1] According to Dr. Sharpe, the type is from Chatham Island.

under tail-coverts broadly margined terminally with light brownish buff; bill entirely deep black; legs and feet dark brown. Length (skin), 4.15; wing, 2.55; tail, 1.58; culmen, 0.55; gonys, 0.30; basal width of mandible, 0.29; basal depth of bill, 0.35; tarsus, 0.75; middle toe, 0.58.

Immature male.—No. 115949, U.S.N.M.; same locality and collector, April 5, 1888. Head, neck, and chest uniform black; back, scapulars, and wings dull black, the feathers margined with grayish olive; rump and upper tail-coverts grayish olive, feathers dusky centrally; tail dusky, the feathers margined with grayish olive; under parts, posterior to chest, blackish, the feathers margined with pale grayish buffy, this color prevailing posteriorly; under tail-coverts pale buffy, each with a central sagittate mark of dusky, mostly concealed. Bill black, the terminal portion of mandible more brownish; legs and feet dusky brown. Length (skin), 4; wing, 2.50; tail, 1.52; culmen, 0.51; gonys, 0.29; basal width of maxilla, 0.26; basal depth of bill, 0.32; tarsus, 0.76; middle toe, 0.55.

Adult female.—No. 125956, U.S.N.M.; Charles Island,[1] Galapagos, April 1, 1891; C. H. Townsend. Above grayish olive, the feathers of the pileum, back, and scapulars with dusky central spots; rump and lower back uniform olive-gray; wings and tail dusky, the feathers margined with olive-gray, except outermost middle and greater wing-coverts, which are more broadly margined terminally with light buffy brown or isabella color. Under parts grayish white, faintly tinged with pale buff, everywhere, except on chin and throat, broadly streaked with dusky; maxilla black, mandible chiefly dusky brown; legs and feet dark brown. Length (skin), 4.15; wing (tips of primaries much worn), 2.50; tail, 1.50; culmen, 0.55; gonys, 0.29; basal width of maxilla, 0.27; basal depth of bill, 0.34; tarsus, 0.78; middle toe, 0.50.

Altogether 116 specimens of this bird have been examined, the localities represented and number of specimens from each being as follows: Chatham Island (42 specimens), Barrington (4), Hood (11), Charles (12), Albemarle (17), Duncan (14), Indefatigable (4), Jervis (3), James (7) and Abingdon (2).

There is the usual amount of variation in this series, but whether there is anything of local significance I am unable to determine, for the reason that the series from the different islands are so unequal in numbers, or at least in the number of adults, and also because nearly one-third of the specimens are not available for comparison, having been returned to Dr. Baur, to whose collection they belong.

Among the specimens from Chatham and Abingdon islands are some young ones which I can not decide whether they should be referred to *G. fuliginosa* or *G. parvula;* in fact, two adult males, one from each island, are doubtful, and I think it can be demonstrated that the line

[1]There is no adult male, or at least none with the sex determined, from Chatham Island in the series before me.

between the two supposed species can not be sharply drawn. There is also a young male from Chatham Island (No. 115950, U.S.N.M.), which is so much larger than other specimens that I am inclined to consider it a hybrid between *G. fuliginosa* and *G. dubia*.

The following measurements of a large series of *G. fuliginosa* are given not only to show the extent to which specimens from the several islands differ, but also for comparison with *G. parvula*, the smallest billed specimens having been selected whenever a particular island was represented by a considerable series. Unfortunately the different islands are represented so unequally that a larger number of specimens could not be selected without impairing the value of the comparison:

Measurements of Geospiza fuliginosa.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
115908	U. S.	Adult male	Charles Island	Apr. 8, 1888	2.53	1.60	.52	.37	.28	.28	.80	.53
125947	U. S.	do	do	Apr. 1, 1891	2.53	1.53	.52	.31	.28	.28	.75	.56
125948	U. S.	do	do	do	2.47	1.62	.49	.35	.25	.26	.78	.53
125949	U. S.	do	do	do	2.55	1.52	.51	.....	.28	.30	.80	.54
125950	U. S.	do	do	do	2.80	1.72	.56	.37	.30	.29	.81	.55
125951	U. S.	do	do	do	2.68	1.60	.54	.37	.30	.30	.80	.55
125952	U. S.	do	do	do	2.50	1.58	.55	.34	.29	.28	.80	.52
125953	U. S.	Immature male	do	do	2.60	1.60	.53	.37	.29	.29	.80	.55
125955	U. S.	do	do	do	2.55	1.57	.52	.33	.25	.26	.78	.51
				Average	2.58	1.57	.52	.35	.28	.28	.78	.53
115979	U. S.	Adult male	Albemarle Island	Apr. 10, 1888	2.47	1.52	.50	.43	.25	.27	.75	.52
115980	U. S.	do	do	do	2.57	1.67	.51	.35	.29	.29	.....	.53
149810	U. S.	do	do	do	2.51	1.50	.53	.35	.29	.25	.82	.58
149811	U. S.	do	do	do	2.50	1.57	.48	.32	.24	.23	.79	.55
149812	U. S.	do	do	do	2.48	1.55	.47	.32	.26	.26	.77	.50
149813	U. S.	do	do	do	2.43	1.40	.49	.33	.27	.24	.78	.52
149814	U. S.	Immature male	do	do	2.50	1.50	.49	.30	.26	.25	.78	.56
				Average	2.49	1.53	.49	.34	.26	.26	.78	.54
116004	U. S.	Adult male	James Island	Apr. 11, 1888	2.50	1.52	.50	.31	.26	.28	.75	.51
116005	U. S.	do	do	do	2.55	1.51	.51	.32	.27	.27	.78	.55
				Average	2.53	1.52	.51	.32	.27	.28	.77	.53
116044	U. S.	do	Indefatigable Island.	Apr. 12, 1888	2.48	1.52	.50	.33	.27	.28	.76	.53
116045	U. S.	do	do	do	2.52	1.52	.50	.36	.27	.27	.80	.50
				Average	2.50	1.52	.50	.35	.27	.28	.78	.52
115948	U. S.	Immature male	Chatham Island	Apr. 5, 1888	2.57	1.67	.58	.....	.....	.29	.80	.59
115949	U. S.	do	do	do	2.51	1.43	.52	.34	.29	.29	.78	.57
125921	U. S.	Adult male	do	Mar. 30, 1891	2.57	1.62	.56	.35	.30	.30	.80	.53
125923	U. S.	do	do	do	2.50	1.52	.53	.35	.28	.28	.77	.55
125924	U. S.	do	do	do	2.40	1.45	.53	.33	.28	.28	.75	.52
125925	U. S.	do	do	do	2.60	1.62	.58	.32	.30	.28	.78	.57
125926	U. S.	do	do	do	2.40	1.53	.53	.38	.29	.28	.80	.58
125927	U. S.	do	do	do	2.55	1.60	.54	.35	.30	.28	.....	.58
125928	U. S.	do	do	do	2.55	1.65	.55	.38	.30	.28	.80	.58
149809	U. S.	Immature male	do	Apr. 10, 1888	2.50	1.60	.51	.33	.28	.25	.78	.....
				Average	2.52	1.57	.54	.35	.29	.28	.78	.56
115884	U. S.	Adult male	Duncan Island	Apr. 13, 1888	2.52	1.60	.48	.38	.26	.27	.78	.55
115885	U. S.	do	do	do	2.52	1.50	.50	.35	.28	.28	.78	.55
115886	U. S.	do	do	do	2.45	1.58	.52	.33	.27	.27	.78	.55
115887	U. S.	do	do	do	2.48	1.47	.50	.33	.25	.27	.78	.57
115888	U. S.	do	do	do	2.50	1.57	.52	.35	.27	.27	.75	.53
115889	U. S.	do	do	do	2.48	1.52	.50	.33	.25	.27	.80	.53

Measurements of Geospiza fuliginosa—Continued.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basil width of mandible.	Tarsus.	Middle toe.
115890	U. S.	Adult male	Duncan Island	Apr. 13, 1888	2.48	1.55	.50	.38	.28	.28	.80	.55
125958	U. S.	do	do	do	2.45	1.49	.51	.34	.28	.26	.77	.43
125959	U. S.	Immature male	do	Apr. 2, 1891	2.40	1.49	.49	.33	.27	.27	.73	.49
125960	U. S.	do	do	do	2.40	1.40	.51	.36	.27	.27	.80	.58
			Average		2.47	1.48	.50	.35	.27	.27	.78	.53
116078	U. S.	Adult male	Hood Island	Apr. 7, 1888	2.42	1.48	.53	.34	.27	.27	.75	.60
149832	U. S.	Immature male	do	do	2.39	1.42	.51	.35	.26	.27	.75	.55
149834	U. S.	Adult male	do	do	2.48	1.60	.52	.38	.25	.28	.80	.57
149835	U. S.	Immature male	do	do	2.50	1.50	.52	.32	.28	.27	.75	....
149836	U. S.	do	do	do	2.40	1.50	.49	.32	.24	.24	....	.51
149837	U. S.	do	do	do	(2.35)	1.49	.51	.34	.28	.27	.80	.58
149841	U. S.	Adult male	do	do	2.55	1.45	.53	.37	.28	.28	.81	.55
			Average		2.46	1.49	.51	.35	.27	.27	.78	.56
125954	U. S.	Adult female	Charles Island	Apr. 1, 1891	2.50	(1.45)	.52	.35	.28	.25	.72	.52
125956	U. S.	do	do	do	2.52	1.50	.55	.35	.29	.28	.79	.53
125957	U. S.	do	do	do	2.43	1.50	.50	.30	.29	.26	.73	.52
			Average		2.48	1.50	.52	.33	.29	.26	.75	.52
115981	U. S.	do	Albemarle Island.	Apr. 10, 1888	2.38	1.52	.49	.30	.28	.26	.67	.49
149815	U. S.	do	do	do	2.38	.....	.44	.30	.25	.25	.74	....
149816	U. S.	do	do	do	2.30	1.38	.48	.33	.28	.28	.76	....
149818	U. S.	do	do	do	2.42	1.55	.50	.32	.24	.26	.78	....
			Average		2.37	1.48	.48	.31	.26	.26	.74	.49
115892	U. S.	do	Duncan Island	Apr. 13, 1888	2.46	1.55	.52	.33	.29	.28	.75	.51
115893	U. S.	do	do	do	2.45	1.55	.50	.35	.26	.27	.75	.52
			Average		2.46	1.55	.51	.34	.28	.28	.75	.52
149833	U. S.	do	Hood Island	Apr. 7, 1888	2.37	1.58	.50	.31	.26	.26	.75	.52
149838	U. S.	do	do	do	2.38	1.43	.50	.32	.28	.28	.78	.55
149839	U. S.	do	do	do	2.50	1.52	.50	.31	.26	.27	.77	.51
149840	U. S.	do	do	do	2.33	1.37	.52	.32	.25	.26	.77	.54
			Average		2.40	1.48	.51	.32	.26	.27	.77	.53

GEOSPIZA PARVULA, Gould.

(Plate LVII, fig. 18.)

Geospiza parvula, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 6 (Galapagos Islands[1]); Zool. Voy. Beagle, III, Birds, 1841, p. 102, pl. XXXIX (James Island).—BONAPARTE, Consp. Av., I, 1850, p. 543.—GRAY, Hand-l., II, 1870, p. 88.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Bindloe and Abingdon islands); Nom. Av. Neotr., 1873, p. 27.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (Chatham Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 483 (James, Chatham, Bindloe, and Abingdon islands); Cat. Strickl. Coll. 1882, p. 219.—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 13 (Chatham, James, Abingdon, and Bindloe islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 107 (Abingdon Island).

Specific characters.—Similar to *G. fuliginosa*, Gould, but smaller, with bill more compressed and with straighter outlines; adult males (always?)

[1] Mr. Sharpe designates as the "types of the species" a pair from Chatham Island; but as Mr. Darwin, in the "Zoology of the Beagle" mentions only James Island in connection with the species, I think this is an error. (See also remarks under *Progne modesta*, on p. 505.)

with belly and flanks streaked or intermixed with whitish, and rump grayish olive; adult females plain pale grayish buffy beneath or with only the chest streaked; young (females at least) also plain pale grayish buffy beneath. Wing, about 2.25–2.35; tail, 1.30–1.42; culmen, 0.45–0.48; depth of bill at base, 0.30–0.31; tarsus, 0.70–0.72.

Range.—Galapagos Archipelago: Chatham Island (Kinberg, Townsend); ? Barrington Island (Baur and Adams); ? Indefatigable Island (Baur and Adams); James Island (Darwin); Bindloe Island (Habel); Abingdon Island (Habel, *Albatross*).

Adult (?) male.[1]—No. 77755, U.S.N.M.; Abingdon Island, Galapagos, November 15–30, 1868; Dr. A. Habel. Upper parts, head, neck, and chest uniform sooty black, more dusky brown posteriorly, the rump dull grayish olive; rest of under parts sooty blackish, indistinctly streaked with pale buffy grayish, the under tail-coverts buffy white with a central sagittate mark of dusky and the basal half clear slate-gray. Bill wholly black; legs and feet blackish brown. Length (skin), 3.55 (before skinning), 4.50; wing, 2.35; tail, 1.39; culmen, 0.48; gonys, 0.25; basal width of mandible, 0.25; basal depth of bill, 0.31; tarsus, 0.73; middle toe, 0.53.

Younger male.—No. 77754, U.S.N.M.; same locality, etc. Dark grayish brown or sooty, the under parts narrowly streaked with dull brownish white; maxilla brownish black, mandible dark brownish; legs and feet blackish brown. Length (skin), 3.40; wing, 2.25; tail, 1.30; culmen, 0.48; gonys, 0.25; basal width of mandible, 0.25; basal depth of bill, 0.30; tarsus, 0.70; middle toe, 0.53.

Adult female.—No. 115955, U.S.N.M.; Chatham Island, April 5, 1888, C. H. Townsend. Above nearly uniform dull grayish brown, the wing-feathers margined with paler, especially middle and greater coverts; under parts very pale grayish buffy, or buffy grayish white, the chest (only) with a few indistinct streaks of grayish brown; maxilla blackish brown, mandible paler; legs and feet dark horn brown. Length (skin), 3.85; wing, 2.32; tail, 1.42; culmen, 0.45; gonys, 0.23; basal width of mandible, 0.25; basal depth of bill, 0.30; tarsus, 0.72; middle toe, 0.50.

Young female?.—No. 115954, U.S.N.M.; same locality, etc. Essentially like the adult female, but more tinged with buffy olive above and with centers of feathers on pileum and back slightly darker, producing obsolete streaks or spots; under parts wholly immaculate plain pale grayish buffy; bill light brown, the mandible paler; legs and feet deep horn-brown.

There are three other specimens, young birds, from Abingdon Island that are unstreaked pale grayish buffy beneath, and which are therefore unquestionably referable to *G. parvula;* none of them are sexed. There are also six young birds from the same locality that are equally small, but which have the under parts much streaked with dusky (the chin

[1] This specimen is in worn and faded midsummer plumage. Having no specimens from James Island, I am unable to describe examples from the type locality.

and throat almost, sometimes quite, uniformly this color) and the upper parts very much darker. In fact, they resemble exactly in coloration the young of *G. fuliginosa*, but are decidedly smaller. Only one of them has the sex determined, and that is marked "♀." Unless these are unusually small young birds of *G. fuliginosa*, I should be inclined to regard them as all young males of *G. parvula*, notwithstanding the determination of the specimen mentioned; for it looks very much as if the sexual difference in color might, in this form, be as well marked in the young as in the adults.

An adult male from Chatham Island, which seems to be referable to *G. parvula*, has a longer wing and tail than Abingdon Island specimens, but does not otherwise differ in measurements, which are as follows: Length (skin), 3.90; wing, 2.39; tail, 1.45; culmen, 0.47; gonys, 0.25; basal width of mandible, 0.25; basal depth of bill, 0.32; tarsus, 0.72; middle toe, 0.51. In color it resembles the adult (or nearly adult) male from Abingdon Island described above, having the rump dusky olive and the posterior under parts (from upper belly and middle of sides backward) much streaked or intermingled with dull grayish white.

Respecting the occurrence of this form on Barrington and Indefatigable islands, I find among the notes made on the Baur-Adams collection a memorandum to that effect; but as my present understanding of *G. parvula* is somewhat different from what it was at the time the specimens were examined, the specimens (which unfortunately I have not access to at present) should be reexamined.

Measurements of Geospiza parvula.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
77754	U. S.	Immature male	Abingdon Island	Dec. —, ——	2.29	1.32	.50	.34	.27	.27	.71	.53
77755	U. S.	Adult male	do	Nov. —, ——	2.28	1.40	.48	.35	.27	.27	.72	.55
116119	U. S.	do	do	Apr. 16, 1888	2.37	1.52	.51	.34	.28	.28	.70	.50
116120	U. S.		do	do	2.23	1.47	.50	.32	.26	.25	.71	.50
			Average		2.29	1.43	.50	.34	.27	.27	.71	.52
125924	U. S.	Adult male	Chatham Island	Mar. 30, 1891	2.43	1.50	.48	.33	.25	.25	.73	.52
115955	U. S.	Adult female	do	Apr. 5, 1888	2.31	1.45	.45	.31	.24	.25	.73	.50

GEOSPIZA ACUTIROSTRIS, Ridgway.

(Plate LVII, fig. 21.)

Geospiza acutirostris, Ridgway, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 363 (Tower Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *G. parvula*, Gould, but bill longer, with straighter outlines, and extremely acute at tip.

Measurements of type.—Wing, 2.45; tail, 1.58; culmen, 0.55; depth of

bill at base, 0.30; tarsus, 0.75; middle toe, 0.53. (Type in Dr. Baur's collection.)

Range.—Galapagos Archipelago: Tower Island (Baur and Adams).

The form of the bill in this species is conspicuously unlike that of any other, being almost exactly that of *Carduelis*.

There are 7 specimens in Dr. Baur's collection, 4 of which are in the black plumage.

GEOSPIZA DENTIROSTRIS, Gould.

Geospiza dentirostris, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 6 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 102.—BONAPARTE, Consp. Av., I, 1850, p. 543.—GRAY, Hand-l., II, 1870, p. 88.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 27.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 482 (part) (Charles Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 11 (Charles Island, Chatham Island?).

Geospiza fortis (nec GOULD), SALVIN, Proc. Zool. Soc., 1883, p. 421 (part: Charles Island).

Specific characters.—Apparently most like *G. fratercula*, Ridgway, of Abingdon Island, but rather smaller, the bill especially, the latter with the maxillary tomium slightly toothed.

Range.—Galapagos Archipelago: Charles Island (Markham); ? Chatham Island (fide Sharpe).

"*Adult male.*—Similar to the male of *G. fortis*,[1] but with a differently shaped bill, bowed in toward the end of the upper mandible, and slightly toothed on its cutting edge. Total length, 4.5 inches; culmen, 0.55; wing, 2.65; tail, 1.45; tarsus, 0.75.

"*Adult female* (type of species).—Similar to the female of *G. fortis*, but differing in the form of the bill. Total length, 4.9 inches; culmen, 0.6; wing, 2.65; tail, 1.55; tarsus, 0.75." (Sharpe.)

I have never seen a specimen of this apparently very distinct species.

GEOSPIZA DIFFICILIS, Sharpe.

(Plate LVII, fig. 20.)

Geospiza dentirostris (nec GOULD), SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Abingdon Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 483 (Abingdon Island).

??*Geospiza fortis* (nec GOULD), SALVIN, Proc. Zool. Soc., 1883, p. 421 (part: Charles Island).

Geospiza difficilis, SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 12 (Abingdon Island, Galapagos Archipelago; collection Brit. Mus.; "Charles Island").—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 107 (Abingdon Island).

Specific characters.—Similar to *G. fuliginosa*, Gould, in general dimensions, but bill very different in form, being more elongated, culmen straighter with basal portion distinctly elevated and arched, nasal

[1] Mr. Sharpe's *G. fortis* included Abingdon Island specimens which I have recently separated as *G. fratercula*.

fossæ much larger, and maxillary tomium more distinctly lobed or convex in middle portion. Female much darker than in any allied forms.

Range.—Galapagos Archipelago: ??Charles Island (Markham); Abingdon Island (Habel, Townsend).

Adult male.—No. 116117, U.S.N.M.; Abingdon Island, Galapagos, April 16, 1888; C. H. Townsend. Entirely uniform deep black, the feathers abruptly clear slate-gray beneath the surface; bill wholly deep black; legs and feet brownish black. Length (skin), 4.55; wing, 2.43; tail, 1.50; culmen, 0.58; gonys, 0.31; basal width of mandible, 0.28; basal depth of bill, 0.37; tarsus, 0.80, middle toe, 0.53.

Adult (?) female.—No. 116118, U.S.N.M.; same locality, etc. Above dull grayish dusky (inclining to grayish or olivaceous black on head and neck), the feathers margined with olivaceous; beneath dusky slate, nearly uniform anteriorly, but feathers everywhere margined with light buffy olive, most broadly on under parts of the body, especially posteriorly, where nearly uniform on belly and flanks; under tail-coverts light brownish buffy, tinged with olive, each with a central longitudinal spot of dusky. Bill, legs, and feet brownish black. Length (skin), 4.75; wing, 2.35; tail, 1,45; culmen (tip of maxilla broken); gonys, 0.29; basal width of mandible, 0.24; tarsus, 0.80; middle toe, 0.54.

I doubt the correctness of the identification, or the locality, of the Charles Island specimen collected by Captain Markham.

GEOSPIZA DEBILIROSTRIS, Ridgway.

(Plate LVII, fig. 19.)

Geospiza debilirostris, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 363 (James Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *G. fortis*, Gould, in size, but feet larger and stouter, and bill conspicuously smaller.

Range.—Galapagos Archipelago: James Island (*Albatross*).

Adult male.—Type, No. 116003, U.S.N.M.; James Island, Galapagos, April 11, 1888; C. H. Townsend. Entirely uniform deep black (less intense posteriorly), the feathers abruptly clear slate-gray beneath the surface; lower part of abdomen intermixed with buffy whitish, and longer under tail-coverts broadly margined terminally with the same, tinged with light rusty; bill wholly deep black; legs and feet brownish black. Length (skin), 4.90; wing, 2.93; tail, 1.70; culmen, 0.60; gonys, 0.30; basal width of mandible, 0.30; basal depth of bill, 0.37; tarsus, 0.95; middle toe, 0.67.

Of this apparently very distinct species I have seen but one specimen. Although the general dimensions are nearer those of *G. fortis* than any other form of the genus, the bill is scarcely larger than in *G. fuliginosa*, and has exactly the same form as in that species.

GEOSPIZA SCANDENS (Gould).

(Plate LVII, fig. 2.)

Cactornis scandens, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 7 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 104, pl. 42 (James Island).—BONAPARTE, Consp. Av., I, 1850, p. 542.—GRAY, Hand-l., II, 1870, p. 89.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 124 (part: James Island).—SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 485 (part: James Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 19 (part: James Island).

G[eospiza] scandens, RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1894, p. 361 (in text).

[*Tisserin de Gallapagos*, NÉBOUX, Rev. Zool., 1840, p. 291.—*Cactornis grimpeur*, PRÉVOST et DES MURS, Voy. Vénus, Ois., 1855, p. 204.]

Specific characters.—Bill elongate-conical, with its basal depth much less than the length of the gonys, and the basal width of the mandible (across chin) still less; culmen slightly convex, nearly straight in middle portion, scarcely arched basally, and not more than 0.72 (usually about 0.70) in length; basal depth of bill, 0.33–0.37; basal width of mandible, 0.28–0.31; wing, 2.65–2.80; tail, 1.58–1.79; tarsus, 0.80–0.85.

Range.—Galapagos Archipelago: James Island (Darwin, Kinberg, Baur and Adams).

Adult male.—No. 542, collector Dr. G. Baur; James Island, Galapagos, August 16, 1891. Entirely uniform deep black; bill wholly deep black; legs and feet brownish black; "iris dark brown." Length (skin), 4.35; wing, 2.70; tail, 1.62; culmen, 0.70; gonys, 0.40; width of mandible at base, 0.28; depth of bill at base, 0.34; tarsus, 0.83; middle toe, 0.58.

Immature male.—No. 572, U.S.N.M.; same collection, etc., August 17. Head and neck dull blackish, slightly broken on chin and throat by a few narrow whitish streaks; postocular region, hind neck, and upper parts dull grayish olive (more decidedly olivaceous on lower back and rump), the feathers of the back extensively blackish centrally, producing a spotted appearance; wings and tail dusky, the feathers with grayish olive margins, the middle and greater wing-coverts conspicuously margined terminally with pale brownish buffy, and the primaries narrowly edged with light olive-grayish; under parts, posterior to throat, pale olive-buffy, tinged with pale brownish laterally, the feathers of the chest, upper breast, sides, and flanks with broad central spots of dusky, larger and more distinct anteriorly; under tail-coverts with rather indistinct central spots of grayish; bill wholly deep black; legs and feet brownish black; "iris dark brown." Length (skin), 4.70; wing, 2.80; tail, 1.79; culmen, 0.72; gonys, 0.40; width of mandible at base, 0.30; depth of bill at base, 0.35; tarsus, 0.83; middle toe, 0.62.

Adult female.—No. 554, U.S.N.M.; same collection, etc., August 16. Similar to the immature male described above, but head grayish olive, streaked with dusky, the chin and throat narrowly streaked with buffy grayish white and dusky; under parts more strongly tinged with light

buffy brown, with spots on breast, etc., narrower and rather less distinct; light terminal margins to wing-coverts broader and more cinnamomeous, especially those on middle coverts; mandible black only on upper basal portion, the rest dark purplish brown; "iris brown." Length (skin), 4.30; wing, 2.65; tail, 1.58; culmen, 0.71; gonys, 0.40; width of mandible at base, 0.30; depth of bill at base, 0.36; tarsus, 0.82; middle toe, 0.59.

Young male.—No. 523, U.S.N.M.; same collection, etc., August 13. Similar to the immature male (No. 572) described above, but margins of wing-coverts dull buffy, and bill light colored, the maxilla dark brown basally, paler terminally and on culmen, the mandible pale brownish buffy with a deep brown patch along deflected portion of the tomium. Length (skin), 4.60; wing, 2.65; tail, 1.65; culmen, 0.70; gonys, 0.40; width of mandible at base, 0.30; depth of bill at base, 0.35; tarsus, 0.84; middle toe, 0.65.

This form, which is peculiar to James Island, is the smallest member of the subgenus *Cactornis*, and has the bill not only distinctly smaller than in any other form but with straighter outlines. There are eight specimens in Dr. Baur's collection, their measurements being as follows:

Measurements of Geospiza scandens.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Gonys.	Basal width of mandible.	Basal depth of bill.	Tarsus.	Middle toe.
523	B. & A.	Young male...	James Island	Aug. 13, 1891	2.65	1.65	.70	.40	.30	.35	.84	.65
542	B. & A.	Adult male ...	.....do	Aug. 16, 1891	2.70	1.62	.70	.40	.28	.34	.83	.58
548	B. & A.	.....do	.....do	.....do	2.80	1.72	.70	.40	.30	.37	.85	.59
555	B. & A.	.....do	.....do	Aug. 17, 1891	2.65	1.70	.70	.39	.30	.35	.80	.61
566	B. & A.	.....do	.....do	.....do	2.62	1.60	.70	.39	.30	.37	.84	.58
568	B. & A.	.....do	.....do	.....do	2.72	1.63	.71	.40	.30	.36	.81	.60
572	B. & A.	Immature male	.....do	.....do	2.80	1.79	.72	.40	.31	.33	.83	.62
			Average....	.....	2.71	1.67	.70	.40	.30	.35	.83	.60
554	B. & A.	Adult female..	James Island	Aug. 16, 1891	2.65	1.58	.71	.40	.30	.36	.82	.59

GEOSPIZA INTERMEDIA, Ridgway.

(Plate LVII, fig. 3.)

Cactornis scandens (nec GOULD), SUNDEVALL, Proc. Zool. Soc., 1871, p. 124 (part: Charles Island).—SALVIN, Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 485 (part: Charles Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 108 (part: Charles Island).

Geospiza intermedia, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 361, in text, sub *G. assimilis* (Charles Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *G scandens* (Gould), of James Island, but with larger and stouter bill. Culmen, 0.75–0.79; basal depth of

bill, 0.35–0.40; basal width of mandible, 0.29–0.32; wing, 2.62–2.80; tail, 1.59–1.75; tarsus, 0.82–0.83.

Range.—Galapagos Archipelago: Charles Island (Néboux, Kinberg, Townsend, Baur and Adams).

Adult male.—Type, No. 115916, U.S.N.M.; Charles Island, Galapagos, April 8, 1888; C. H. Townsend. Entirely uniform deep black, less intense or tinged with olive-slaty, posteriorly, the feathers abruptly clear slate-gray beneath the surface; longer under tail-coverts margined terminally with white; bill black, middle portion of mandible underneath, tinged with brown; legs and feet brownish black. Length (skin), 5.35; wing, 2.75; tail, 1.72; culmen, 0.75; gonys, 0.41; basal width of mandible, 0.32; basal depth of bill, 0.39; tarsus, 0.82; middle toe, 0.60.

Younger male.—No. 125962, U.S.N.M.; same locality and collector, April 1, 1891. Dull black, uniform only on head, neck, and chest, the feathers of upper parts margined with grayish olive, indistinctly on back, most conspicuously on rump; feathers of under parts, posterior to chest, margined with pale buffy grayish or olive-whitish, the latter prevailing on center of abdomen and on under tail-coverts; bill, legs, and feet as in perfectly adult male. Length (skin), 5.30; wing, 2.80; tail, 1.78; culmen, 0.78; gonys, 0.41; basal width of mandible, 0.29; basal depth of bill, 0.38; tarsus, 0.83; middle toe, 0.59.

Immature male.—No. 125964, U.S.N.M.; same locality, etc. Above dusky, nearly uniform on pileum, elsewhere broken by olive-grayish margins to the feathers, the middle and outermost greater wing-coverts distinctly margined with pale grayish buffy; sides of head sooty grayish, finely and indistinctly streaked with dusky and dull grayish buffy; chin, throat, and chest blackish dusky, broken by occasional edgings of pale grayish buffy; rest of under parts broadly striped with dusky and pale grayish buffy, the latter prevailing posteriorly; bill wholly black; legs and feet blackish brown. Length (skin), 5.10; wing, 2.75; tail, 1.75; culmen, 0.79; gonys, 0.45; basal width of mandible, 0.32; basal depth of bill, 0.40; tarsus, 0.82; middle toe, 0.60.

Adult female.—No. 125965, U.S.N.M.; same locality, etc. Similar to the immature male described above (No. 125964, U.S.N.M.), but anterior under parts much more broadly streaked with dull whitish; mandible largely light brownish. Length (skin), 4.90; wing, 2.78; tail, 1.59; culmen, 0.79; gonys, 0.42; basal width of mandible, 0.31; basal depth of bill, 0 38; tarsus, 0.85; middle toe, 0.64.

Immature female.—No. 115918, U.S.N.M.; same locality and collector, April 8, 1888. Similar to the adult female, as described, but feathers of upper surface more distinctly margined with a more distinctly olivaceous hue, the middle and greater wing-coverts broadly margined terminally with brownish buff; under parts strongly suffused with pale olive-buffy; mandible dark brownish, becoming black basally. Length (skin), 4.95; wing, 2.62; tail, 1.65; culmen, 0.77; gonys, 0.43; basal width of mandible, 0.30; basal depth of bill, 0.35; tarsus, 0.83; middle toe, 0.58.

Measurements of Geospiza intermedia.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
115916	U. S.	Adult male	Charles Island	Apr. 8, 1888	2.75	1.73	.73	.41	.41	.34	.85	.64
115917	U. S.	do	do	do	2.83	1.83	.83	....	.47	.31	.88	.60
125962	U. S.	do	do	Apr. 1, 1891	2.83	1.80	.78	.40	.43	.30	.85	.58
125963	U. S.	Immature male?	do	do	2.68	1.54	.78	.39	.42	.31	.86	.59
125964	U. S.	Immature male.	do	do	2.78	1.75	.80	.40	.47	.31	.82	.58
			Average		2.77	1.73	.78	.40	.44	.32	.85	.60
115918	U. S.	Immature female.	Charles Island	Apr. 8, 1888	2.62	1.65	.77	.38	.42	.30	.85	.58
115919	U. S.	Adult female	do	do	2.86	1.72	.80	....	.43	.30	.89	.66
125965	U. S.	Immature female.	do	Apr. 1, 1891	2.82	1.60	.75	.40	.40	.31	.82	.65
			Average		2.83	1.66	.77	.39	.42	.30	.85	.63

GEOSPIZA ASSIMILIS (Gould).

Cactornis assimilis, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 7 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 105, pl. XLIII.—BONAPARTE, Consp. Av., I, 1850, p. 542.—GRAY, Hand-l., II, 1870, p. 323.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Bindloe Island); Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 486 (Bindloe Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 18 (Bindloe Island).

Specific characters.—Adult male unknown,[1] but immature male and adult female apparently differing from those of *G. scandens* in larger size.

Range.—Galapagos Archipelago: ? James Island (Baur and Adams); Bindloe Island (Habel, fide Salvin).

Immature male.—"General color above blackish, slightly varied with ashy olive margins to the feathers, especially on the lower back, rump, and upper tail-coverts; lesser wing-coverts like the back; median and greater coverts blackish, with sandy margins to the feathers; bastard wing, primary coverts, and quills blackish, narrowly edged with ashy olive, the primaries margined with hoary gray; tail feathers blackish brown, edged with paler brown externally, and with sandy brown near the tips of the inner webs; head and neck rather browner than the back, the sides of the face, ear-coverts, throat, and breast blackish brown, the latter slightly mottled with sandy brown edges; center of abdomen buffy whitish, strongly mottled with blackish brown centers to the feathers; sides of body, flanks, and thighs blackish brown, washed with ashy brown; under tail-coverts blackish brown, conspicuously edged with buffy whitish; under wing-coverts and axillaries blackish

[1]Dr. Sharpe describes what he calls the adult male, but the specimen which he describes (the type) is evidently an immature bird. His description is quoted under the heading "Immature male."

brown, edged with ashy olive. Total length, 5 inches; culmen, 0.9; wing, 2.75; tail, 1.4; tarsus, 0.95.

"*Adult female.*—Similar to the male. Total length, 5 inches; culmen, 0.85; wing, 2.75; tail, 1.5; tarsus, 0.85." (Sharpe.)

Without having seen specimens of this form, I am unable to state just how much it differs from *G. intermedia* and other local races.

Upon what grounds Messrs. Sclater and Salvin, and after them Dr. Sharpe, identify the Bindloe Island *Cactornis* with *C. assimilis*, Gould, we are not informed. Even Darwin did not know where the type came from, though he says "almost certainly not from James Island."[1]

There is in Dr. Baur's collection a young male from James Island (No. 527, August 13, 1891) which is certainly not *G. scandens*, but is either *G. assimilis* or an undescribed form. It is decidedly larger than any of the eight examples of *G. scandens* with which I have compared it, the bill especially being much larger and deeper, with decidedly curved culmen. These differences are the more important from the fact that the bird is a very young one, in nestling plumage. The coloration is much darker than in any of the immature stages of *G. scandens*, the under parts being mostly dark sooty grayish distinctly intermixed with whitish only on the abdominal region and under tail-coverts, and the upper parts are quite uniform dark sooty, except the wings, which have the usual lighter margins, though these are distinct only on the middle and greater coverts. The bill is a light buffy brown, dusky at the extreme tip and deeper brown basally. In coloration this James Island specimen very closely resembles a young male of corresponding age of *G. abingdoni*, except that in the latter the maxilla is almost wholly blackish brown, and the mandibular rami have a sharply defined oblique spot of the same color at their upper basal portion; but the shape of the bill is quite different, that of *G. abingdoni* being much more slender.

The presumed young male of *G. assimilis*, mentioned above, may be more exactly described as follows:

Young male.—No. 527, collection of Dr. G. Baur; James Island, Galapagos, August 13, 1891. Above uniform sooty blackish, the middle wing-coverts and remiges narrowly margined with dull grayish buffy, becoming more decidedly grayish on primaries; greater wing-coverts more broadly margined (especially at tips) with a more pronounced buffy tint; under parts more grayish dusky than upper surface, nearly uniform as far back as chest, elsewhere, especially on abdomen, broken by irregular streaks of dull grayish white; bill pale buffy brown, deeper brown on basal half of maxilla (except on culmen) and along deflected portion of the mandibular tomium; legs and feet blackish brown; "iris dark brown." Length (skin), 5; wing, 2.85; tail, 1.80; culmen, 0.80; gonys, 0.46; width of mandible at base, 0.35; depth of bill at base, 0.42; tarsus, 0.90; middle toe, 0.68.

[1] Zoology of the Beagle, Birds, p. 105.

GEOSPIZA FATIGATA, Ridgway.

Cactornis scandens (nec GOULD), SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island).—SALVIN, Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 485 (part: Indefatigable Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 108 (part: Indefatigable Island).

Geospiza assimilis (nec *Cactornis assimilis*, GOULD), RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1894, p. 361 (Indefatigable Island; Albemarle and Jervis islands?).

Geospiza fatigata, RIDGWAY, Proc. U. S. Nat. Mus., XVIII, No. 1067, April 23, 1896, p. 293 (Indefatigable Island, Galapagos Archipelago; U. S. Nat. Mus.).

Specific characters.—Similar to *G. intermedia*, Ridgway, from Charles Island, but slightly larger, with the bill, legs, and toes decidedly longer. Wing, 2.65–2.82; tail, 1.65–1.73; culmen, 0.82–0.89; basal depth of bill, 0.40; basal width of mandible, 0.35–0.39; tarsus, 0.85–0.90.

Range.—Galapagos Archipelago: ?Albemarle Island (Baur and Adams); ??Chatham Island (Baur and Adams); Indefatigable Island, (Habel, *Albatross*, Baur and Adams); ?Jervis Island (Baur and Adams).

Adult male.—Type, No. 116048, U.S.N.M.; Indefatigable Island, Galapagos, April 12, 1888; C. H. Townsend. Entirely uniform black, deepest anteriorly;[1] bill wholly deep black; legs and feet dark brownish. Length (skin), 5.35; wing, 2.82; tail, 1.70; culmen, 0.82; gonys, 0.48; basal width of mandible, 0.35; basal depth of bill, 0.40; tarsus, 0.88; middle toe, 0.65.

Immature male.—No. 116050, U.S.N.M.; same locality, etc. Head and neck nearly uniform grayish dusky; rest of upper parts similar, but feathers broadly margined with dull brownish gray, this color nearly uniform on rump; under parts, posterior to throat, with feathers dusky centrally and dull grayish white on margins, the former color prevailing anteriorly, the latter posteriorly; bill wholly black; legs and feet brownish black. Length (skin), 5.30; wing, 2.80; tail, 1.73; culmen, 0.89; gonys, 0.50; basal width of mandible, 0.35; basal depth of bill, 0.40; tarsus, 0.90; middle toe, 0.65.

Adult female.—No. 116051, U.S.N.M.; same locality, etc. Similar to the immature male described above, but upper parts more tinged with olive and the lighter color of the under parts tinged with pale dull buff; mandible dark brown, blackish at base. Length (skin), 5.35; wing, 2.65; tail, 1.65; culmen, 0.82; gonys, 0.47; basal width of mandible, 0.39; basal depth of bill, 0.40; tarsus, 0.85; middle toe, 0.61.

The specific name selected for this form has no reference to the name of the island where the bird occurs, but was suggested by the tedious character of the work involved in discriminating the forms of this difficult subgeneric group.

The only "*Cactornis*" that I have seen from Chatham Island is a young male (No. 115941, U.S.N.M.; Chatham Island, April 5, 1888; C. H.

[1] The under tail-coverts are wanting, but in other specimens are broadly margined with whitish, as in related forms.

Townsend), in nestling plumage (though full grown). It may be referable to the present form, but is just as likely to belong to a different one, adult specimens being necessary to determine the question.

Whether Albemarle and Jervis islands specimens really belong here I am unable to decide, not having specimens at hand.

Measurements of Geospiza fatigata.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
116046	U. S.	Adult male ...	Indefatigable Island.	Apr. 12, 1888	2.90	1.68	.81	.39	.43	.31	.88	.62
116047	U. S.	.....do	.....do	.....do	2.80	1.73	.89	.39	.51	....	.88	.66
116048	U. S.	.....do	.....do	.....do	2.83	1.50	.83	.41	.46	.35	.85	.65
116049	U. S.	Immature male	.....do	.....do	2.78	1.70	.80	....	.42	.32	.84	.64
116050	U. S.	.....do	.....do	.....do	2.81	1.75	.84	.40	.48	.35	.90	.68
				Average....	2.82	1.61	.85	.40	.46	.33	.87	.65
116051	U. S.	Adult female..	Indefatigable Island.	Apr. 12, 1888	2.62	1.61	.85	.41	.47	.31	.85	.62

GEOSPIZA ABINGDONI, Sclater and Salvin.

(Plate LVII, fig. 5.)

Cactornis abingdoni, SCLATER and SALVIN, Proc. Zool. Soc., 1870, pp. 323, 326 (Abingdon Island, Galapagos Archipelago); Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 486 (Abingdon Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 20 (Abingdon Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 108 (Abingdon Island).

G[eospiza] abingdoni, RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1864, p. 361, in text.

Specific characters.—Similar to *G. fatigata*, Ridgway, of Indefatigable Island, but still larger, and the bill much deeper, with culmen more arched and sharply ridged. Adult male: Length (skins), 5–5.55; wing, 2.68–2.92; tail, 1.55–1.77; culmen, 0.80–0.88; gonys, 0.43–0.48; basal width of mandible, 0.32–0.33; basal depth of bill, 0.39–0.45; tarsus, 0.89–0.92; middle toe, 0.65–0.68.

Range.—Galapagos Archipelago: Abingdon Island (Habel; Townsend).

Adult male.—No. 116126, U.S.N.M.; Abingdon Island, April 16, 1888; C. H. Townsend. Uniform black, rather duller or more tinged with grayish on under parts, especially posteriorly; under tail-coverts light gray basally and broadly margined for exposed portion with light buffy, with a large cordate or ovate blackish area between. Bill and feet entirely black. Length (skin), 5.55; wing, 2.88; tail, 1.77; culmen, 0.88; gonys, 0.48; basal width of mandible, 0.33; basal depth of bill, 0.45; tarsus, 0.90; middle toe, 0.68.

Immature male.—No. 116129, U.S.N.M.; same locality, etc. Above dull black, the feathers, except on head and neck, margined with dull

olive, the middle and greater wing-coverts margined terminally with brownish buff; sides of head, chin, and throat plain dull black, like pileum; chest and upper breast the same, but feathers margined with light olive-buff, producing a squamate appearance; rest of under parts dull buffy grayish olive, the feathers with more or less of a dusky central area (most distinct on lower breast), the middle of the abdomen plain pale dull buffy. Maxilla brownish black, with a lighter colored subterminal space; mandible light yellowish brown, with the tip and an oblique space at the lateral base, parallel with the basal deflection of the tomium, dusky; legs and feet black. Bill smaller than in the adult. Length (skin), 5; wing, 2.68; tail, 1.55; culmen, 0.80; gonys, 0.43; basal width of mandible, 0.32; basal depth of bill, 0.40; tarsus, 0.89; middle toe, 0.65.

Young male.—No. 116128, U.S.N.M.; same locality, etc. Essentially like the immature male described above, but texture of plumage very different, and the dusky coloring more uniform, especially on chin, throat, and chest, where quite unbroken.

GEOSPIZA BARRINGTONI, Ridgway.

(Plate LVII, fig. 4.)

Geospiza barringtoni, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 361 (Barrington Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *G. abingdoni*, Sclater and Salvin, of Abingdon Island, but bill much stouter, with its tip less compressed and less acute. Wing, 2.70–2.80; tail, 1.58–1.62; culmen, 0.79–0.80; tarsus, 0.90; middle toe, 0.70. (Type, No. 596, collection of Dr. G. Baur, male adult; Barrington Island, July 9, 1891.)

Range.—Galapagos Archipelago: Barrington Island (Baur and Adams).

Dr. Baur's collection contains three specimens of this form, two adult males and one in the streaked plumage.

I regret being unable to give a more detailed description of this form.

GEOSPIZA BREVIROSTRIS, Ridgway.

(Plate LVII, fig. 6.)

Cactornis brevirostris, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 108, fig. 4 (Chatham Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *G. barringtoni*, Ridgway, of Barrington Island, but tail longer, bill much shorter and stouter, and tarsi shorter. Wing, 2.70–2.80; tail, 1.65–1.85; culmen, 0.70–0.72; basal width of mandible, 0.37; basal depth of bill, 0.42–0.45; tarsus, 0.82–0.87.

Range.—Galapagos Archipelago: Charles Island (*Albatross*; ? Indefatigable Island; Habel).

Immature male.—Type, No. 115920, U.S.N.M.; Charles Island, Galapagos, April 8, 1888; U. S. S. *Albatross.* Dull sooty blackish, uniform on head, neck, and chest, elsewhere broken by lighter margins to feathers; these edgings dull light grayish brown on upper parts, dull brownish white on lower parts; sides and flanks washed with pale brown; under tail-coverts dull buffy white, with concealed mesial streaks of dusky. Bill entirely black; tarsi deep brown; toes brownish black. Length (skin), 4.50; wing, 2.70; tail, 1.85; culmen, 0.72; maxilla from nostril, 0.50; gonys, 0.40; basal width of mandible, 0.37; basal depth of bill, 0.45; tarsus, 0.82; middle toe, 0.62.

I refer, with some doubt, to this species a bird from Indefatigable Island (No. 77756, U.S.N.M.; Indefatigable Island, August 10, 1868; Dr. A. Habel). It is apparently an adult female, with wholly light cinnamon-colored bill and streaked plumage, lacking the buffy margins of the middle and greater wing-coverts and other features which characterize young birds in their first year. It certainly can not be referred to the ordinary "*Cactornis*" of the same island, which has the bill altogether longer and at the same time much narrower in both its vertical and transverse diameters. The size and shape of the bill agree very closely with those of *G. brevirostris*, though, as might be expected from the difference in age or sex, it is not quite so strong.

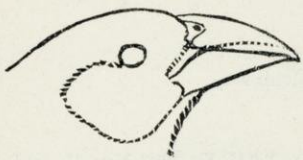


Fig 5. Head of *Geospiza brevirostris.*

The specimen in question may be described as follows:

?*Adult female.*—No. 77756, U.S.N.M.; Indefatigable Island, August 10, 1868; Dr. A. Habel. Above dusky, all the feathers margined with grayish olive, this color prevailing (almost uniform, in fact) on the rump; middle and greater wing-coverts margined terminally with a rather more buffy or light brownish hue, but still not approaching tawny or rusty; sides of head, chin, and throat dusky or dull blackish brown, faintly streaked with dull whitish, more distinctly along the median line; rest of under parts dull buffy white, immaculate on middle of abdomen, elsewhere broadly streaked with dusky, the streaks giving way on sides and flanks to a nearly uniform light olive. Bill wholly clear deep cinnamon, paler on lower and terminal portions of mandible; legs and feet brownish black. Length (skin), 3.80; wing, 2.80; tail, 1.65; culmen, 0.70; maxilla from nostril, 0.50; gonys, 0.40; basal width of mandible, 0.37; basal depth of bill, 0.42; tarsus, 0.87; middle toe, 0.62.

The form of the bill in this species is exactly intermediate between that of "*Cactornis*" *scandens* and that of the medium-sized true *Geospizæ*, as *G. fortis*, *G. dubia*, etc. Possibly it is a hybrid.

GEOSPIZA PROPINQUA, Ridgway.

(Plate LVII, fig. 7.)

Geospiza propinqua, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 361 (Tower Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Very similar to *G. conirostris*, Ridgway, of Hood Island, in size and general form, but bill still narrower, with the culmen more convex terminally, and the mandible relatively narrower and more compressed; wing slightly shorter. Wing, 2.95–3.15; tail, 1.85–1.95; culmen, 0.82–0.90; width of mandible across rami 0.23–0.26, of maxilla in front of nostrils 0.22–0.26; tarsus, 0.90–0.95; middle toe, 0.68–0.75.

Range.—Galapagos Archipelago: Tower Island (Baur and Adams).

Adult male.—Type, No. 597, collection of Dr. G. Baur; Tower Island, September 2, 1891. Entirely black, with the plumage abruptly slate-gray basally; bill blackish, the mandible inclining to dusky horn gray; legs and feet dusky. Wing, 3.10; tail, 1.90; culmen, 0.85; width of mandibular rami, 0.23; width of maxilla in front of nostril, 0.23; tarsus, 0.95; middle toe, 0.68.

This form so closely resembles *G. conirostris* that at first I was inclined to consider it the same, notwithstanding the wide separation of the two localities. A closer examination, however, disclosed the fact that while in the Hood Island specimens the under mandible is decidedly broader at the angle than the upper, the Tower Island specimens have the two mandibles of practically equal width. Thus, considering the lateral profile of the bill as a cone, and the culmen as representing the right-hand margin, the commissure would in *G. conirostris* intersect the cone obliquely so as to throw the broader section to the left, while in *G. propinqua* the line would be exactly vertical, thus dividing the cone into two equal sections. Diagrammatically, the difference may be expressed thus:

G. conirostris.

G. propinqua.

While so similar in its lateral aspect, however, a vertical view of the bills of these two species shows that of *G. propinqua* to be much more compressed than that of *G. conirostris*, the width of the mandible between the base of the rami being much less than the length of the gonys, instead of just the same, thus throwing *G. propinqua* on the "*Cactornis*" side of the line.

Adult males of this species have very much less black on the under tail coverts than those of *G. conirostris*. In the latter, these feathers are black with white margins, while in *G. propinqua* they are light buff with a median wedge-shaped mark of black.

The type has the mandible dusky, though not so dark as the maxilla, the color approaching more nearly a dusky horn gray. In the other four adult males, however, the bill is lighter colored, the maxilla being dusky brown and the mandible varying from yellowish horn color to light yellow.

Genus CAMARHYNCHUS, Gould.

Camarhynchus, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 6. Type, *C. psittacula*, Gould.

Generic characters.—Bill short, deep, and broad, long, narrow and compressed, or variously intermediate between these extremes, but the culmen always distinctly curved and the maxilla at least as deep as the mandible, with its tomium varying from nearly straight (*C. psittaculus*, etc.) to strongly angulated (*C. variegatus*). Nostril very small, circular or oval, exposed. Rictal bristles obsolete. Wing about three times as long as tarsus, rounded (first quill equal to or longer than sixth); primaries exceeding secondaries by more than length of maxilla from nostril. Tail not more than twice as long as tarsus, slightly rounded. Middle toe with claw nearly as long as tarsus. Coloration: Above nearly plain olivaceous; beneath dull whitish or pale buff-yellowish, with or without darker streaks on chest, etc., the adult males of some species with head, neck, and chest blackish.

Range.—Peculiar to the Galapagos Archipelago.

This genus comes very near to *Geospiza*, from which it differs chiefly in the form of the bill, which is more compressed, has the culmen (in most species) far more convex, and the gonydeal angle much more prominent. The commissure is also straighter, except in *C. variegatus*, which species very nearly obliterates the gap between typical *Camarhynchus* and such tumid-billed *Geospizæ* as *G. dubia*. *C. variegatus*, in fact, represents one extreme of a nearly unbroken transitional series, the opposite extreme of which is represented by *C. pallidus*. The latter was originally referred to "*Cactornis*," and has been allowed to remain in that so-called genus; but the transition in the form of the bill from *C. pallidus* to *C. psittaculus* through such intermediate species as *C. productus* and *C. compressirostris* is so nearly complete, the plumage being at the same time identical, that I am disposed to refer this long-billed species to *Camarhynchus* rather than to make a new genus for its reception, together with the related *C. productus*. Certainly these two species do not belong to *Cactornis*, which is to *Geospiza* exactly what *C. pallidus* and *C. productus* are to true *Camarhynchus*. In case it be deemed expedient to make a new genus for *C. pallidus* and *C. productus*, it will then be quite necessary to make another one for *C. variegatus*, between which and any other species of the group (except perhaps *C. crassirostris*, Gould, which I have not seen) there is a more definite break than between any of those which are left after its exclusion. Indeed, I find myself quite unable to give precise characters for the genus, the varia-

tions in the form of the bill, both in this group and in *Geospiza*, being very largely a specific character, therefore necessitating either a material increase or reduction of the recognized number of genera within the two groups. The differences in the form of the bill presented by *Camarhynchus*, as here defined, from *Geospiza*, while perfectly obvious on comparison of specimens, are extremely difficult to describe, since they result chiefly from variations of curvature in its outlines and relative proportions of various minor details hardly susceptible of exact definition.

The coloration exhibits much more obvious difference than form, none of the species of *Camarhynchus*, so far as known, being entirely black in the adult male; in fact none of them are black posterior to the chest below or the hind neck above, while, with few exceptions, the immature males and females are not distinctly streaked beneath.

KEY TO THE SPECIES OF CAMARHYNCHUS.

a^1. Tomia strongly angulated and basal width of mandible greatly exceeding length of gonys. (*Platyspiza*[1])

b^1. Distinctly streaked with dusky below (Abingdon?, Bindloe?, Albemarle, James, Indefatigable, Chatham, and Charles islands).
1. *C. variegatus* (p. 548).

(?)[2] b^2. Not distinctly streaked below?. (Charles Island?)
2. *C. crassirostris* (p. 551).

a^2. Tomia moderately or very slightly angulated, and basal width of mandible not greatly, if at all, exceeding length of gonys.

b^1. Basal depth of bill equal to or greater than length of maxilla from nostril. (*Camarhynchus.*)

c^1. Basal width of mandible decidedly greater than length of gonys.

d^1. Larger (wing 2.65–3, culmen 0.55–0.61) and rather paler. (James, Jervis, Indefatigable, and Charles islands).. 3. *C. psittaculus* (p. 552).

d^2. Smaller (wing 2.50–2.75, culmen 0.50–0.57) and rather darker. (Albemarle Island)..... 4. *C. affinis* (p. 554).

c^2. Basal width of mandible not decidedly, if at all, greater than length of gonys.

d^1. Culmen 0.60 or more.

e^1. Larger, with stouter bill (wing 2.68 or more, culmen 0.62 or more).

f^1. Rather smaller (wing 2.68–2.75), with smaller and weaker bill (culmen 0.62) and more compressed culmen; wing-coverts in adult male margined with light brown. (Abingdon Island.)
5. *C. habeli* (p. 555).

f^2. Rather larger (wing 2.68–2.92), with larger and stouter bill (culmen 0.64–0.68) and broader culmen; wing-coverts in adult male margined with olive. (Bindloe Island). 6. *C. bindloei* (p. 556).

e^2. Smaller, with weaker bill (wing 2.57, culmen 0.60). (Jervis Island.)
7. *C. compressirostris* (p. 558).

d^2. Culmen less than 0.60.

e^1. Wing 2.70 or more. (Charles Island)..... 8. *C. pauper* (p. 559).

[1] New subgenus: Type, *Camarhynchus variegatus*, Sclater and Salvin.

[2] The interrogation point signifies doubt as to whether this supposed species is correctly placed in this section or subgenus.

e^2. Wing less than 2.70.

f^1. Culmen 0.50 or more.

g^1. Larger, the bill especially (culmen 0.53, basal width of mandible 0.29). (James Island)..... 9. *C. incertus* (p. 560).

g^2. Smaller, especially the bill (culmen 0.50–0.52, basal width of mandible not more than 0.25). (Chatham Island.)

10. *C. salvini* (p. 561).

f^2. Culmen less than 0.50 (about 0.45). (James, Jervis, Indefatigable, Albemarle, and Charles islands) ..11. *C. prosthemelas* (p. 563).

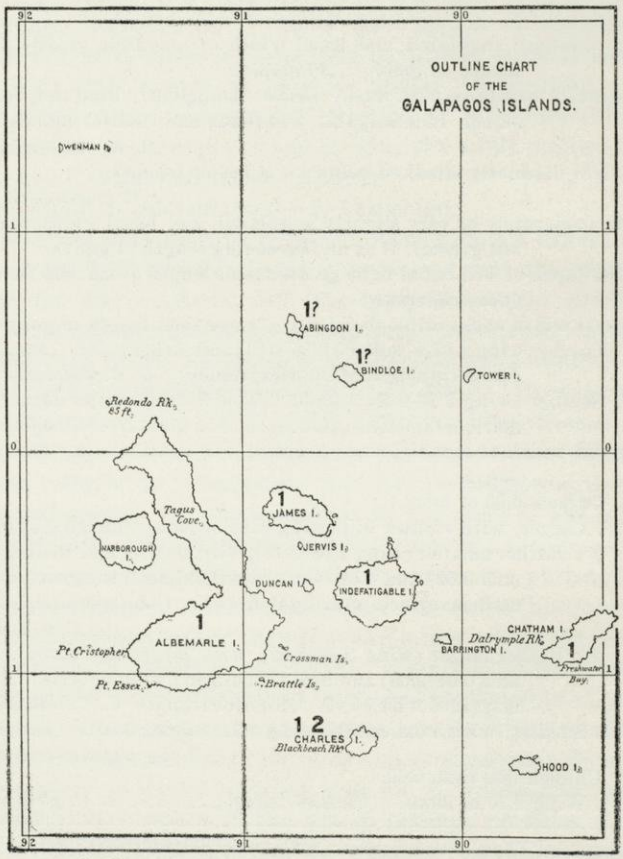
b^2. Basal depth of bill decidedly less than length of maxilla from nostril. (*Cactospiza.*[1])

c^1. Larger and paler (wing 2.72–3, culmen 0.70–0.77, tarsus 0.92–0.94). James, Jervis, and Indefatigable islands).....12. *C. pallidus* (p. 565).

c^2. Smaller and deeper colored (wing 2.65–2.90, culmen 0.67–0.69, tarsus 0.89–0.90). (Albemarle Island).....13. *C. productus* (p. 566).

ASCERTAINED RANGE OF THE GENUS CAMARHYNCHUS, GOULD.

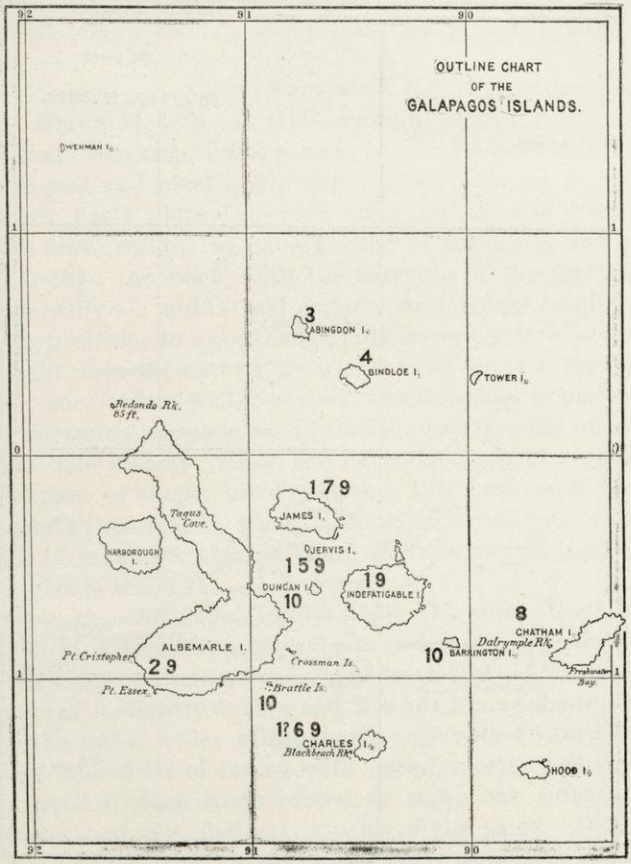
a. Subgenus **PLATYSPIZA**, Ridgway.



1. *Camarhynchus variegatus*, Sclater and Salvin.
2. *Camarhynchus crassirostris*, Gould.

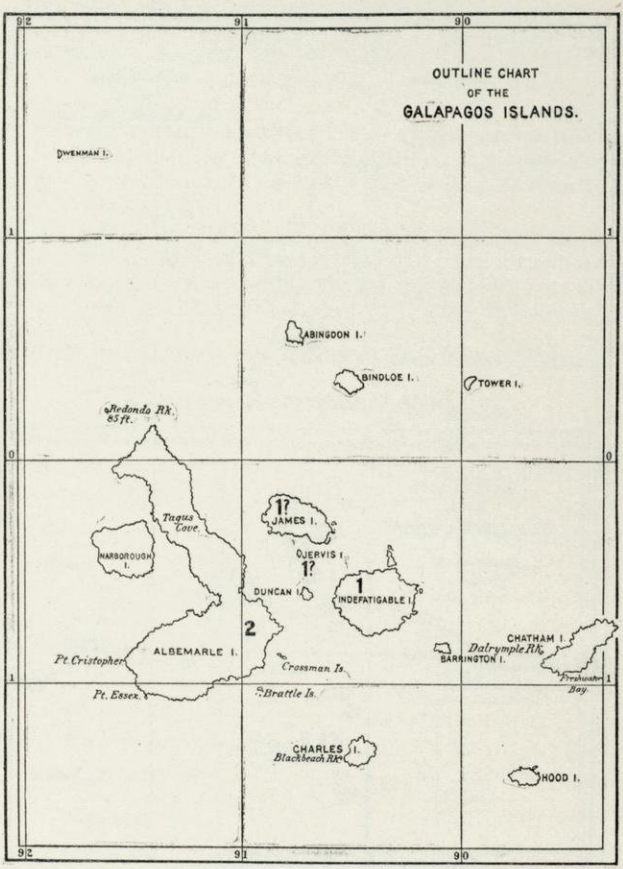
[1] New subgenus. Type, *Cactornis pallida*, Sclater and Salvin.

b. Subgenus **CAMARHYNCHUS**, Gould.



1. *Camarhynchus psittaculus*, Gould.
2. *Camarhynchus affinis*, Ridgway.
3. *Camarhynchus habeli*, Sclater and Salvin.
4. *Camarhynchus bindloei*, Ridgway.
5. *Camarhynchus compressirostris*, Ridgway.
6. *Camarhynchus pauper*, Ridgway.
7. *Camarhynchus incertus*, Ridgway.
8. *Camarhynchus salvini*, Ridgway.
9. *Camarhynchus prosthemelas*, Sclater and Salvin.
10. (Undetermined form.)

c. Subgenus CACTOSPIZA, Ridgway.



1. *Camarhynchus pallidus* (Sclater and Salvin).
2. *Camarynchus productus*, Ridgway.

CAMARHYNCHUS VARIEGATUS, Sclater and Salvin.

(Plate LVI, fig. 17.)

Camarhynchus variegatus, Sclater and Salvin, Proc. Zool. Soc., 1870, pp. 323, 324, fig. 2 ("Abingdon and Bindloes islands," Galapagos Archipelago); Nom. Av. Neotr., 1873, p. 29.—Salvin, Trans. Zool. Soc. Lond., IX, Pt. ix, 1876, p. 489, pl. lxxxv.—Sharpe, Cat. Birds Brit. Mus., XII, 1888, p. 15.

Camarhynchus crassirostris (nec Gould?), Ridgway, Proc. U. S. Nat. Mus., XII, 1889, p. 110 (Charles, Chatham, and Indefatigable islands).

Specific characters.—Culmen strongly convex and maxillary tomium strongly deflected from beneath the nostril to the rictus; gonys straight, strongly ascending terminally, forming a decided angle with the lower edge of the mandibular rami; mandible very broad at the base, where its width greatly exceeds the length of the gonys. Wing, 3.11–3.45; tarsus, 1.05–1.15.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams); Charles Island (Townsend, Baur and Adams); Chatham Island (Townsend, Baur and Adams); Indefatigable Island (*Albatross*); James Island (Baur and Adams); ?Abingdon and Bindloe islands (Habel).

Adult male (worn plumage).—No. 125972, U.S.N.M.; Chatham Island, Galapagos, March 30, 1891; C. H. Townsend. Head, neck, and upper chest dull sooty blackish, broken, more or less, by paler edgings to the feathers, deepest and most uniform on upper chest and middle line of throat; upper parts plain brownish olive, lighter and slightly more buffy on the lower rump; the general color of the wings and tail somewhat darker than the back, with the margins of the feathers rather lighter, especially on middle and greater wing-coverts and primaries; under parts, posterior to upper chest, pale creamy yellow, shaded laterally with light olive-brown, the lower chest and sides of breast marked with broad, more or less wedge-shaped, streaks of sooty blackish, these gradually becoming obsolete on the sides; under wing-coverts white tinged with pale creamy yellow, the carpo-metacarpal region with an elongated space of dusky olive-grayish. Bill, legs, and feet wholly black. Length (skin), 5.90; wing, 3.32; tail, 2.10; culmen, 0.70; gonys, 0.30; width of mandible at base, 0.40; depth of bill at base, 0.50; tarsus, 1.10; middle toe, 0.71.

Immature male.—No. 76, collection of Dr. G. Baur; Chatham Island, June 18, 1891. Above olive, the pileum rather broadly and distinctly streaked with dusky, the feathers of the back and scapulars with large central spots of a slightly darker and less olivaceous shade; wings and tail as in the adult male; under parts very pale creamy yellow, the whole chest and sides of breast with broad, mostly wedge-shaped or sagittate spots of deep sooty brown, or sepia, the sides and flanks with narrower and less distinct streaks of the same. Bill, legs, and feet black. Length (skin), 5.50; wing, 3.32; tail, 2.30; culmen, 0.70; gonys, 0.30; width of mandible at base, 0.43; depth of bill at base, 0.53; tarsus, 1.10; middle toe, 0.72.

Young male.—No. 60, collection of Dr. G. Baur; Chatham Island, June 17, 1891. Similar to the immature male, as described above, but margins of wing-coverts more buffy, spots on chest, etc., rather deeper in color, and bill light-colored (basal half of maxilla deep brown, terminal half and whole of mandible pale buffy brownish. Length (skin), 5.80; wing, 3.30; tail, 2.20; culmen, 0.68; gonys, 0.30; width of mandible at base, 0.41; depth of bill at base, 0.52; tarsus, 1.13; middle toe, 0.73.

Young female.—No. 37, same collection and locality, June 16. Similar to the young male as described, but markings on breast, etc., less deep (deep hair brown). Length (skin), 5.55; wing, 3.22; tail, 2.10; culmen, 0.63; gonys, 0.29; width of mandible at base, 0.39; depth of bill at base 0.48; tarsus, 1.05; middle toe, 0.69.

Specimens from the various islands differ appreciably though slightly,

and it is not unlikely that when a series of specimens from each in corresponding plumage can be compared, a greater or less number of local forms may be made out.

I am not entirely sure that the bird here described is the true *C. variegatus*, not having been able to examine specimens from the alleged type locality (Abingdon Island). Regarding the latter question, it may be stated that both Mr. Townsend, naturalist of the U. S. S. *Albatross*, and Messrs. Baur and Adams failed to find any other *Camarhynchus* than *C. habeli* and its near ally, *C. bindloei*, on either Abingdon or Bindloe islands. Dr. Baur writes me as follows:

> Habel, according to Salvin, states that both species [*C. habeli* and *C. variegatus*] are found simultaneously on Bindloe and Abingdon. This is certainly not true.

The question therefore arises: Where were the type and other specimens of *C. variegatus*, accredited to Abingdon and Bindloe islands, respectively, really obtained?

Measurements of Camarhynchus variegatus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
125972	U. S.	Adult male	Chatham Island	Mar. 30, 1891	3 32	2.10	.70	.30	.40	.50	1.10	.71
38	B. & A.	do	do	June 16, 1891	3 28	2.13	.68	.30	.38	.50	1.12	.71
40	B. & A.	Young male	do	June 14, 1891	3.25	2.10	68	.30	.40	.50	1.10	.70
60	B. & A.	do	do	June 17, 1891	3.30	2.20	.68	.30	.41	.52	1.13	.73
76	B. & A.	Immature male	do	June 18, 1891	3.32	2.30	.70	.30	.43	.53	1.10	.72
89	B. & A.	Young male	do	June 19, 1891	3.30	2.20	.63	.29	.43	.52	1.11	.74
			Average		3.23	2.17	.68	.30	.41	.51	1.11	.72
115911	U. S.	Immature male	Charles Island	Apr. 8, 1888	3.45	2.25	.72	.32	.42	.52	1.12	.75
125967	U. S.	do	do	Apr. 1, 1891	3.45	2.20	.70	....	.42	.50	1.08	.73
			Average		3.45	2.23	.71	.32	.42	.51	1.10	.74
116040	U. S.	do	Indefatigable Island.	Aug. 12, 1888	3.45	2.25	.70	.30	.41	....	1.11	.71
116041	U. S.	do	do	do	3.40	2.28	.67	.30	.40	.50	1.12	.70
			Average		3.43	2.27	.69	.30	.41	.50	1.12	.71
37	B. & A.	Young female?	Chatham Island	June 16, 1891	3.22	2.10	.63	.29	.39	.48	1.05	.69
73	B. & A.	do	do	June 18, 1891	3.30	2.20	.65	.30	.39	.50	1.15	.72
			Average		3.26	2.15	.64	.30	.39	.49	1.10	.71
446	B. & A.	Adult female?	Indefatigable Island.	Aug. 6, 1891	3.22	2.07	.68	.29	.35	.49	1.08	.70
513	B. & A.	Adult female	James Island	Aug. 12, 1891	3.11	2.16	.60	.28	.38	.49	1.05	.68
524	B. & A.	do	do	Aug. 13, 1891	3.23	2.13	.62	.28	.38	.50	1.13	.74
			Average		3.17	2.15	.61	.28	.38	.50	1.09	.71
645	B. & A.	Adult? female?	Albemarle Island	July 21, 1891	3.25	2.20	.60	.28	.38	.47	1.08	.68

CAMARHYNCHUS CRASSIROSTRIS, Gould.

(Plate LVI, fig. 18.)

Camarhynchus crassirostris, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 6 (Galapagos Islands); Zool. Voy. Beagle, III, Birds, 1841, p. 103, pl. XLI (Charles Island?).—BONAPARTE, Consp. Av., I, 1850, p. 542.—GRAY, Gen. B., II, 1844, p. 359; Hand-l., II, 1870, p. 89.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 489 (Charles Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 16 (Charles Island).

Specific characters.—(No specimens seen by me, and the various published descriptions, purporting to have been taken from the same specimen, are conspicuously at variance in regard to the principal characters of plumage, besides showing important discrepancies as to measurements.)

Range.—Galapagos Archipelago: Charles Island? (Darwin.)

Three descriptions of this species, all purporting to have been taken from the same specimen (the type, now in the British Museum), are as follows:

I.

"*C.* (Mas. jun. et Fœm.) corpore superiore intensè brunneo, singulis plumis cinerascenti-olivaceo marginatis; gutture pectoreque cinerascenti-olivaceis, singulis in medio plumis obscurioribus; abdomine lateribus crissoque cinereis stramineo tinctis.

"Long. tot., 5½ unc.; alæ, 3.34; caudæ, 2; tarsi, 1⅛; rostri, ½; alt. rostri, ½.

"Upper part of the body deep brown, with each feather margined with cinereous olive; the throat and breast cinereous olive, with the middle of each feather darker; the abdomen, sides, and under tail-coverts cinereous tinged with straw-color.

"*Habitat.*—Galapagos Archipelago (Charles Island?)." (Gould.)

II.

"Supra cinereus; capite fuliginoso-nigro: subtus albidus, gula et pectore superiore plumis singulis medialiter nigris: tectricibus alarum et rectricum apicibus fusco albido marginatis: long. tota 5.2, alæ 3, caudæ 1.9, tarsi 0.85, rostri a rictu 0.5.

"*Habitat.*—Charles Island (?) (*Darwin*).

"The type specimen in the British Museum, from which the above description is taken, is probably an adult male." (Salvin.)

III.

"The type specimen is probably a *young male*. It differs from *C. variegatus* in its uniform under surface not being mottled with brown streaks. It has a slight indentation in the cutting edge of the upper mandible answering to *G. dentirostris* in the genus *Geospiza*. Total length, 5.3 inches; culmen, 0.6; wing, 3.05; tail, 1.9; tarsus, 0.9."

(Sharpe.) (It may be remarked that Dr. Sharpe does not think it worth while to question the locality, Charles Island being given without an interrogation mark!)

By comparing the above descriptions with one another it will easily be seen that they differ widely in essential points. In fact, it is difficult to believe that they were not taken from three different birds!

I have a suspicion that this bird may be the same as the form which I have treated in this paper under the title of *C. variegatus*, Sclater and Salvin, which certainly occurs on Charles Island. Should this surmise prove correct, and no error of identification have been made, *C. variegatus* will become a synonym of *C. crassirostris*.

CAMARHYNCHUS PSITTACULUS, Gould.

(Plate LVI, figs. 14–16.)

Camarhynchus psittacula, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 6 (Galapagos Islands).

Camarhynchus psittaculus, DARWIN, Zool. Voy. Beagle, III, Birds, 1841, p. 103, pl. XL (James Island).—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island); Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 488 (James and Indefatigable islands).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 16 (James and Indefatigable islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1890, p. 109 (James and Indefatigable islands).

? *Camarhynchus townsendi*, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 110 (Charles Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

? *Camarhynchus rostratus*, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 363 (James Island; collection U. S. Nat. Mus.).

Specific characters.—Bill short and stout, its basal depth much exceeding the length of the maxilla from the nostril, and the basal width of the mandible decidedly greater than the length of the gonys. Wing, 2.65–3; culmen (from extreme base), 0.55–0.61; width of mandible at base, 0.43–0.47; depth of bill at base, 0.43–0.47.

Range.—Galapagos Archipelago: ? Charles Island (*Albatross*); Indefatigable Island (Habel, *Albatross*); Jervis Island (Baur and Adams); James Island (Darwin, *Albatross*, Baur and Adams).

Adult male.—No. 116006, U.S.N.M.; James Island, April 11; C. H. Townsend.[1] Head, neck, and chest dull black, passing into dusky sooty brown on forehead; rest of upper parts dull grayish olive, much lighter on rump and upper tail-coverts; lower parts from breast backward dull white, tinged with buff posteriorly, especially on under tail-coverts; breast, particularly on sides, indistinctly but rather broadly streaked with dusky. Bill black, brownish on gonys; tarsi deep horn brown; toes dusky. Length (skin), 5.30; wing, 3; tail, 1.80; culmen, 0.62, very strongly arched; depth of bill at base, 0.48, from base of

[1] Type of *C. rostratus*, Ridgway.

culmen to angle of gonys, 0.50; width of mandible at base, 0.37; tarsus, 1; middle toe, 0.70.

Immature male.—No. 116039, U.S.N.M.; Indefatigable Island, April 12; C. H. Townsend. Above light grayish olive, the top of the head rather grayer, broadly but rather indistinctly streaked with dusky, the feathers of the back still more broadly but much less distinctly darker medially. Supraloral region, malar and suborbital regions, and entire under parts dull grayish white, faintly tinged with yellowish buff, especially on chest and breast; the former and sides of the latter broadly but very indistinctly streaked with grayish dusky. Bill dusky horn color, light brown on edge of maxilla and terminal two-thirds of mandible; tarsi and toes brownish black. Length (skin), 5.30; wing, 2.90; tail, 1.80; culmen, 0.60, very strongly arched; depth of bill at base, 0.45, from base of culmen to angle of gonys, 0.47; tarsus, 0.90; middle toe, 0.62.

Adult female.—No. 564, collection of Dr. G. Baur; James Island, Galapagos, August 17, 1891. Above light grayish olive, the pileum obsoletely streaked with darker and the feathers of the back and scapulars darker centrally, producing an obsolete spotting; rump and upper tail-coverts quite uniform, the latter paler and grayer; wings and tail dusky brownish gray, the feathers with light grayish olive margins, the middle wing-coverts broadly tipped with this color, forming an indistinct band, the greater coverts more narrowly tipped with a paler and somewhat more buffy tint. Lores, orbital region, cheeks, and under parts dull grayish buffy whitish, tinged with dull buff on sides and flanks, where obsoletely streaked with darker; ear-coverts very pale olive-grayish, shading posteriorly into the darker color of the hind neck and below into the dull whitish of the malar region; under wing-coverts white, tinged along edge of the wing with pale yellowish buff. Maxilla cinnamon-brown, becoming dusky at tip and on terminal portion of culmen; mandible buff-yellowish; "iris dark brown;" legs and feet brownish black. Length (skin), 4.70; wing, 2.77; tail, 1.75; culmen, 0.61; gonys, 0.32; width of mandible at base, 0.34; depth of bill at base. 0.45; tarsus, 0.90; middle toe, 0.60.

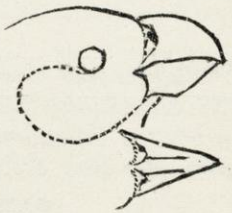


Fig. 6. Head of *Camarhynchus psittaculus?* (Type of *C. townsendi.*)

Immature female.—No. 582; same locality, etc., August 18. Different from the preceding only in the wing-markings, both the middle and greater coverts having much narrower and more sharply defined terminal margins of buffy whitish, the secondaries similarly but less distinctly marked. Length (skin), 4.55; wing, 2.64; tail, 1.60; culmen, 0.55, gonys, 0.30; width of mandible at base, 0.33; depth of bill at base, 0.44; tarsus, 0.90; middle toe, 0.60.

An adult female from Jervis Island in Dr. Baur's collection (No. 464,

August 8, 1891) is essentially identical with that from James Island, the only obvious difference consisting in the slightly paler and grayer color of the pileum and hind neck, with more evident darker streaks, and slight more ochrascent wing-bands. Its measurements are as follows: Length (skin), 4.60; wing, 2.75; tail, 1.75; culmen, 0.57; gonys, 0.30; width of mandible at base, 0.35; depth of bill at base, 0.43; tarsus, 0.90; middle toe, 0.65.

Measurements of Camarhynchus psittaculus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
115915[1]	U. S.	Immature male	Charles Island..	Apr. 8, 1888	2.77	1.65	.59	.30	.34	.43	.90	.60
116006[2]	U. S.	Adult male...	James Island...	Apr. 11, 1888	3.00	1.82	.61	.30	.37	.47	.95	.65
116039	U. S.	Immature male	Indefatigable Island.	Apr. 12, 1888	2.85	1.85	.60	.30	.36	.45	.90	.62
564	B.&A.	Adult female .	James Island...	Aug. 17, 1891	2.77	1.75	.61	.32	.34	.45	.90	.60
582	B.&A.	.....do	.....do	Aug. 18, 1891	2.64	1.60	.55	.30	.33	.44	.90	.60
			Average...	.....	2.71	1.68	.58	.31	.34	.45	.90	.60
464	B.&A.	.....do	Jervis Island...	Aug. 8, 1891	2.75	1.75	.57	.30	.35	.43	.90	.65
115914	U. S.	.....do	Charles Island..	Apr. 8, 1888	2.88	1.73	.58	.30	.35	.....	.95	.65

[1] Type of *Camarhynchus townsendi*, Ridgway.
[2] Type of *Camarhynchus rostratus*, Ridgway.

CAMARHYNCHUS AFFINIS, Ridgway.

Camarhynchus affinis, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 365 (Albemarle Island, Galapagos Archipelago; collection of Dr. G. Baur.

Specific characters.—Similar to *C. psittaculus*, Gould, but smaller (the bill especially) and with the chest rather broadly and distinctly streaked with dusky. Wing, 2.58–2.75; tail, 1.50–1.70; culmen, 0.50–0.57; basal depth of bill, 0.40; basal width of mandible, 0.30–0.33; tarsus, 0.82–0.90.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams).

Adult female?.—Type, No. 598, Dr. Baur's collection, Cowley Bay, on mountains, August 10, 1891. Above light brownish olive, lighter on rump, rather grayer on top of head, where indistinctly streaked with dusky; superciliary stripe (passing to a little behind eye), malar region, and under parts light grayish buff, tinged with brownish on sides (almost isabella color on flanks), and nearly white on abdomen, the chest and sides of breast broadly and rather distinctly streaked with dusky. Bill light brown, paler and yellower on mandible; legs and feet dusky horn color. Length (skin), 4.15; wing, 2.75; tail, 1.70; culmen, 0.57; gonys, 0.30; depth of bill at base, 0.40; width of mandible at base, 0.33; tarsus, 0.90; middle toe, 0.55.

Measurements of Camarhynchus affinis.

Number.	Collection.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
598	B. & A.	Cowley Bay, East Albemarle Island.	Aug. 10, 1891	2.75	1.70	.57	.30	.30	.40	.90	.55
641	B. & A.	.....do.....	.....do.....	2.58	1.52	.57	.29	.30	....	.80	.55
		Average.....	.....	2.66	1.61	.57	.30	.30	.40	.85	.55

CAMARHYNCHUS HABELI, Sclater and Salvin.

(Plate LVI, fig. 13.)

Camarhynchus habeli, SCLATER and SALVIN, Proc. Zool. Soc., 1870, pp. 323, 325, fig. 3 (part: Abingdon Island, Galapagos Archipelago); Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 490, pl. XXXVI (part: Abingdon Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 17 (part: Abingdon Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 110 (Abingdon Island).

Specific characters.—Bill large, very deep (depth at base equal to or greater than distance from nostril to tip of maxilla), compressed, with culmen strongly arched and gonydeal angle prominent; culmen (in adult male), 0.60 or more; wing, 2.60 or more; adult male with head, neck, and chest grayish black.

Range.—Galapagos Archipelago: Abingdon Island (Habel, *Albatross*).

Adult male.—No. 116130, U.S.N.M.; Abingdon Island, Galapagos, April 16, 1888. Head, neck, and chest dull grayish black, more or less broken by indistinct grayish olive margins to feathers on pileum, pale grayish buffy broad lateral edges to chest feathers, and slight admixture of the same on upper throat; upper parts olive, the feathers of the back with indistinctly darker centers; wings and tail dusky, with olive edgings, those of the middle and greater wing-coverts broader and wood brown in hue; under parts, posterior to chest, plain pale buffy or dull cream color, shaded with pale olive on sides and flanks; bill entirely black; legs and feet brownish black. Length (skin), 5.15; wing, 2.75; tail, 1.73; culmen, 0.62; gonys, 0.31; basal width of mandible, 0.32; basal height of bill, 0.42; tarsus, 0.90; middle toe, 0.61.

Adult female.—Gray above, whitish beneath, the head, etc., without any black.[1] "Similar to *C. psittaculus*, but smaller. Total length, 4.4 inches; culmen, 0.6; wing, 2.7; tail, 1.5; tarsus, 0.85." (Sharpe.)

Of this form I have seen only two specimens, both adult males, one of which is described above. The other (No. 116131, same data) does not differ in coloration, but is somewhat smaller, its measurements being as follows: Length (skin), 4.65; wing, 2.68; tail, 1.63; culmen,

[1] Salvin, Proc. Zool. Soc., 1870, pp. 323, 325 (translation).

0.62; gonys, 0.32; basal width of mandible, 0.31; basal depth of bill, 0.42; tarsus, 0.89; middle toe, 0.58.

CAMARHYNCHUS BINDLOEI, Ridgway.

Camarhynchus habeli (part), SCLATER and SALVIN, Proc. Zool. Soc., 1870, pp. 323, 325 (Bindloe Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 490 (Bindloe Island).—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 17 (Bindloe Island).

Camarhynchus bindloei, RIDGWAY, Proc. U. S. Nat. Mus. XVIII, No. 1067, April 23, 1896, p. 294 (Bindloe Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *C. habeli*, Sclater and Salvin, of Abingdon Island, but rather larger, with decidedly larger bill, the latter with culmen much less compressed.

Range.—Galapagos Archipelago: Bindloe Island (Habel; Baur and Adams).

Adult male.—Type, in collection of Dr. G. Baur; Bindloe Island, Galapagos, September 5, 1891. Head, neck, and upper chest uniform dull black, the feathers of the occiput and hind neck with obsolete margins of grayish olive, and those of the throat and chest indistinctly fringed with a paler tint of the same; rest of upper parts plain olive, becoming lighter and tinged with buffy on the rump; wings and tail grayish dusky, the feathers margined with grayish olive (lighter and more buffy on primaries), the wing coverts with broad margins of deep olive-grayish, instead of buffy brown or wood brown, as in *C. habeli;* lower chest with feathers blackish centrally broadly margined with pale buff-yellowish, producing a spotted or somewhat squamate appearance; rest of under parts pale buff-yellowish, washed with buffy olive on sides and flanks, the crissum more buffy; under wing-coverts mainly white, deepening into light olive-grayish along edge of wing, this becoming darker and forming a rather distinct patch on the carpo-metacarpal region. Maxilla deep brown, obsoletely streaked with blackish, the terminal portion also chiefly blackish; mandible clouded with lighter brown and dusky, the latter chiefly on lower basal portion; legs and feet blackish brown. Length (skin), 4.50; wing, 2.92; tail, 1.82; culmen, 0.68; gonys, 0.31; width of mandible at base, 0.33; depth of bill at base, 0.45; tarsus, 0.85; middle toe, 0.60.

Immature male.—Same collection, locality, etc. Similar to the adult female of *C. psittaculus*, but bill longer and relatively narrower. Above light olive, the feathers of the pileum with rather distinct darker mesial streaks and those of the back with broader and much less distinct streaks, the general color becoming lighter and more buffy on the rump; wings and tail dusky olive-grayish, the feathers margined with paler, these margins broader and more buffy on wing-coverts, those on the middle coverts chiefly terminal, producing a rather broad and distinct band. Face and under parts pale buff yellowish, faintly shaded

with pale olive-brownish on sides and flanks. Maxilla light tawny, darker and more brownish terminally, especially on culmen; mandible lighter, approaching ochraceous-yellow; legs and feet grayish black. Length (skin), 4.60; wing, 2.68; tail, 1.78; culmen, 0.67; gonys, 0.32; width of mandible at base, 0.33; depth of bill at base, 0.42; tarsus, 0.88; middle toe, 0.63.

Adult female?.—Same collection, etc. Similar to the supposed immature male, but rather darker and much grayer above, with dark streaks on pileum broader and lighter, margins of wing-coverts light brownish gray on middle row and faintly buffy grayish on greater series; under parts much less yellowish, the color being buffy white, tinged with pale brownish laterally, where very obsoletely streaked (rather broadly) with pale brownish gray; bill not quite so bright in color. Length (skin), 4.45; wing, 2.65; tail, 1.65; culmen, 0.64; gonys, 0.33; width of mandible at base, 0.34; depth of bill at base, 0.44; tarsus, 0.90; middle toe, 0.62.

Another supposed adult female in Dr. Baur's collection is similar in color to the one described except that the whitish of the face and under parts is slightly more yellowish. It is also slightly larger, its measurements being as follows: Wing, 2.73; tail, 1.70; culmen, 0.68; gonys, 0.32; width of mandible at base, 0.34; depth of bill at base, 0.44; tarsus, 0.87; middle toe, 0.61.

The specimens above described were skinned from alcohol, and it was found impossible to determine their sex, having been eviscerated before their preservation. It is therefore possible that the supposed immature male is in reality an immature female. It certainly is not a very young bird. That the other two are adult females I think there can be no reasonable doubt.

This bird is so closely related to *C. habeli* of Abingdon Island, that I have hesitated long before separating it; but the decidedly broader culmen and somewhat different shape of the bill and the slight, though apparently constant, color-characters mentioned seem to warrant its recognition as a local form.

Comparative measurements of Camarhynchus habeli and C. bindloei.

CAMARHYNCHUS HABELI.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
116130	U. S.	Adult male ...	Abingdon Island.	Apr. 16, 1888	2.75	1.73	.62	.42	.31	.32	.90	.61
116131	U. S.	.....do	....do	.....do	2.68	1.63	.62	.42	.32	.31	.89	.58
			Average	.....	2.74	1.68	.62	.42	.31+	.31+	.89+	.60+

Comparative measurements of Camarhynchus habeli and C. bindloei—Continued.

CAMARHYNCHUS BINDLOEI.

.....	B.& A.	Adult male....	Bindloe Island.	Sept. 5, 1891	2.92	1.82	.68	.45	.31	.33	.85	.60
.....	B.& A.	Immature male	.....do ...	....do	2.68	1.78	.67	.42	.32	.33	.88	.63
			Average	.....	2.80	1.75	.67+	.44+	.31+	.33	.87+	.62+
.....	B.& A.	Adult female?.	Bindloe Island.	Sept. 5, 1891	2.73	1.70	.68	.44	.32	.34	.87	.61
.....	B.& A.	Adult female..	.....do ...	....do	2.65	1.65	.64	.44	.33	.34	.90	.62
			Average	.....	2.68	1.68+	.66	.44	.32+	.34	.88+	.61+

CAMARHYNCHUS COMPRESSIROSTRIS, Ridgway.

(Plate LVI, fig. 12.)

Camarhynchus compressirostris, RIDGWAY, Proc. U. S. Nat. Mus., XVIII, No. 1067, April 23, 1896, p. 294 (Jervis Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—(Adult male unknown.) Adult female similar to that of *C. psittaculus*, Gould, but smaller, with the bill much narrower, more compressed, and with straighter culmen; basal width of mandible less than length of gonys instead of greater, and basal depth of bill less than length of maxilla from nostril. Wing less than 2.60; culmen (from extreme base), 0.60; basal depth of bill, 0.40.

Range.—Galapagos Archipelago: Jervis Island (Baur and Adams).

Adult female.—Type, No. 471, collection of Dr. G. Baur; Jervis Island, Galapagos, August 8, 1891. Above light olive (less grayish than in *C. psittaculus*, more so than in *C. incertus*) the pileum obsoletely streaked and the back spotted with darker; wings and tail dusky grayish brown, the feathers with light buffy olive margins, the middle and greater wing-coverts broadly tipped (the former sharply) with pale brownish buff; face and under parts very pale yellowish buff, tinged with pale olive-brown on sides and flanks, where obsoletely streaked (broadly) with grayish olive-brown; under wing-coverts white tinged with pale buff, most strongly toward edge of wing. Maxilla pale cinnamon-brown, with terminal portion of culmen dusky; mandible paler, inclining to brownish buff; "iris very dark brown;" legs and feet blackish brown. Length (skin), 4.25; wing, 2.57; tail[1]; culmen, 0.60; gonys, 0.32; width of mandible at base, 0.29; depth of bill at base, 0.40; tarsus, 0.90; middle toe, 0.60.

While very closely resembling the female of *C. psittaculus* in general appearance, the decidedly shorter wing and very different proportions of the bill will serve to readily distinguish it from that form.

[1] Rectrices only partly grown out.

CAMARHYNCHUS PAUPER, Ridgway.

(Plate LVI, fig. 11.)

Camarhynchus pauper, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890. p. 111 (Charles Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar in form and coloration to *C. prosthemelas*, Sclater and Salvin, but very much larger. Wing, 2.70–2.85; tail, 1.65–1.70; culmen, 0.50–0.58; basal depth of bill, 0.35; tarsus, 0.85–0.96.

Range.—Galapagos Archipelago: Charles Island (*Albatross*).

Adult male.—No. 125968, U.S.N.M.; Charles Island, Galapagos, April 1, 1891; C. H. Townsend. Top of head and hind neck dull blackish brown, indistinctly streaked with grayish olive; sides of head nearly plain grayish olive, more dusky on cheeks; throat and chest dull black, broken by occasional streaks of pale olive-buff, this color predominating on chin; rest of under parts very pale olive-buff, inclining to white, the whole breast broadly streaked with blackish, these streaks continued backward over sides to flanks, both the latter being light buffy olive laterally; under tail-coverts decided pale buff. Upper parts olive, lighter on rump, the feathers of the dorsal tract much darker centrally, forming very broad but rather indistinct dusky streaks. Bill entirely deep black; legs and feet brownish black. Length (skin), 4.50; wing, 2.75; tail, 1.68; culmen, 0.55; gonys, 0.30; bill from nostril, 0.38; tarsus, 0.90; middle toe, 0.57.

An adult male in more abraded plumage (No. 125969, U.S.N.M.; Charles Island, April 1, 1891; C. H. Townsend) differs from that described above as follows:

Head, all round, nearly uniform brownish black, passing into dusky grayish brown on hind neck, and this into plain dusky olive on dorsal region; black of throat and chest much more abruptly defined against the buffy whitish of the breast, the latter with far fewer and less distinct streaks, the sides and flanks not streaked at all. Otherwise, the coloration is the same. Length (skin), 5; wing, 2.85; tail, 1.70 (much worn); culmen, 0.58; gonys, 0.30; bill from nostril, 0.38; tarsus, 0.96; middle toe, 0.60.

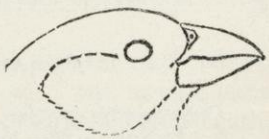


Fig. 7. Head of *Camarhynchus pauper*. (Type.)

Adult female.—Type, No. 115913, U.S.N.M.; Charles Island, Galapagos, April 8, 1888; U. S. S. *Albatross*. Above olive, the feathers of the head and back slightly darker centrally, the olive color paler on the the rump; wings and tail dull grayish dusky with lighter olive-grayish edgings, these dull buffy on middle and greater wing-coverts; supraloral space and malar region pale dull grayish buffy; chin and throat similar but paler and more grayish; rest of under parts pale buffy fading into nearly white on belly; sides and flanks tinged with grayish olive, and chest very faintly flammulated with the same. Bill wholly grayish

black; legs and feet dusky brown. Length (skin), 4.60; wing, 2.70, tail, 1.65; culmen, 0.50; gonys, 0.30; bill from rictus, 0.50; depth at base, 0.35; tarsus, 0.85; middle toe, 0.58.

The relationships of this species are evidently with *C. prosthemelas* rather than *C. psittaculus* and allied forms, the bill being even more compressed and elongated. In coloration, the adult males resemble them about equally, there being no material difference between the various species of the group.[1]

The adult female most resembles that of *C. prosthemelas*, but has the chest and sides darker (distinctly brownish buffy), the former without distinct streaks, at least in the single specimen examined.

An immature bird of undetermined sex (No. 52401, U.S.N.M.; Charles Island; received from Professor Sundevall) is darker and browner above than the adult female described above, has the under parts paler with distinct dusky streaks on the chest, and has the bill light colored (maxilla light brown, mandible pale dull buffy).

Measurements of Camarhynchus pauper.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
125968	U. S.	Adult male ...	Charles Island.	Apr. 1, 1891	2.80	1.70	.58	.30	.30	.37	.91	.60
125969	U. S.	.....do	.....do	.....do	2.85	1.73	.58	.30	.29	....	.91	.63
			Average.		2.83+	1.72+	.58	.30	.29+	.37	.91	.62+
115913	U. S.	Adult female .	Charles Island.	Apr. 8, 1888	2.69	1.58	.57	.29	.28	.35	.85	.60

CAMARHYNCHUS INCERTUS, Ridgway.

Camarhynchus incertus, RIDGWAY, Proc. U. S. Nat. Mus., XVIII, No. 1067, April 23, 1896, p. 294 (James Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Adult male unknown. Adult female most like that of *C. compressirostris*, Ridgway, of Jervis Island, but smaller (the bill especially), with upper parts brighter olivaceous and under parts distinctly yellowish buff. Similar in color to *C. salvini*, Ridgway, of Chatham Island, but much larger. Wing, 2.50; tail, 1.50; culmen, 0.53; tarsus, 0.82.

Range.—Galapagos Archipelago (James Island, Baur and Adams).

Adult female.—Type, No. 521, collection of Dr. G. Baur; James Island, Galapagos, August 13, 1891. Above bright buffy olive, the pileum rather distinctly streaked with grayish dusky, the back and scapulars more obsoletely and broadly streaked or spotted with the same, entirely

[1] Excepting possibly *C. salvini*, of which I have never seen a black-headed male.

uniform posterior to the back, the color lighter and more distinctly buffy on the lower rump; wings and tail dusky grayish brown, the feathers with distinct lighter margins (very narrow, and pale olive-gray on the primaries), the middle and greater coverts tipped with dull buff, forming two fairly distinct bands.[1] A superciliary stripe (disappearing above the ear coverts), and general color of under parts pale yellowish buff, shaded with brownish along the sides and flanks, where obsoletely streaked (most distinctly on flanks) with dusky olivaceous; under wing-coverts white, tinged, especially along edge of wing, with pale cream-yellow. Maxilla light cinnamon with dusky tip; mandible very pale brownish buffy; "iris dark brown;" legs and feet blackish brown. Length (skin), 4.30; wing, 2.50; tail, 1.50; culmen, 0.53; gonys, 0.29; width of mandible at base, 0.29; tarsus, 0.82; middle toe, 0.57.

The bird described above is absolutely similar in plumage to *C. salvini*, of Chatham Island, but is nearly as large as *C. compressirostris*. Were these two species found together on the same island, I would be disposed to consider the present bird a hybrid; but manifestly this can not be the case. It is possible that a larger series of specimens would run *C. compressirostris* and *C. incertus* together, in which case there would be another form common to the two islands of James and Jervis; but for the present I have to consider them as different.

CAMARHYNCHUS SALVINI, Ridgway.

(Plate LVI, fig. 9.)

Camarhynchus prosthemelas (nec SCLATER and SALVIN), SUNDEVALL, Proc. Zool. Soc., 1871, p. 125, part (Chatham Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 110, part (Chatham Island).

Camarhynchus salvini, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 364 (Chatham Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *C. prosthemelas*, Sclater and Salvin, of James, Indefatigable and Charles islands, etc., but larger, more strongly tinged with buffy yellow and more extensively streaked beneath, the adult male apparently without any black on head, neck or chest. Wing, 2.45–2.63; tail, 1.45–1.58; culmen, 0.48–0.52; tarsus, 0.81–0.88.

Range.—Galapagos Archipelago: Chatham Island (Kinberg, Townsend, Baur and Adams).

Adult (?) male (worn plumage).—Type, No. 125977, U.S.N.M.; Chatham Island, Galapagos, March 30, 1891; C. H. Townsend. Above, including pileum, dusky olive, the feathers with lighter olive edges, producing an indistinctly streaked appearance; rectrices edged with more yellowish olive; under parts dull buffy whitish, the chest, sides, and flanks streaked with dusky (most distinct on chest, least so on flanks, where

[1] The molt is nearly complete, but a few of the outermost greater wing-coverts belong to the unmolted plumage. These old feathers, perhaps representing an immature dress, corresponding to that described under *C. psittaculus*, are margined both laterally and terminally with dull whitish, only very faintly tinged with buff.

the color of the streaks is nearly that of the back). Bill wholly deep black; legs and feet brownish black. Length (skin), 4.25; wing, 2.60; tail, 1.55; culmen, 0.52; gonys, 0.27; depth of bill at base, 0.25; tarsus, 0.88; middle toe, 0.57.

Adult (?) female (fresh plumage).—No. 125978, U.S.N.M.; same locality, etc. Above dark olive, the feathers margined with lighter, more buffy olive, the latter nearly uniform on rump and upper tail-coverts; under parts pale straw yellow, the chest, sides, and flanks broadly striped with dusky olive. Bill light brown, the mandible rather paler, especially underneath; legs and feet blackish brown. Length (skin), 4.05; wing, 2.48; tail, 1.45; culmen, 0.50; gonys, 0.25; depth of bill at base, 0.23; tarsus, 0.85; middle toe, 0.53.

Young male.—No. 98, collection of Dr. G. Baur, Chatham Island, June 22, 1891. Similar to the adult (?) female, as described above, but upper parts rather more distinctly streaked with darker, especially on pileum, and under parts brighter buff-yellow, with dusky streaks narrower, very distinct only on chest; superciliary region conspicuously light yellowish buff; bill light buffy cinnamon, the mandible paler. Length (skin), 4.20; wing, 2.63; tail, 1.58; culmen, 0.50; gonys, 0.25; basal width of mandible, 0.28; basal depth of bill, about 0.32;[1] tarsus, 0.81; middle toe, 0.55.

Young female.—No. 53, collection of Dr. G. Baur, Chatham Island, June 16, 1891. Similar to the young male, as described above, but upper parts more buffy olive, with darker streaks on pileum, etc., less distinct, and under parts without distinct streaks, even on chest. Length (skin), 3.90; wing, 2.45; tail, 1.50; culmen, 0.48; gonys, 0.25; basal width of mandible, 0.26; basal depth of bill, 0.32; tarsus, 0.82; middle toe, 0.54.

It may be that the fully adult male of this species has the head and chest blackish, as in *C. prosthemelas*, *C. pauper*, and other forms.

In addition to the eleven specimens in the National Museum collection, procured by Mr. C. H. Townsend, naturalist of the United States Fish Commission Steamer *Albatross*, Dr. Baur's collection contains seven examples from the same island.

Measurements of Camarhynchus salvini.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
125973	U. S.	Adult male? ..	Chatham Island ..	Mar. 30, 1891	2.52	1.55	.50	.35	.25	.28	.89	.56
125974	U. S.	Adult male ...	....do	.....do	2.56	1.58	.55	.35	.28	.27	.88	.58
125975	U. S.	.....do	....do	.....do	2.49	1.52	.50	....	.25	.28	.85	.53
125976	U. S.	.....do	....do	.....do	2.50	1.50	.50	.34	.25	.28	.85	.50
125977	U. S.	.....do	....do	.....do	2.58	1.55	.52	.35	.27	.27	.88	.54
			Average	.....	2.53	1.54	.51	.35	.26	.28	87	.54
125978	U. S.	Adult female.	Chatham Island ..	Mar. 30, 1891	2.49	1.48	.50	.35	.25	.28	.87	.55

CAMARHYNCHUS PROSTHEMELAS, Sclater and Salvin.

(Plate LVI, fig. 10.)

Camarhynchus prosthemelas, SCLATER and SALVIN, Proc. Zool. Soc., 1870, pp. 323, 325, fig. 4 (Indefatigable Island, Galapagos Archipelago); Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 490.—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 17 (Indefatigable and James islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 110 (part: Charles and James islands).

Specific characters.—Smallest species of the genus (wing not exceeding 2.55).

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams); Charles Island (Kinberg, Townsend, Baur and Adams); Indefatigable Island (Habel, Baur and Adams); Jervis Island (Baur and Adams); James Island (*Albatross*, Baur and Adams).

Adult male.—No. 115909, U.S.N.M.; Charles Island, Galapagos, April 8, 1888; C. H. Townsend. Head, neck, and chest uniform black, ending abruptly beneath in a convex outline; rest of under parts plain buffy white, tinged with olive-gray laterally; rest of upper parts olive, the feathers of the back with indistinct darker centers; remiges and rectrices dusky, margined with grayish olive, the edges of the outermost primaries approaching grayish white. Bill, legs, and feet entirely black. Length (skin), 3.85; wing, 2.50; tail, 1.50; culmen, 0.45; gonys, 0.22; depth of bill at base, 0.30; tarsus, 0.93; middle toe, 0.55.

Adult male (in worn plumage).—No. 125970, U.S.N.M.; same locality and collector, April 1, 1891. Essentially similar to the specimen described above, but black of anterior lower parts not extending farther backward than fore neck, the chest being whitish, broadly streaked with dusky; upper parts, posterior to pileum, plain dusky olive-grayish. Length (skin), 4; wing, 2.55; tail, 1.57; culmen, 0.45; gonys, 0.22; tarsus, 0.79; middle toe, 0.51.

Immature male.—No. 116010, U.S.N.M.; James Island, April 11, 1888; C. H. Townsend. Pileum and hind neck dusky, the feathers very indistinctly edged with grayish olive; rest of upper parts dull grayish olive, the feathers of back dusky centrally; under parts (including throat, etc.) dull grayish white, tinged with pale yellowish buff, passing into pale olive-brownish on sides and flanks, the chest and sides of breast streaked with dusky. Otherwise as in adult male. Length (skin), 4.15; wing, 2.52; tail, 1.60; culmen, 0.45; gonys, 0.21; depth of bill at base, 0.30; tarsus, 0.78; middle toe, 0.58.

Young male.—No. 421, collection of Dr. G. Baur; Indefatigable Island, August 5, 1891. Above rather light olive-gray, becoming paler and tinged with buffy on rump, the pileum and hind neck broadly and distinctly streaked with dusky, and feathers of the back and scapulars with a large, sharply defined central spot of the same; wings and tail dusky, the feathers margined with light olive-grayish, paler and

more buffy on middle and greater wing-coverts; under parts white, very faintly tinged with pale buffy, shaded on sides and flanks with pale brownish buffy, and sparsely streaked across chest and along sides with dusky olive-grayish. Bill pale cinnamon-brown, the mandible lighter and more buffy. Length (skin), 3.70; wing, 2.42; tail, 1.57; culmen, 0.45; gonys, 0.20; basal width of mandible, 0.25; basal depth of bill, 0.31; tarsus, 0.79; middle toe, 0.52.

Adult female.—No. 460, collection of Dr. G. Baur; Indefatigable Island, August 7, 1891. Similar to the young male described, but dusky streaks of pileum and hind neck and spots on dorsal region very much less distinct, the upper surface in general being nearly plain light buffy olive-grayish. Length (skin), 3.70; wing, 2.40; tail, 1.45; culmen, 0.46; gonys, 0.22; basal width of mandible, 0.27; basal depth of bill, 0.31; tarsus, 0.80; middle toe, 0.56.

Young female.—No. 457, collection of Dr. G. Baur; Indefatigable Island, August 7, 1891. Similar to the adult female, but more olivaceous and still more uniform above, and under parts strongly tinged with light brownish buffy, especially on chest, sides, and flanks, which are not obviously streaked. Length (skin), 3.70; wing, 2.37; tail, 1.43; culmen, 0.46; gonys, 0.24; basal width of mandible, 0.25; basal depth of bill, 0.32; tarsus, 0.80; middle toe, 0.50.

Although specimens have been examined from all the islands known to be inhabited by this species, adult males from only two of them, James and Charles, have been seen by me.[1] These do not differ so far as I can discover, and I am unable to detect any constant differences between the females and immature birds from the several islands.

Measurements of Camarhynchus prosthemelas.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Basal depth of bill.	Gonys.	Basal width of mandible.	Tarsus.	Middle toe.
115909	U. S.	Adult male	Charles Island	Apr. 8, 1888	2.51	1.60	.46	.32	.23	.27	.82	.55
125970	U. S.	.....do.....	.....do.....	Apr. 1, 1891	2.55	1.60	.45	.32	.22	.24	.77	.53
125971	U. S.	Immature male.	.....do.....	.....do.....	(2.30)	(1.43)	.44	.32	.23	.26	.78	.53
			Average.....		2.53	1.60	.45	.32	.23	.26	.79	.54+
116007	U. S.	Adult male	James Island.	Apr. 11, 1888	2.37	1.52	.41	.31	.21	.25	.79	.50
116008	U. S.	.....do.....	.....do.....	.....do.....	2.49	1.45	.41	.31	.22	.27	.79	.52
116009	U. S.	.....do.....	.....do.....	.....do.....	2.50	1.55	.43	.32	.21	.25	.81	.50
116010	U. S.	Immature male.	.....do.....	.....do.....	2.51	1.58	.45	.32	.22	.27	.80	.53
			Average.....		2.47	1.53+	.43+	.32	.22+	.26	.80	.51

[1] Specimens examined are as follows: Albemarle Island, 3 specimens (no adult males); James Island, 8 specimens (3 adult males); Jervis Island, 3 specimens (no adult males); Indefatigable Island, 7 specimens (no adult males); Charles Island, 4 specimens (2 adult males).

CAMARHYNCHUS PALLIDUS (Sclater and Salvin).

(Plate LVI, fig. 7.)

Cactornis pallida, SCLATER and SALVIN, Proc. Zool. Soc., 1870, pp. 323, 327 (Indefatigable Island, Galapagos Archipelago); Nom. Av. Neotr., 1873, p. 29.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 487.—SHARPE, Cat. Birds Brit. Mus., XII, 1888, p. 20 (Indefatigable Island).

? *Cactornis pallida*, SCLATER and SALVIN?, RIDGWAY, Proc. U. S. Nat. Mus., XII, 1890, p. 109 (James Island).

? *C*[*actornis*] *hypoleuca*, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 109, in text (James Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—(Adult male unknown.) Adult female and immature male and female closely similar in coloration and general dimensions to corresponding plumages of *C. psittaculus*, Gould, but bill very different in form, being slender and compressed, with its basal depth much less than the distance from the nostril to the tip of the maxilla, and the basal width of the mandible also much less than the length of the gonys. Culmen (from extreme base), 0.70–0.77; tarsus, 0.92–0.94.

Range.—Galapagos Archipelago: Indefatigable Island (Habel); Jervis Island (Baur and Adams); James Island (*Albatross*, Baur and Adams).

Immature male.—No. 115997, U.S.N.M; James Island, Galapagos, April 11, 1888; C. H. Townsend; type of *Cactornis hypoleuca*, Ridgway. Above plain light grayish olive, the pileum very indistinctly streaked with darker; wings dusky, with pale grayish olive edgings, the middle and greater coverts edged more broadly with dull buffy. A superciliary stripe (becoming obsolete above auriculars), suborbital and malar regions, and entire lower parts dull white tinged with pale buffy on under parts of the body, the under tail-coverts more decidedly so; sides of chest very indistinctly streaked with pale grayish. Bill pale yellowish brown (the mandible lighter and more yellowish), darker at tip; legs and feet blackish brown. Length (skin), 5.70; wing, 2.95; tail, 1.80; culmen, 0.77; gonys, 0.39; bill to rictus, 0.70; width of mandible at base, 0.31; depth of bill at base, 0.39; tarsus, 0.90; middle toe, 0.68.

Adult (?) *female.*—No. 552, collection of Dr. G. Baur; James Island, Galapagos, August 16, 1891. Similar to the immature male, as described above, but with very distinct and rather broad streaks of grayish olive on chest, sides, and flanks. Length (skin), 4.45; wing, 2.72; tail, 1.64; culmen, 0.70; gonys, 0.38; width of mandible at base, 0.30; depth of bill at base, 0.39?;[1] tarsus, 0.92; middle toe, 0.66.

An immature male from Jervis Island in Dr. Baur's collection (No. 469, August 8, 1891) is very similar to the James Island specimen described above, but is appreciably more olivaceous above, has the under parts distinctly tinged with pale buffy yellowish, and is slightly smaller, its measurements being as follows: Length (skin), about 4.80; wing,

[1] The bill is not tightly closed, and this measurement therefore only approximately correct.

2.82; tail, 1.85; culmen, 0.75 gonys, 0.39; width of mandible at base, 0.30; depth of bill at base, 0.38; tarsus, 0.93; middle toe, 0.65.

I am still somewhat doubtful whether the birds described above are really the *Cactornis pallida* of Sclater and Salvin, not having been able to compare them with a specimen from Indefatigable Island. The original description, the brevity of which renders it unsatisfactory, certainly does not agree well with any of the specimens examined, particularly in regard to the coloration of the under parts, which are described as being pale ochraceous, the under surface of the two James Island and single Jervis Island specimens being essentially white, very slightly tinged with buff-yellowish. Dr. Sharpe, however, in describing the same specimen, says that the under parts are "white, slightly washed with olive-yellow," which agrees very well with the specimens before me. There are also some slight discrepancies in measurements, which, however, may be the result of somewhat different methods of measuring.[1]

CAMARHYNCHUS PRODUCTUS, Ridgway.

(Plate LVI, fig. 8.)

Camarhynchus productus, RIDGWAY, Proc. U. S. Nat. Mus., XVII. No. 1007, Nov. 15, 1894, p. 364 (Albemarle Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *C. pallidus*, Sclater and Salvin, but smaller (the bill especially) and deeper colored. Culmen (from extreme base), 0.67–0.69; tarsus, 0.89–0.90.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams).

[1] The descriptions referred to are as follows:

(*a*) Original description:

"Supra olivaceo-fusca, alis caudaque obscure fuscis, dorso colore anguste limbatis; subtus pallide ochracea; tectricibus subalaribus et remigum marginibus internis albis; rostro pallide corneo, pedibus nigris; long. tota 4.7, alæ 2.7, c audæ 1.7, rostr a rictu 0.65, tarsi 0.9.

"Fem. *mari similis.*

"*Hab.*—Indefatigable Island.

"*Obs.*—Colore ab omnibus distincta, sed forsan avis haud adulta. Altamen mas et femina, specimina sola quæ nobis adsunt, vestitu omnino congruunt."

(*b*) Sharpe's description:

"*Male* (*? in seasonal plumage*).—General color above pale olive-brown, with ashy margins to the feathers; lesser wing-coverts like the back; median and greater wing-coverts brown, edged with whity brown, more broadly on the former series; primary-coverts and quills dark brown, edged with ashy olive or paler olive-brown on the secondaries; tail-feathers brown, margined with olive-brown; head a little duller than the back; lores, eyelid, and feathers below the eye whitish, tinged with olive-yellow; ear-coverts light olive-brown, with whitish shaft-lines; cheeks, throat, and under surface of body white, slightly washed with olive-yellow, with a few dusky streaks on the chest; flanks and sides of body pale fulvous-brown; under wing-coverts white, tinged with olive-yellow. Total length, 4.8 inches; culmen, 0.7; wing, 2.7; tail, 1.7; tarsus, 0.85.

"*Adult female.*—Similar to the male. Total length, 5 inches; culmen, 0.65; wing, 2.85; tail, 1.7; tarsus, 0.9."

Immature male.—Type, No. 404, collection of Dr. G. Baur; Albemarle Island, July 31, 1891. Above bright olive, without obviously darker centers to the feathers of the back, etc.; wings and tail grayish dusky, the feathers broadly margined with buffy olive, the primaries narrowly edged with light yellowish olive; lores dull whitish, the feathers with grayish bases; superciliary region (passing but little behind eyes) yellowish buffy, the cheeks similar but slightly paler; general color of under parts pale buff-yellowish, faintly tinged with olive across chest, and strongly washed with buffy brown on sides and flanks, where obsoletely but broadly streaked with a darker and more grayish shade. Maxilla brownish black, becoming horn brown along tomium; mandible horn brown, darker at tip; legs and feet blackish horn color; "iris dark brown." Length (skin), 4.80; wing, 2.90; tail, 1.80; culmen, 0.68; gonys, 0.32; width of mandible at base, 0.27; depth of bill at base, 0.33; tarsus, 0.90; middle toe, 0.61.

Immature (?) female.—No. 367, collection of Dr. G. Baur; Albemarle Island, July 23, 1891. Essentially similar to the male, as described above, but upper parts more buffy olive, under parts wholly clear light buff-yellowish (the flanks only very obsoletely streaked with darker), and bill much lighter colored, the maxilla pale cinnamon and the mandible buffy whitish, both tipped with dusky brown; legs and feet dark brown. Length (skin), 4.50; wing, 2.70; tail, 1.70; culmen, 0.67; gonys, 0.33; width of mandible at base, 0.28; depth of bill at base, 0.34; tarsus, 0.89; middle toe, 0.60.

Another specimen (skinned from alcohol and therefore slightly different in color, being whiter beneath and duller olive above) measures as follows: Wing, 2.65; tail, 1.58; culmen, 0.69; width of mandible at base, 0.28; depth of bill at base, 0.31; tarsus, 0.90; middle toe, 0.60.

The type specimen, besides having a much darker bill, shows several distinct oblique sulcations on the sides of the mandible.

Family ICTERIDÆ.

Genus DOLICHONYX, Swainson.

Dolichonyx, SWAINSON, Philos. Mag., I, June, 1827, p. 435. Type, *Fringilla oryzivora*, Linnæus.

Range.—Eastern North America, migrating to tropical America in winter. Galapagos Archipelago (accidental during migration).

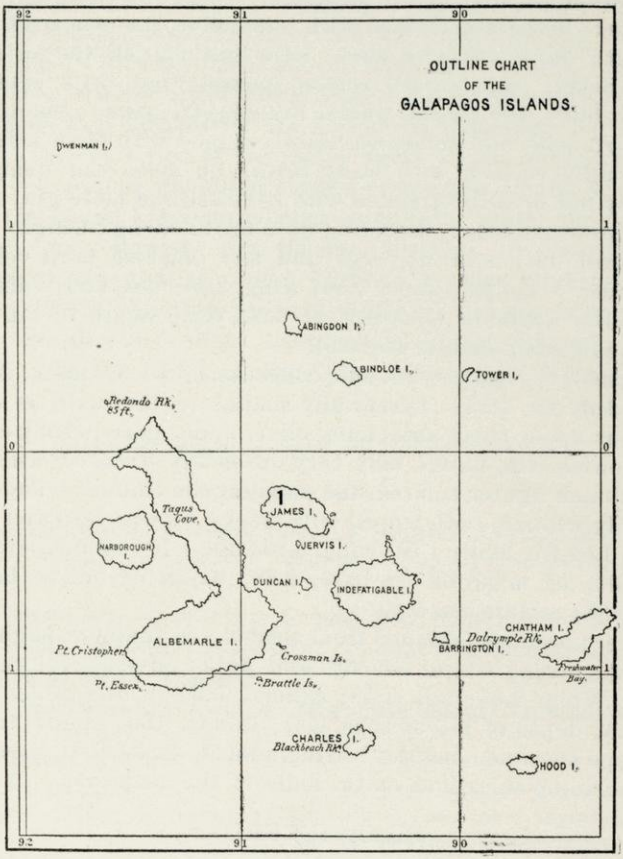
DOLICHONYX ORYZIVORUS (Linnæus).

Fringilla oryzivora, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 179.

Dolichonyx oryzivorus, SWAINSON, Zool. Jour., III, 1827, p. 351.—DARWIN, Zool. Voy. Beagle, III, Birds, 1841, p. 106 (James Island, Galapagos Archipelago).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 491 (James Island, Galapagos Archipelago).—BAIRD, BREWER, and RIDGWAY, Hist. N. Amer. Birds, II, 1874, p. 149.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 366.

Range.—Temperate North America east of the Rocky Mountains, breeding northward; in winter, West Indies and parts of eastern South America. Accidental in the Galapagos Archipelago (James Island, Darwin).

ASCERTAINED RANGE OF THE GENUS DOLICHONYX, SWAINSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Dolichonyx oryzivorus* (Linnæus).

Family TYRANNIDÆ.

Genus MYIARCHUS, Cabanis.

Myiarchus, CABANIS, Fauna Peruana, Aves, 1844–1846, p. 152. Type, *Muscicapa ferox*, Gmelin.

Range.—The whole of temperate and tropical America. Galapagos Archipelago (one peculiar species, constituting a peculiar subgenus).

Subgenus ERIBATES, Ridgway.

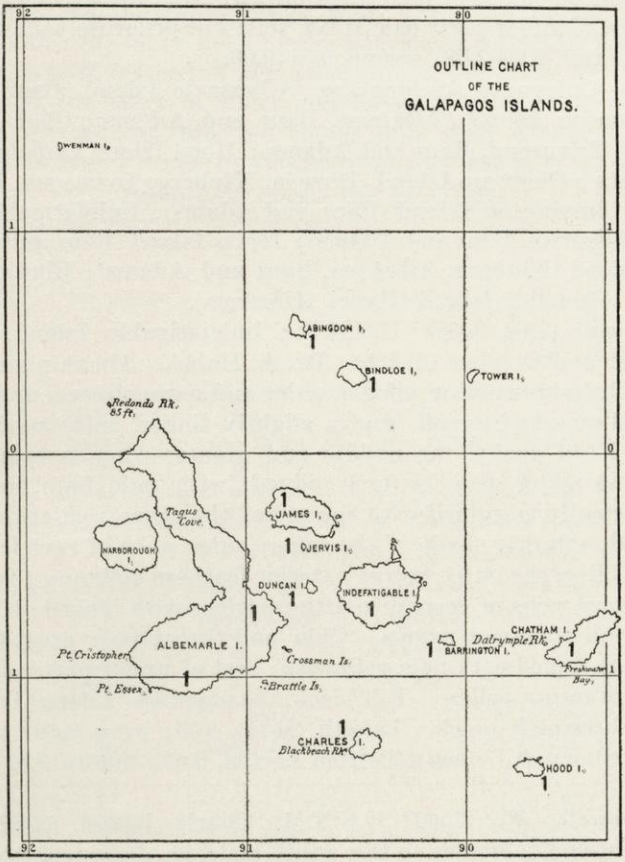
Eribates, RIDGWAY, Proc. U. S. Nat. Mus., XVI, No. 955, Oct. 5, 1893, p. 606. Type, *Myiobius magnirostris*, Gray.

Subgeneric characters.—Tarsus as long as the bill from the rictus; lateral outlines of bill not contracted terminally. Otherwise similar to the subgenus *Onychopterus*.[1]

[1] *Onychopterus*, Reichenbach, Av. Syst. Nat., 1850, pl. LXV. Type, *Tyrannus tuberculifer*, D'Orbigny and Lafresnaye.

Range.—Confined to the Galapagos Archipelago, where represented by a single species.

ASCERTAINED RANGE OF THE GENUS MYIARCHUS, CABANIS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Myiarchus magnirostris* (Gray).

MYIARCHUS MAGNIROSTRIS (Gray).

Myiobius magnirostris, Gray, in Zool. Voy. Beagle, III, Birds, 1841, p. 48 (Chatham Island, Galapagos Archipelago).

Tyrannula magnirostris, Gould, Zool. Voy. Beagle, III, Birds, 1841, pl. viii.

Myiarchus magnirostris, Sclater and Salvin, Proc. Zool. Soc., 1870, p. 323 (Indefatigable, Bindloe, and Abingdon islands).—Sundevall, Proc. Zool. Soc., 1871, pp. 125, 127 (Charles and James islands).—Salvin, Trans. Zool. Soc., IX, Pt. ix, 1876, p. 493 (Chatham, James, Indefatigable, Bindloe, and Abingdon islands).—Sclater, Cat. Birds Brit. Mus., XIV, 1888, p. 262 (Bindloe, Indefatigable, and Abingdon islands).—Ridgway, Proc. U. S. Nat. Mus., XII, 1889, p. 113 (Chatham, James, Indefatigable, Abingdon, Duncan, Hood, and Charles islands).

Empidonax magnirostris, Baird, Brewer, and Ridgway, Hist. N. Amer. Birds, II, 1874, p. 365.

Specific characters.—Above plain brown (varying from light olive-brown to deep grayish sepia), the wings and tail dusky with paler margins to the feathers (very pale on wing-coverts and tertials), the inner webs of rectrices (especially middle ones) more or less broadly edged with cinnamon-rufous or pale wood brown; chin, throat, and chest pale gray;[1] rest of under parts pale straw yellow or primrose yellow. Wing, 2.50–2.92; tail, 2.20–2.68; tarsus, 0.81–0.90.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams); Duncan Island (*Albatross*, Baur and Adams); Charles Island (Kinberg, Townsend, Baur and Adams); Hood Island (*Albatross*, Baur and Adams); Chatham Island (Darwin, Kinberg, Townsend, Baur and Adams); Barrington Island (Baur and Adams); Indefatigable Island (Habel, *Albatross*, Baur and Adams); Jervis Island (Baur and Adams); James Island (Kinberg, *Albatross*, Baur and Adams); Bindloe Island (Habel); Abingdon Island (Habel, *Albatross*).

Adult male.—No. 90554, U.S.N.M.; Indefatigable Island, between September and October 16, 1868; Dr. A. Habel. Above plain grayish olive, slightly browner on pileum, paler and more olivaceous on rump; upper tail-coverts broccoli brown, slightly tinged with wood brown; wings and tail dusky, the middle and greater wing-coverts broadly tipped (the latter also narrowly edged) with pale hair brown, the tertials broadly margined with the same; the other remiges narrowly edged with a darker shade of the same; outer webs of rectrices edged with pale olive, the outer web of exterior feathers inclining to pale hair brown; inner webs of second to fifth rectrices with inner half (approximately) dull cinnamon-rufous. Chin and throat pale gray, the chest similar, but tinged with pale yellowish; rest of under parts pale straw yellow or primrose yellow. Bill black, the mandible paler at base; legs and feet brownish black. Length (skin), 5.55; wing, 2.80; tail, 2.50; exposed culmen, 0.57; maxilla from nostril, 0.45; tarsus, 0.87; middle toe, 0.38.

Adult female.—No. 115922, U.S.N.M.; Charles Island, April 8, 1888; C. H. Townsend. Similar to the adult male, as described above, but upper parts darker and more uniform olivaceous, gray of chest less tinged with yellow, and with less cinnamon-rufous on inner webs of rectrices, this color being mainly confined to the fourth and fifth feathers, with more on the second. Length (skin), 5.80; wing, 2.72; tail, 2.50; exposed culmen, 0.55; maxilla from nostril, 0.43; tarsus, 0.83; middle toe, 0.40.

Young male.—No. 116132, U.S.N.M.; Abingdon Island, April 16, 1888; C. H. Townsend. Essentially like the adult, but wing-bars narrower and more yellowish, edges of remiges (except tertials and outermost primaries) light cinnamon, and with more cinnamon rufous on the tail, the inner webs of all the rectrices mainly of this color, except the outermost, on which it occupies nearly the inner half, all the rectrices except the outermost margined terminally with rusty.

[1] Intermediate between "smoke gray" and gray No. 8.

Although the series of 45 specimens examined exhibits some very perceptible variations in colors and dimensions, these appear to be chiefly of an individual character. Many of the specimens, however, are in worn or molting plumage, and the various islands are represented so unequally that the comparison can not be considered a satisfactory one. In the three adults from Abingdon Island (obtained April 16, 1888) the inner webs of the rectrices are broadly edged with pale pinkish buff, instead of cinnamon-rufous, but these were skinned from alcohol, the action of which may have extracted or destroyed the rufous color. At any rate, two young birds from Abingdon have as much and as bright rufous on the rectrices as those from other islands.

Measurements of Myiarchus magnirostris.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Bill from nostril.	Tarsus.	Middle toe.
116153	U. S.	Adult female.	Abingdon Island	Apr. 16, 1888	2.73	2.30	0.60	0.46	0.84	0.41
135694	U. S.	Adult.....	.....do	.....do	.....	.....	.58	.47	.87	.....
135695	U. S.	.....do	.....do	.....do	2.62	2.30	.55	.46	.83	.40
116012	U. S.	Adult female .	James Island	Apr. 11, 1888	2.73	2.45	.60	.45	.85	.45
116011	U. S.	.....do	.....do	.....do	.....	.....	.60	.45	.90	.40
116013	U. S.	.....do	.....do	.....do	2.65	2.45	....	.50	.84	.40
116014	U. S.	.....do	.....do	.....do	2.75	2.55	.58	.43	.83	.40
546	B. & A.	Adult male ...	.....do	Aug. 16, 1891	2.80	2.63	.58	..	.87	.35
541	B. & A.	.....do	.....do	.....do	2.70	2.43	.51	....	.87	.32
			Average	.....	2.71	2.44	.58	.46	.86	.39
484	B. & A.	Adult female .	Jervis Island	Aug. 8, 1891	2.70	2.55	.57	....	.87	.32
115896	U. S.	.....do	Duncan Island.....	Apr. 13, 1888	2.85	.....	.58	.45	.....	.....
125987	U. S.	.....do	.....do	Apr. 2, 1891	.....	.....	.57	.43	.83	.40
115894	U. S.	.....do	.....do	Apr. 13, 1888	.....	.....	.....	.41	.84	.39
115895	U. S.	.....do	.....do	.....do	2.68	2.38	....	.42	.85	.36
115897	U. S.	Adult male ...	.....do	.....do	.....	.....	.61	.45	.85	.40
			Average	.....	2.77	2.38	.57	.43	.84	.39
90554	U. S.	.....do	Indefatigable Island.	.....	2.80	2.50	.57	.45	.87	.....
116052	U. S.	.....do	.....do	Apr. 12, 1888	2.88	2.65	.54	.44	.90	.38
424	B. & A.	.....do	.....do	Aug. 5, 1891	2.71	2.58	.60	....	.83	.40
426	B. & A.	.....do	.....do	.....do	2.77	2.40	.56	....	.90	.38
427	B. & A.	.....do	.....do	.....do	2.78	2.62	.51	....	.81	.41
428	.....	.....do	.....do	.....do	2.80	2.58	.55	....	.82	.39
			Average	.....	2.79	2.55	.56	.45	.85	.39
115959	U. S.	.....do	Chatham Island	Apr. 5, 1888	2.72	2.45	.58	.45	.85	.38
115960	U. S.	Adult female.	.....do	.....do	2.50	2.20	.59	.43	.83	.38
125982	U. S.	.....do	.....do	Mar. 30, 1891	2.53	2.28	.52	.42	.82	.35
119	B. & A.	Adult male...	.....do	June 25, 1891	2.70	2.50	.58	....	.85	.35
α	B. & A.	.....do	.....do	June 13, 1891	2.74	2.36	.57	....	.81	.39
β	B. & A.	.....do	.....do	June 12, 1891	2.83	2.45	.58	....	.88	.40
γ	B. & A.	.....do	.....do	June 11, 1891	2.78	2.47	.58	....	.89	.35
			Average.....	.....	2.69	2.39	.57	.43	.85	.37
116079	U. S.	.....do	Hood Island.....	Apr. 7, 1888	2.92	2.60	.57	.47	.88	.41
116080	U. S.	Adult female.	.....do	.....do	2.75	2.58	.55	.43	.85	.40
149842	U. S.	Adult male...	.....do	.....do	2.88	2.61	.58	.49	.85	.....
149843	U. S.	Adult	.....do	.....do	2.74	2.50	.55	.46	.82	.....
149844	U. S.	.....do	.....do	.....do	2.70	2.53	.58	.46	.85	.40
149845	U. S.	.....do	.....do	.....do	2.87	2.60	.58	.45	.87	.43
149846	U. S.	.....do	.....do	.....do	2.87	2.55	.59	.48	.90	.....
			Average.....	.....	2.82	2.57	.57	.46	.86	.41
115921	U. S.	Adult female.	Charles Island	Apr. 8, 1888	2.90	2.68	.52	.45	.89	.40
115922	U. S.	.....do	.....do	.....do	2.72	2.50	.55	.43	.83	.40
125986	U. S.	Adult.....	.....do	Apr. 1, 1891	2.72	2.37	.55	.43	.87	.40
			Average.....	.....	2.78	2.52	.54	.44	.86	.40

Genus PYROCEPHALUS, Gould.

Pyrocephalus, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 44. Types, "*Pyrocephalus parvirostris* (Gould) and *Muscicapa coronata* (Auct?)."[1]

Range.—The whole of tropical and subtropical America, except West Indies, southern Florida, and parts of Central America. Galapagos Archipelago (several peculiar species or local forms).

KEY TO THE GALAPAGOS FORMS OF THE GENUS PYROCEPHALUS, GOULD.

a^1. Adult males with back, etc., very dark brown, sometimes almost black; larger. Wing, 2.27–2.60; tail, 1.94–2.20; exposed culmen, 0.40–0.50; tarsus, 0.70–0.76.

b^1. Adult males pure red beneath.

c^1. Adult females clear yellow beneath.

d^1. Adult female with under parts light naples yellow. (James Island.) 1. *P. nanus* (p. 572).

d^2. Adult female with under parts light chrome yellow or deep naples yellow; top of head more tinged with yellow; upper parts browner. (Indefatigable and Albemarle islands).....2. *P. intercedens* (p. 575).

c^2. Adult females buff beneath. (Charles Island)....3. *P. carolensis* (p. 576).

b^2. Adult male orange-red beneath. (Abingdon Island; Bindloe Island?.) 4. *P. abingdoni* (p. 578).

a^2. Adult male with back, etc., lighter grayish brown; smaller. Wing, 2.08–2.37; tail, 1.80–2.05; exposed culmen, 0.35–0.42; tarsus, 0.62–0.73. (Chatham Island).....5. *P. dubius* (p. 579).

I am well aware of the very unsatisfactory character of the above key, but I have very few specimens at hand from which to construct it, Dr. Baur's larger series having been returned to him. Furthermore, the difference between the several forms is most obvious in the females, and of *P. abingdoni*, the only one excepting the very distinct *P. dubius*, in which the adult male is noticeably different, the female is still unknown.[2] With the exception of *P. dubius*, Gould, of Chatham Island, which is sufficiently distinct, in my opinion, to hold specific rank, the other forms may properly be considered as merely local races of *P. nanus*, more or less differentiated, the differentiation most marked in *P. carolensis* and *P. abingdoni*.

PYROCEPHALUS NANUS, Gould.

Pyrocephalus nanus, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 45, pl. VII (Galapagos Archipelago).—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (part) (James Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 112 (part) (James Island).

Specific characters.—Adult male with pileum and under parts uniform bright vermilion red, the sides of head and upper parts plain blackish

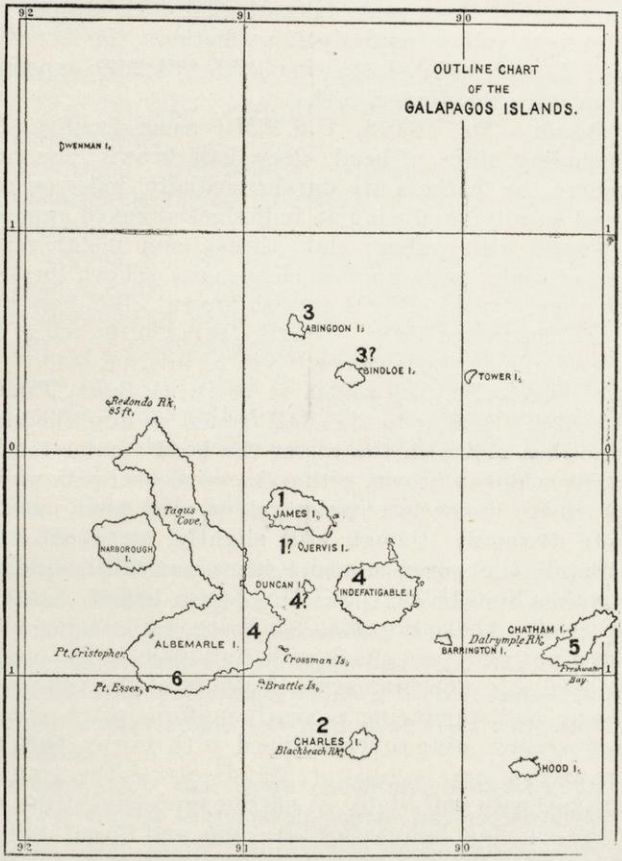
[1] = *Muscicapa rubina*, Boddært (1783), *M. coronata*, Gmelin (1788).

[2] The adult females whose measurements are given on page 579 were skinned from alcohol and have their coloration so radically changed that they are unfit for comparison in this respect. It may be remarked that the red of the adult males is wholly destroyed by the immersion in alcohol.

brown, the rectrices paler and more grayish, especially the lateral pair; adult female hair brown above, light naples yellow beneath, with chin and throat white.

Range.—Galapagos Archipelago: James Island (Darwin?, Kinberg, Townsend, Baur and Adams).

ASCERTAINED RANGE OF THE GENUS PYROCEPHALUS, GOULD, IN THE GALAPAGOS ARCHIPELAGO.



1. *Pyrocephalus nanus*, Gould.
2. *Pyrocephalus carolensis*, Ridgway.
3. *Pyrocephalus abingdoni*, Ridgway.
4. *Pyrocephalus intercedens*, Ridgway.
5. *Pyrocephalus dubius*, Gould.
6. (Undetermined form.)

Adult male.—No. 116015, U.S.N.M.; James Island, April 11, 1888; C. H. Townsend. Pileum intense poppy red, lighter and more scarlet anteriorly; rest of upper parts, together with a broad band along side of head (including lores, suborbital region, and auricular region) connecting with color of hind neck, plain dark sooty brown or clove brown, becoming rather lighter on wings and tail, especially the latter, the outermost rectrices rather pale brownish gray. Under parts rich scarlet-vermilion, paler (flesh pink) on throat and under tail-coverts, the chin whitish. Maxilla brownish black, mandible dark brown; legs

and feet black. Length (skin), 4.90; wing, 2.60; tail, 2.10; exposed culmen, 0.45; tarsus, 0.73; middle toe, 0.40.

Immature male (second year?).—No. 116017, U.S.N.M.; same locality, date, etc. Pileum mixed dark brown, orange-yellow, and poppy red, the latter chiefly on hinder part of crown; general color of rest of upper parts grayish sepia (much paler than in adult male); chin, throat, and upper chest white with a few pink feathers intermixed; rest of under parts mainly flesh pink, intermingled with deeper red (flame scarlet) and light yellow (naples yellow) feathers, the latter chiefly on the breast. Length (skin), 4.90; wing, 2.50; tail, 2.08; exposed culmen, 0.41; tarsus, 0.73; middle toe, 0.40.

Adult female.—No. 116018, U.S.N.M.; same locality, date, etc. Above, including sides of head, deep hair brown, less uniform on pileum, where the feathers are darker medially, paler on edges, and light colored basally, producing an indistinct streaked appearance, the forehead tinged with yellow; chin, throat, and malar region plain white; rest of under parts uniform clear maize yellow, the sides of the chest with a few streaks of light grayish brown. Bill, legs, and feet as in adult and immature male. Length (skin), 5.10; wing, 2.48; tail, 2.15; exposed culmen, 0.43; tarsus, 0.74; middle toe, 0.43.

Immature male.—No. 515, collection of Dr. G. Baur; James Island, August 13, 1891. Similar to the adult female, as described above, but decidedly darker, and with the top of the head similar to the back—that is, uniform dusky brown, with a few concealed yellowish spots in middle of crown; under parts paler yellow, very much paler on chest, where more distinctly (though still slightly) streaked with dusky. Wing, 2.45; tail, 2; exposed culmen, 0.40; tarsus, 0.70; middle toe, 0.40.

Young male.—No. 116019, U.S.N.M.; James Island, April 11, 1888; C. H. Townsend. Above brownish black or very dark blackish brown, the feathers narrowly margined with dull pale buffy, producing an indistinct squamate appearance, the feathers of the rump with broad tips of tawny buff, producing a nearly uniform patch of this color; middle and greater wing-coverts tipped with tawny buff, producing two rather narrow but very distinct bands across the wing; rectrices narrowly tipped with dull white. A narrow supraloral stripe, extending to above the eye, dull light yellowish; chin and throat dull yellowish white, tinged laterally with brownish gray; rest of under parts light naples yellow, the chest narrowly but distinctly streaked with dusky. Bill, legs, and feet colored as in adults.

Measurements of Pyrocephalus nanus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
116015	U. S.	Adult male	James Island	Apr. 11, 1888	2.60	2.10	0.45	0.73	0.40
563	B. & A.	do	do	Aug. 17, 1891	2.58	2.15	.40	.73	.42
116017	U. S.	Immature male	do	Apr. 11, 1888	2.50	2.08	.41	.73	.40
515	B. & A.	do	do	Aug. 13, 1891	2.45	1.85	.45	(.82)	.40
584	B. & A.	Adult female	do	Aug. 18, 1891	2.44	2.13	.40	.73	(.34)
116018	U. S.	do	do	Apr. 11, 1888	2.48	2.15	.43	.74	.43
			Average		2.51	2.07	.42	.73	.41

PYROCEPHALUS INTERCEDENS, Ridgway.

Pyrocephalus nanus (nec GOULD), SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (part: Indefatigable Island).—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (part: Indefatigable Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 492 (part: descriptions).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 112 (Indefatigable Island).

Pyrocephalus intercedens, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 366 (Indefatigable Island, Galapagos Archipelago; collection of Dr. G. Baur).

Specific characters.—Similar to *P. nanus*, Gould, of James Island, but female much brighter yellow beneath, browner above, and top of head more tinged with yellow.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams); Indefatigable Island (Darwin?, Kinberg, Habel, *Albatross*, Baur and Adams).

Adult male.—Type, No. 418, collection of Dr. G. Baur; Indefatigable Island, August 5, 1891. Pileum rich poppy red, the feathers paler beneath the surface and white basally; rest of upper parts, together with a band along side of head, involving lores, suborbital region and auricular region brownish black or very dark blackish brown. Chin, throat, and chest rich scarlet-vermilion, the remaining under parts more orange-red, or flame scarlet—all the feathers of the under parts white basally. Bill black, the mandible more brownish; legs and feet black. Wing, 2.58; tail, 2.18; exposed culmen, 0.47; tarsus, 0.75; middle toe, 0.38.

Adult female.—No. 439, collection of Dr. G. Baur; Indefatigable Island, August 6, 1891. Above deep hair brown, the pileum strongly tinged with yellow; superciliary stripe, extending from nostrils to posterior angle of eye (broadest anteriorly), light buff-yellowish; malar region, chin, and throat very pale maize yellow; rest of under parts light chrome, or deep naples yellow. Wing, 2.38; tail, 2; exposed culmen, 0.40; tarsus, 0.70.

Immature male.—No. 463, same collection; Indefatigable Island, August 7. Very similar to the adult female, but rather darker above; chin and throat white, faintly tinged with maize yellow; rest of lower parts rather deeper and decidedly "warmer" yellow than in the adult female (a very pale tint of "deep chrome"), rather paler on the chest, where marked with very narrow shaft-streaks of dusky. Wing, 2.52; tail, 2.05; exposed culmen, 0.45; tarsus, 0.71; middle toe, 0.40.

An immature male (No. 77764, U.S.N.M.; Indefatigable Island, August 25–October 16, Dr. A. Habel) is similar to that described above, but has the yellow of the chest equally deep with that of more posterior under parts (the whitish throat being thereby more abruptly defined) and the fine dusky streaks nearly obsolete. Wing, 2.40; tail, 2.02; exposed culmen, 0.45; tarsus, 0.70; middle toe, 0.39.

Young.—No. 116053, U.S.N.M.; Indefatigable Island, April 12; C. H.

Townsend. Above dark grayish brown, the feathers of the back, the scapulars, and the lesser wing-coverts narrowly and rather indistinctly margined with paler; those of the rump and upper tail-coverts much more broadly margined with brownish buff, which constitutes the prevailing color; top of head broadly streaked with dusky on a whitish and pale buffy ground, the forehead chiefly pale buffy; middle and greater wing-coverts broadly tipped with pale brownish buffy, producing two wing-bands; tail feathers also broadly tipped with pale dull buffy; remiges rather broadly margined at tips with whitish. Supraloral region, malar region, chin, and throat whitish, tinged with dull yellowish; rest of under parts light naples yellow, the chest, sides, and flanks longitudinally flecked with grayish brown.

An adult male in Dr. Baur's collection from Albemarle Island (No. 383, July 29) is quite identical in coloration with that described from Indefatigable Island. Wing, 2.51; tail, 2.07; exposed culmen, 0.43; tarsus, 0.70; middle toe, 0.40.

An adult male from North Albemarle (No. 499, August 10) is similar as to color of back, etc., but has the red of the pileum and chest more intense. Wing, 2.58; tail, 215; exposed culmen, 0.45; tarsus, 0.72; middle toe, 0.40.

Measurements of Pyrocephalus intercedens.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
418	B. & A.	Adult male ...	Indefatigable Island.	Aug. 5, 1891	2.50	2.12	0.43	0.76	0.37
463	B. & A.	.....do	.....do	Aug. 7, 1891	2.50	2.05	.44	.72	(.33)
77763	U. S.	.....do	.....do	.....	2.55	2.10	.45	.71	.40
77764	U. S.	Adult female.	.....do	.....	2.42	2.02	.44	.73	.41
439	B. & A.	.....do	.....do	Aug. 6, 1891	2.27	1.94	.40	(.80)	.33
			Average	.....	2.45	2.05	.43	.73	.38
383	B. & A.	Adult male ...	North Albemarle Island.	July 29, 1891	2.50	2.18	.44	(.85)	(.35)
499	B. & A.	.....do	.....do	.....do	2.60	2.04	.44	.72	.46
			Average	.....	2.55	2.11	.44	.72	.46

PYROCEPHALUS CAROLENSIS, Ridgway.

Pyrocephalus nanus (nec GOULD), SHARPE, Proc. Zool. Soc., 1877, p. 66 (Charles Island).—SALVIN, Proc. Zool. Soc., 1883, p. 424 (Charles Island).—SCLATER, Cat. Birds Brit. Mus., XIV, 1888, p. 214 (part: Charles Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889 (1890), p. 112 (Charles Island).

Pyrocephalus carolensis, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 365 (Charles Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *P. nanus*, Gould (from James Island), but female deep buff beneath, instead of clear light naples yellow, and upper parts browner.

Range.—Galapagos Archipelago: Charles Island (Darwin, Cookson, Townsend, Baur and Adams).

Adult male.—No. 115926, U.S.N.M.; Charles Island, April 8; C. H. Townsend. Lores, ear coverts, occiput, hind neck, and remaining upper parts uniform blackish brown,[1] becoming lighter, more grayish, brown on lower rump, upper tail-coverts, and tips of wing-coverts, the edges of the secondaries still paler, and tips of secondaries, innermost primaries, and tail-feathers pale grayish brown, passing on terminal margins into brownish white; outermost tail-feather pale grayish brown, its outer web slightly paler and faintly tinged with pink. Entire pileum glossy dark vermilion; lower parts scarlet-vermilion, paler posteriorly (flesh color on under tail-coverts), deepest on breast, and on throat somewhat broken by exposure of white bases of the feathers; under wing-coverts and axillars flesh color, the former mixed with dusky. Bill black, the mandible somewhat brownish basally; legs and feet black. Length (skin), 4.85; wing, 2.50; tail, 2; exposed culmen, 0.42; tarsus, 0.72; middle toe, 0.40.

Immature male.—No. 115927, U.S.N.M.; Charles Island, April 8; C. H. Townsend. Above dusky brown (very much paler than in adult), paler and grayer on rump and upper tail-coverts, many of the feathers of lower back and scapulars showing very indistinct and narrow paler tips; wings and tail as in the adult, but the former rather paler; forehead and fore part of crown whitish, tinged with flesh pink (especially near nostrils), each feather marked with a rather broad mesial streak of dusky brown, the hinder part of crown nearly uniform dusky, but the feathers light vermilion or flesh red beneath the surface. Lores and orbits dusky, the ear coverts paler and faintly tinged with flesh pink; chin, throat, and malar region white, very faintly tinged with flesh pink, especially on chin; rest of under parts flesh color, deepest on flanks, paler on chest and breast, where narrowly streaked with dusky. Bill and feet as in adult. Length (skin), 5; wing, 2.60; tail, 2.03; exposed culmen, 0.45; tarsus, 0.71.

Adult female.—No. 115928, U.S.N.M.; same date, etc. Above grayish olive, becoming gradually paler and more grayish (nearly "hair brown") on rump and upper tail-coverts; crown somewhat streaked with paler; forehead, superciliary region, and malar region whitish, tinged with buffy yellowish. Chin and throat buffy white; rest of under parts deep buff-yellow, the chest marked with a few very indistinct dusky streaks. Bill and feet as in the male. Length (skin), 4.80; wing, 2.50; tail, 2.05; exposed culmen, 0.48; tarsus, 0.70; middle toe, 0.40.

An adult male in more worn plumage (No. 125988, U.S.N.M.; Charles Island, April 1; C. H. Townsend) is, through fading, a more pronounced brown color above than the example described above. The two other adult females show no trace of streaks on the chest.

[1] A little darker and warmer than "clove brown."

Measurements of Pyrocephalus carolensis.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
115924	U. S.	Adult male	Charles Island	Apr. 8, 1888	2.57	2.03	0.47	0.70	0.37
115925	U. S.	do	do	do	2.65	2.05	.45	.72	.40
115926	U. S.	do	do	do	2.50	2.00	.42	.72	.40
125988	U. S.	do	do	Apr. 1, 1891	2.60	2.05	.47	.70	.43
115927	U. S.	Immature male	do	Apr. 8, 1888	2.60	2.03	.45	.71	.43
115928	U. S.	Adult female	do	do	2.50	2.05	.48	.70	.40
115929	U. S.	do	do	do	2.51	2.05	.45	.70	.44
			Average		2.55	2.04	.45	.71	.41

PYROCEPHALUS ABINGDONI, Ridgway.

Pyrocephalus nanus (nec GOULD), RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 112 (part) (Abingdon Island).

Pyrocephalus abingdoni, RIDGWAY, Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, p. 367 (Abingdon Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *P. carolensis*, Ridgway, of Charles Island, in color of back, etc., but red of under parts very different—flame scarlet or orange chrome instead of vermilion. (Female and young unknown.)

Range.—Galapagos Archipelago: ? Bindloe Island (Habel, Baur and Adams); Abingdon Island (Townsend).

Adult male.—Type, No. 116134, U.S.N.M.; Abingdon Island, Galapagos, April 16, 1888; C. H. Townsend. Pileum intense scarlet or scarlet-vermilion, paler, more orange-red, on forehead; entire under parts orange-red ("orange chrome"), the under tail-coverts paler, inclining to salmon color; ear-coverts, hind neck, back, etc., clove brown (very nearly same color as in *P. carolensis*). Length (skin), 4.95; wing, 2.55 (?); tail, 2.10 (?); exposed culmen, 0.48; width of bill at base, 0.23; tarsus, 0.75.

Another adult male (No. 116135, U.S.N.M.; same date, etc.) is similar, but has the pileum deeper red (intense vermilion) and the fore neck and chest slightly tinged with vermilion. Exposed culmen, 0.45; width of bill at base, 0.25; tarsus, 0.73. (Wing and tail too imperfect for measurement.)

An adult male from Bindloe Island in Dr. Baur's collection is similar in color of back, etc., to these Abingdon examples, but the under parts are very different, the anterior half being pure scarlet and the posterior half very abruptly pale saturn red. The bill is also extremely narrow. Whether the differences are of an individual character or characteristic of the locality can not be determined from only one specimen. Length (skin), 4.40; wing, 2.48; tail, 2.12; exposed culmen, 0.40; width of bill at base, 0.20; tarsus, 0.67.

Measurements of Pyrocephalus abingdoni.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
116134	U. S.	Adult male	Abingdon Island	Apr. 16, 1888	(2.55)	(2.10)	0.48	0.75	0.42
116135	U. S.	do	do	do	.....	.....	.45	.73	.41
135698	U. S.	do	do	do	(2.60)	(2.13)	.45	.77	.42
135699	U. S.	do	do	do	.....	.....	.48	.76	.....
135700	U. S.	do	do	do	(2.55)	.....	.45	.72	.43
149802	U. S.	do	do	do	.....	.....	.45	.70	.44
149803	U. S.	do	do	do	.....	.....	.48	.75	.....
149801	U. S.	Immature male	do	do	(2.50)	2.20	.48	.72	.....
149804	U. S.	Adult female	do	do	(2.48)	2.00	.50	.74	.43
149805	U. S.	do	do	do	(2.45)	(1.95)	.47	.70	.....
149806	U. S.	do	do	do	2.45	2.17	.49	.70	.45
149807	U. S.	do	no	do	.....	.....	.....	.74	.42
			Average		2.45	2.12	.47	.73	.43

PYROCEPHALUS DUBIUS, Gould.

Pyrocephalus dubius, GOULD, Zool. Voy. Beagle, Birds, 1841, p. 46 (Galapagos Archipelago).—RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1894, p. 368 (Chatham Island; descriptions, synonymy, etc.).

Pyrocephalus nanus (nec GOULD), AUCTORUM, part.

Pyrocephalus minimus, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 113, in text (Chatham Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Decidedly smaller than *P. nanus*, Gould, and other Galapagoan forms; adult male with lower parts conspicuously paler and duller red than pileum; back, etc., lighter and browner than in other forms; adult female with conspicuous superciliary stripe and under parts deep ochraceous-buff, the throat paler, but scarcely approaching white.

Range.—Galapagos Archipelago: Chatham Island (Darwin?, Townsend, Baur and Adams).

Adult male.—No. 72, collection of Dr. G. Baur; Chatham Island, June 18, 1891. Entire pileum glossy dark vermilion, exactly as in other forms; lower parts pale scarlet, deepest on breast, much paler on throat, and still more so on chin, which inclines to reddish white. Lores, ear coverts, and upper parts in general deep brown (intermediate between "seal" and "clove"), decidedly lighter and browner than in other forms; tips of wing-coverts, edges of secondaries, and whole of outer tail-feathers paler, more grayish, brown. Length (skin), 4.35; wing, 2.23; tail, 1.90; exposed culmen 0.38; tarsus, 0.65; middle toe, 0.35.

Nearly adult male.—Specimen marked "B," collection of Dr. G. Baur; Chatham Island, June 16. Much like the fully adult male, as described above, but red of pileum paler and mixed with many partly brown feathers, that of under parts very much paler (deep salmon color, very much paler on chin and throat), and upper parts decidedly lighter warm grayish brown. Wing, 2.28; tail, 2.05; exposed culmen, 0.36; tarsus, 0.65; middle toe, 0.35.

Adult female.—No. 63, collection of Dr. G. Baur; Chatham Island,

June 17. Forehead and broad superciliary stripe, extending from nostrils to occiput, ochraceous-buff; rest of pileum nearly same color, but broadly streaked with deep hair brown, these streaks so broad on hind part of crown as to nearly conceal the buffy edgings. Ear coverts, hind neck, back, scapulars, and lesser wing-coverts uniform hair brown, the rump, upper tail-coverts, and broad tips of greater and middle wing-coverts paler and tinged with buffy; secondaries edged for terminal half with pale buffy grayish, and broadly margined at tips with buffy grayish white. Malar region, chin, and throat pale buff, deeper laterally; rest of under parts deep buff, becoming rather clearer and brighter posteriorly, and everywhere devoid of the least trace of streaks. Length (skin), 4.25; wing, 2.21; tail, 1.88; exposed culmen, 0.38; tarsus, 0.65; middle toe, 0.32.

Immature male.—No. 123, collection of Dr. G. Baur; Chatham Island, June 25. Much like the adult female, as described above, but top of head nearly uniform grayish brown, like back, though showing indistinctly defined broad streaks of darker and lighter, with a few concealed bright yellow spots on center of crown; anterior part of forehead and superciliary stripe, however, deep buffy, as in the female; buff of under parts deeper and yellower. Length (skin), 4.25; wing, 2.30; tail, 1.92; exposed culmen, 0.39; tarsus, 0.63; middle toe, 0.38.

The adult male described is the brightest colored one in a series of eight, the remainder being more or less paler scarlet beneath. This conspicuous difference of intensity between the red of the pileum (which is exactly as in other forms) and that of the lower parts is, next to the small size, the most striking character of the present form.

Two other females in Dr. Baur's collection differ from that described in having an appreciable (though in case of one very faint) yellow tinge to the posterior under parts.

Another immature male, also in Dr. Baur's collection, is quite decidedly yellowish on the posterior lower parts, the under tail-coverts and malar region being nearly maize yellow.

There can be little doubt, I think, that Gould's *Pyrocephalus dubius* was based on a female or immature male of this form, but the question can be determined positively only by examination of the type, now in the British Museum. The original description certainly fits the female very well, and the measurements of the type, recently made for me by Dr. Sclater, indicate a very small bird; smaller, in fact, than the smallest in the series of sixteen specimens from Chatham Island.

Some of Dr. Sclater's measurements are materially different from those given by Gould, as the following will show. For convenience of comparison, the fractions of the latter are changed from duodecimals to decimals:

Measurements of Pyrocephalus dubius.

Authority.	Wing.	Tail.	Exposed culmen.	Tarsus.	Specimen.
Gould	2.26	1.77	.....	0.60	Type of *P. dubius*, Gould.
Sclater	2.15	1,60	0.40	.60	
Smallest female from Chatham Island.	2.20	1.80	.45	.62	No. 125989, U.S.N.M.

This very distinct form was separated by me, provisionally, from *P. nanus*, as *P. minimus*, in the paper above cited, without being described in detail. The fourteen specimens subsequently received bring out very strongly its distinctive characters, and show it to be very different indeed from *P. nanus* and its nearer allies, from which, in any plumage, specimens may be distinguished at a glance.

Measurements of Pyrocephalus dubius.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
115961	U. S.	Adult male	Chatham Island	Apr. 5, 1888	2.28	1.95	0.41	0.68	0.38
115962	U. S.	do	do	do			.40	.65	.39
125990	U. S.	do	do	Mar. 30, 1891	2.25	1.87		.67	.39
135664	U. S.	do	do	Apr. 4, 1888			.35	.67	.40
135665	U. S.	do	do	do	2.28	1.85		.68	.38
72	B. & A.	do	do	June 18, 1888	2.23	1.80	.39	.70	.36
93	B. & A.	do	do	June 20, 1888	2.29	2.02	.38	.72	.36
104	B. & A.	do	do	June 22, 1888	2.22	1.87	.38	.68	.38
105	B. & A.	do	do	do	2.35	1.98	.36	.70	.30
α	B. & A.	do	do	June 16, 1888	2.37	2.00	.39	.69	.35
β	B. & A.	do	do	do	2.32	2.05	.40	.73	.33
η	B. & A.	do	do	June 12, 1888	2.30	1.89	.42	.64	.37
γ	B. & A.	Immature male	do	June 16, 1888	2.28	1.93	.40	.86	.34
123	B. & A.	do	do	June 25, 1888	2.27	1.95	.40	.61	.34
δ	B. & A.	Adult female	do	June 16, 1888	2.26	1.97	.36	.73	.33
ε	B. & A.	do	do	do	2.08	1.91	.35	.68	.38
63	B. & A.	do	do	June 17, 1888	2.23	1.93	.36	.70	.35
125989	U. S.	do	do	Mar. 30, 1888	2.20	1.83	.42	.65	.38
135662	U. S.	do	do	Apr. 4, 1888	2.18	1.85	.38	.62	.35
135663	U. S.	Adult? female?	do	do	2.24	1.85	.35	.65	.39
			Average		2.23	1.92	.38	.70	.36

Family CUCULIDÆ.

Genus COCCYZUS, Vieillot.

Coccyzus, VIEILLOT, Analyse, 1816, p. 28. Type, *Cuculus americanus*, Linnæus.

Range.—Temperate and tropical America in general. Galapagos Archipelago (one species of wide range on South American continent).

COCCYZUS MELANOCORYPHUS, Vieillot.

Coccyzus melanocoryphus, VIEILLOT, Nouv. Dict. d'Hist.,Nat., VIII, 1817, p. 271.—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889 (1890), p. 113 (Chatham and Charles islands, Galapagos Archipelago).—SHELLY, Cat. Birds Brit. Mus., XIX, 1891, p. 307.

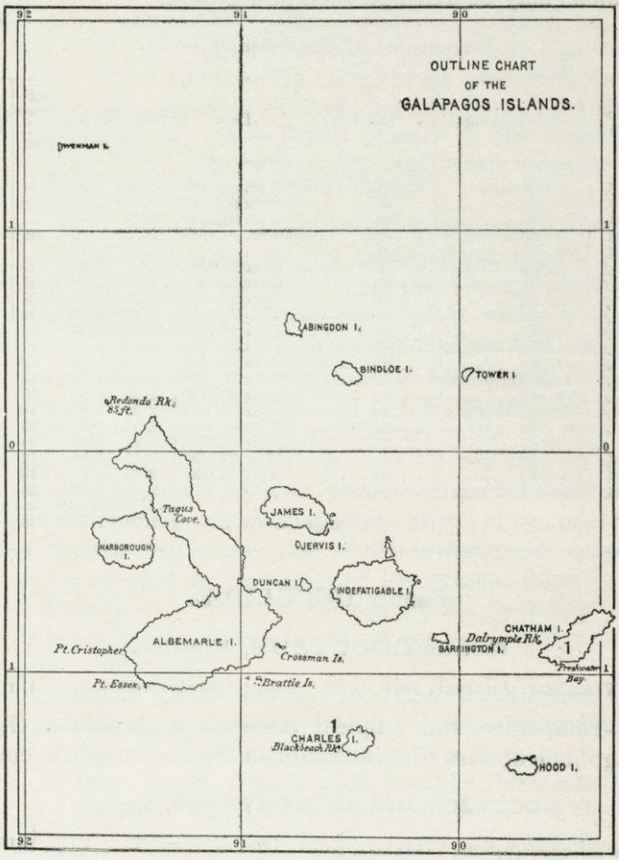
Range.—The greater part of South America; south to Argentine Republic and southern Brazil, north to Ecuador and Guiana. Galapagos Archipelago: Charles and Chatham islands (Townsend, Baur and Adams).

Chatham Island, male adult, April 5, 1888; Charles Island, male adult, April 8, 1888; immature male, April 1, 1891, and immature bird with sex undetermined, date same as the last; all collected by Mr. C. H. Townsend, naturalist of the United States Fish Commission steamer *Albatross*.

These specimens I am unable to distinguish from mainland examples,

though the adult male from Charles Island has the bill considerably deeper and broader at the base than any mainland specimens with which I have been able to compare it.

ASCERTAINED RANGE OF THE GENUS COCCYZUS, VIEILLOT, IN THE GALAPAGOS ARCHIPELAGO.



1. *Coccyzus melanocoryphus*, Vieillot.

Measurements of the Galapagos specimens are as follows:

Measurements of Coccyzus melanocoryphus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Bill from nostril.	Tarsus.	Middle toe.
115930	U. S.	Adult male.....	Charles Island.	Apr. 8, 1888	4.55	5.35	0.95	0.43	1.11	0.72
125991	U. S.	Immature male	.....do	Apr. 1, 1891	4.42	5.20	.90	.42	1.05	.72
125992	U. S.	.....do	.....do	.....do	4.70	5.67	.95	.43	1.13	.75
115963	U. S.	Adult male.....	Chatham Island.	Apr. 5, 1888	4.62	5.68	.88	.45	1.05	.75
			Average.....		4.57	5.42+	.92	.43	1.08+	.74+

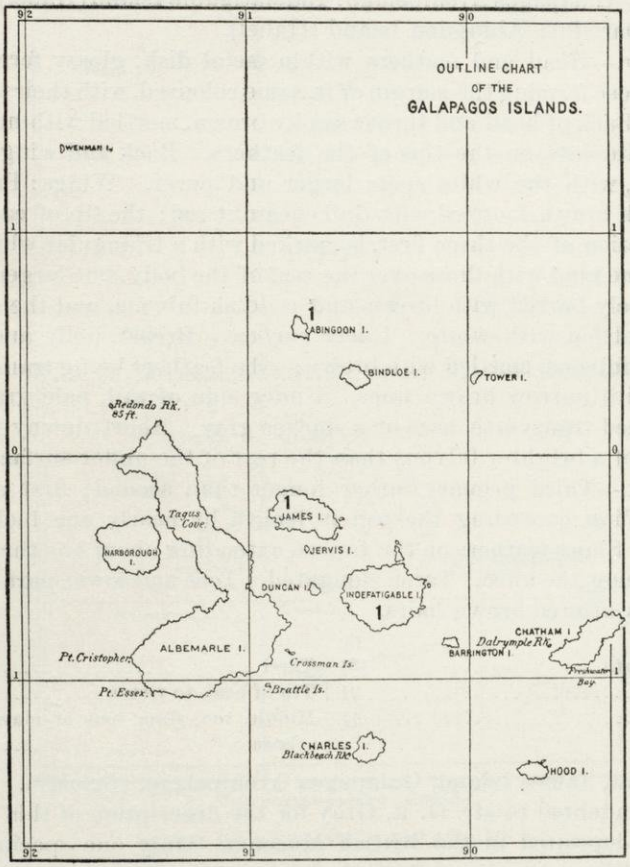
Family STRIGIDÆ.

Genus STRIX, Linnæus.

Strix, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 92. Type, by elimination, *S. aluco*, Linnæus (10th ed., nec ed. 12).

Range.—Cosmopolitan (except colder regions, New Zealand, and parts of Polynesia). Galapagos Archipelago (one peculiar species).

ASCERTAINED RANGE OF THE GENUS STRIX, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Strix punctatissima*, Gray.

STRIX PUNCTATISSIMA, Gray.

Strix punctatissima, G. R. GRAY, in Zool. Voy. Beagle, III, Birds, 1841, 34, pl. IV, (James Island, Galapagos Archipelago: collection British Mus.); Gen. Birds, I, 1844, p. 41; Hand-l., I, 1869, p. 52.—BONAPARTE, Consp. Av., I, 1850, p. 55.—KAUP, Contr. Orn., 1852, p. 118; Trans. Zool. Soc., IV, 1859, p. 246.—HARTLAUB, Jour. für Orn., 1854, p. 170.—STRICKLAND, Orn. Syn., I, 1855, p.

182.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island); Nom. Av. Neotr., 1873, p. 116.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 494 (James, Indefatigable and Abingdon islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 120, 122, 123, 124 (James, Indefatigable, and Abingdon islands.)

Strix pratincola (nec BONAPARTE), SHARPE, Cat. Birds Brit. Mus., II, 1875, p. 291 (part).

Specific characters.—Much smaller and darker than any of the continental forms of the genus; face rich rusty brown, under parts rich tawny, more or less barred with dusky, and upper parts with blackish brown predominating.

Range.—Galapagos Archipelago: Indefatigable Island (Habel); James Island (Darwin); Abingdon Island (Habel).

"*Colour.*—Head and feathers within facial disk, glossy ferruginous brown, those forming the margin of it, same coloured, with their tips dark brown. Back of head and throat smoky brown, mottled with numerous small white dots, on the tips of the feathers. Back and wing-coverts the same, with the white spots larger and purer. Wings: Primaries same dark brown, mottled with dull chestnut red; the tip of each, with the exception of the three first, is marked with a triangular white spot, of the same kind with those over the rest of the body, but larger. Tail, transversely barred with brown and reddish fulvous, and the extreme points mottled with white. *Under surface.* Breast, belly and lining of wings, fulvous, mottled with brown;—the feathers being transversely barred with narrow brown lines. Under side of tail, pale gray, with well defined transverse bars of a darker gray. Short downy feathers on tarsi, of a brighter fulvous than the rest of the under surface.

"FORM.—Third primary rather longer than second; first equal to third. Wing, exceeding the tail in length by nearly one inch and a quarter. Short feathers on the tarsus, extending about one-third of its length, below the knee. Tarsi, elongated. Toes and lower part of tarsi, with few scattered brown hairs.

	In.		In.
"Total length	13½	Tarsi	2 7/10
Wing	9¼	Tip of beak to rictus	1½
Tail	4¼	Middle toe, from root of claw to base	1 1/10

"Habitat, James Island, Galapagos Archipelago, (*October*).

"I am indebted to Mr. G. R. Gray for the description of this species, which is deposited in the British Museum. Only one specimen was obtained during our visit to the Galapagos Archipelago; and this formed part of the collection made by the direction of Captain FitzRoy.

"This owl is in every respect a true *Strix;* it is fully a third less than the common species of Europe, and differs from it in many respects, especially in the darker colouring of its plumage. The colouring of the Plate is not perfectly accurate in its minuter details." (Darwin.)

Neither Mr. Townsend nor Messrs. Baur and Adams met with this species on any of the islands.

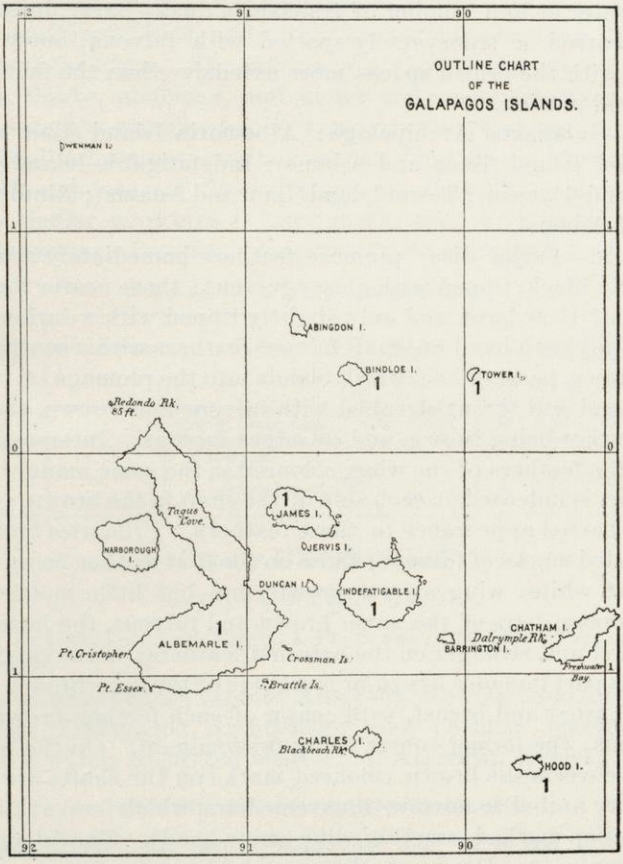
Family BUBONIDÆ.

Genus ASIO, Brisson.

Asio, BRISSON, Orn., I, 1760, p. 28. Type, *Strix otus*, Linnæus.

Range.—Nearly cosmopolitan (wanting in New Zealand and Australia and parts of Polynesia). Galapagos Archipelago (one peculiar species).

ASCERTAINED RANGE OF THE GENUS ASIO, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Asio galapagoensis* (Gould).

ASIO GALAPAGOENSIS (Gould).

Otus (*Brachyotus*) *galapagoensis*, GOULD, Proc. Zool. Soc., Pt. v, 1837, p. 10 (Galapagos Islands; collection Zool. Soc.).

Otus galapagoensis, GOULD, in Zool. Voy. Beagle, III, Birds, 1841, p. 32, pl. III (James Island).—GRAY, Gen. Birds, I, 1844, p. 40.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island).

Brachyotus galapagoensis, BONAPARTE, Consp. Av., I, 1850, p. 51.—CASSIN, Illustr. Birds Cal., Tex., etc., 1854, p. 183.—HARTLAUB, Jour. für. Orn., 1854, p. 170.

Asio galapagoensis, STRICKLAND, Orn. Syn., I, 1855, p. 211.—RIDGWAY, Proc. U. S. Nat. Mus., IV, 1881 (Apr. 6, 1882), p. 371 (synonymy), XII, 1889 (1890), pp. 120, 122, 123 (James and Indefatigable islands).

[*Brachyotus palustris.*] *c. galapagoensis*, COUES, Birds N.-W., 1874, p. 307.

Asio galapagensis, SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 493 (James and Indefatigable islands).

[*Asio accipitrinus.*] *γ. Asio galapagoensis*, SHARPE, Cat. Birds Brit. Mus., II, 1875, p. 238.

Asio accipitrinus (nec *Strix accipitrina*, PALLAS), SHARPE, Cat. Birds Brit. Mus., II, 1875, p. 234 (part).

Specific characters.—Similar to *A. accipitrinus* (Pallas), but smaller (wing 11–11.90); legs marked with narrow dusky bars, and under parts with a greater or less number of transverse dusky bars; dorsal region irregular barred or transversely spotted with fulvous; outer webs of primaries with the brown spaces more extensive than the fulvous ones on the basal portion.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams); Hood Island (Baur and Adams); Indefatigable Island (Habel); James Island (Darwin); Tower Island (Baur and Adams); Bindloe Island (Baur and Adams).

"COLOUR.—Facial disc; plumose feathers immediately around the eyes, nearly black, tipped with glossy fulvous; those nearer the margin are white at their base, and only slightly tipped with a darker brown. Between the eyes a band of small fulvous feathers with a central streak of dark brown, passing backward, blends into the plumage of the nape. Back of head and throat streaked with fulvous and brown, the centre of each feather being brown, and its edges fulvous. Interscapular region and the feathers of the wing, coloured in the same manner, but the fulvous part is indented on each side of the shaft in the brown, giving an obscurely barred appearance to these feathers. Primaries brown, with large rounded marks of fulvous; those on the first feather being smaller, and almost white: wing-coverts brown, and but little mottled. Tail with transverse bars of the same brown and fulvous, the latter colour much clearer and stronger on the external feathers; in the central ones, the fulvous part includes irregular markings of the dark brown. *Under surface.*—Throat and breast, with center of each feather brown, edged with fulvous; the former colour being predominant. On the belly and under tail-coverts the brown coloured marks on the shafts are narrow, but they are united to narrow transverse bars, which form at the points of intersection marked something like arrow-heads. The fulvous tint is here predominant. Downy feathers on thighs same fulvous colour as rest of body. Bill black.

"FORM.—Second primary scarcely perceptibly longer than the first, and fourth rather longer than first. Tarsi thickly clothed with short feathers to the root of the nails.

	In.		In.
"Total length	13½	Middle toe to root of nail	1 1/10
Wings	11	From tip of beak to interior edge of nostril	6/10
Tail	6		
Tarsi	2		

"Habitat, James Island, Galapagos Archipelago, (*October*).

"Mr. Gould informs me, that 'this species has most of the essential characters of the common short-eared owl of Europe (*Strix brachyota*), but differs from it, and all the other members of the group, in its smaller size and darker colouring.'

"The lesser proportional size of the fulvous marks on the first primaries, and on the tail, and the peculiar transverse brown marks on the feathers of the belly, easily distinguish it from the common short-eared owl. The specimen described is a male bird." (Darwin.)

This local form of the cosmopolitan *A. accipitrinus* is much smaller than the continental bird, and rather darker in color than the darkest specimens of the latter. The markings on the lower parts, especially on the sides, flanks, abdomen, and under tail-coverts, instead of being simply linear, are complicated by transverse bars which coalesce with the longitudinal stripes, producing something like a "herring bone" pattern, though some of the markings are distinctly hastate. A tendency to similar markings is very rarely seen in *A. accipitrinus*, but in *A. galapagoensis* they are exaggerated and constant.

Measurements of Asio galapagoensis.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.
218	B. & A.	Adult male	Hood, Galapagos	July 5, 1891	11.10	4.82	0.80	1.95	1.06
a	B. & A.	do	Tower, Galapagos	Sept. 3, 1891	11.00	5.38	.80	1.75	1.12
506	B. & A.	do	North Albemarle, Galapagos.	Aug. 11, 1891	11.90	5.38	.81	1.95	1.04
			Average		11.33	5.13	.80	1.88	1.07

Family BUTEONIDÆ.

Genus BUTEO, Cuvier.

Buteo, CUVIER, Leç. Anat. Comp., I, Pt. II, Ois., 1799–1800. Type, *Falco buteo*, Linnæus.

Range.—Cosmopolitan (except Australia, New Zealand, and parts of Polynesia). Galapagos Archipelago (one peculiar species, closely related to a widely dispersed continental American species).

BUTEO GALAPAGOENSIS (Gould).

Polyborus galapagoensis, GOULD, Proc. Zool. Soc., Pt. V, 1837, p. 9 (Galapagos Islands; collection Zool. Soc.).

Craxirex galapagoensis, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 23, pl. II (James Island).—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable and Abingdon islands).

Buteo galapagoensis, RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 113, 120, 121, 122, 123, 124, 128 (Indefatigable, Chatham, and Abingdon islands).

Buteo galapagensis, SUNDEVALL, Proc. Zool. Soc., 1871, p. 125.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 119.—SHARPE, Cat. Birds Brit. Mus., I, 1874, p. 170.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 495 (Indefatigable and Abingdon islands).

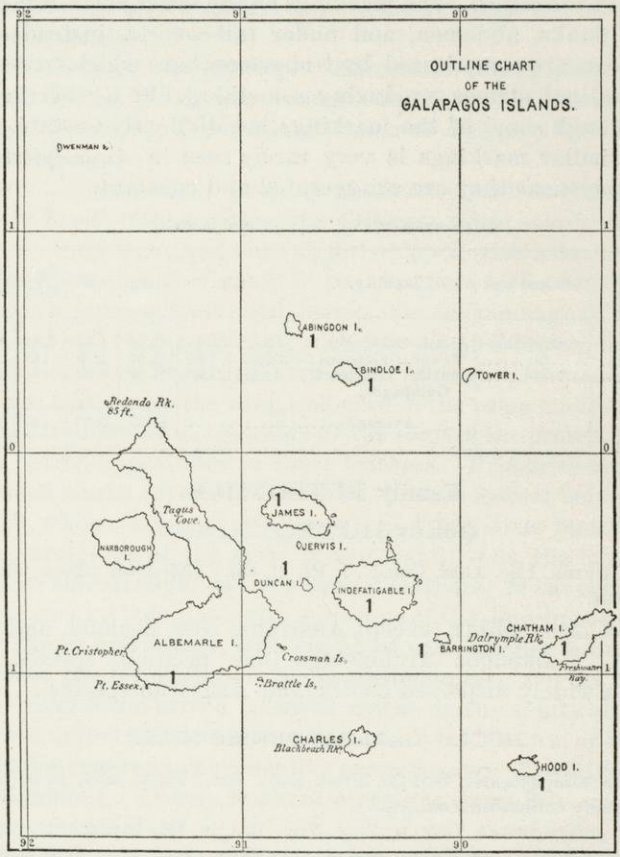
"*Buteo leucops*, GRAY, Cat. Accepite, 1848, p. 36" (Sharpe).

Pœcilopternis infulatus, KAUP, Contr. Orn., 1850, p. 76 (Galapagos Islands; collection Brit. Mus.;=juv.).

Specific characters.—Similar to *B. swainsoni*, Bonaparte, but larger, with proportionally larger bill and feet.

Range.—Galapagos Archipelago: South Albemarle Island(Baur and Adams); Duncan Island (Baur and Adams); Hood Island (Habel);[1] Chatham Island (Townsend, Baur and Adams); Barrington Island (Baur and Adams); Indefatigable Island (Darwin ?, Habel, *Albatross*, Baur and Adams); James Island (Darwin); Bindloe Island (Baur and Adams); Abingdon Island (Habel, *Albatross*).

ASCERTAINED RANGE OF THE GENUS BUTEO, CUVIER, IN THE GALAPAGOS ARCHIPELAGO.



1. *Buteo galapagoensis* (Gould).

Adult male (dark phase).—No. 116136, U.S.N.M.; Abingdon Island, April 16, 1888; C. H. Townsend. Nearly uniform dark sooty brown, inclining to brownish black on head, lighter and tinged with rusty on sides, flanks, abdomen, and tibiæ, where the feathers have more or less distinct terminal margins of lighter brown; under tail-coverts with

[1] Seen, but not collected.

broad white bars, mostly concealed, except on longer feathers, where the whitish bars nearly equal the dark brown interspaces in extent; secondaries darker brown than wing-coverts, crossed by four or five (exposed) broad obsolete bars of a still darker shade, and margined terminally with pale grayish brown; primaries brownish black, slightly grayer on outer webs, where traces of obsolete darker bars can be discovered on second to fourth quills; inner webs of primaries, on under surface, anterior to emarginations, grading from white on first quill to brownish gray on the innermost, all marked with broken bars and freckling of brownish gray; under wing-coverts plain dark sooty brown, the greater series rather paler and barred, especially on inner webs, with light grayish. Upper tail-coverts barred on outer webs with white and dark brown, their inner webs with light grayish brown and dark brown, the lighter and darker bars nearly equal in width. Tail grayish brown, with more or less of a hoary cast (especially on the newer feathers), crossed, beyond tips of upper coverts, by about nine bars of dusky, of which the last is broadest and succeeded by a narrow terminal band of whitish brown (dirty white on newer feathers). Bill grayish black, paler (light bluish in life?) basally; cere yellowish; legs and feet yellowish, claws grayish black.[1] Length (skin), 19.25; wing, 15.50; tail, 8; culmen, 1.07; tarsus, 3.03; middle toe, 1.70.

Adult female (*dark phase*).—No. 116058, U.S.N.M.; Indefatigable Island, April 12, 1888; C. H. Townsend. Similar to the adult male, as described above, but under parts (except under tail-coverts) quite uniform dark sooty brown; inner webs of primaries, anterior to emarginations, without bars, but thickly freckled with darker and lighter brownish gray. Length (skin), 21; wing, 16.10; tail, 8.55; culmen, 1.25; tarsus, 3.20; middle toe, 1.95.

Young female.—No. 131672, U.S.N.M.; Chatham Island, March 30, 1891; C. H. Townsend. General color of upper parts dark sooty brown, but this broken on head and neck by streaks of buff and on back, scapulars, wing-coverts, and rump by subbasal spots and edgings of the same; remiges as in adults; upper tail-coverts irregularly barred with sooty brown and ochraceous-buff; tail grayish brown, washed with hoary gray on middle feathers, crossed by numerous bars of dusky (narrower than in adult), which become obsolete toward the base of the tail, the last one much the broadest, and narrowly tipped with pale brown or dirty brownish white; the inner webs of the rectrices light pinkish buff, shaded with grayish brown and marked with irregular narrow dusky bars, rather more distinct than those on outer webs. Under parts deep ochraceous-buff, marked with shaft streaks and tear-shaped spots of dark sooty brown, largest on belly and flanks, the thighs, under tail-coverts, and under wing-coverts transversely spotted

[1] Mr. Adams, in his manuscript notes, describes the fresh colors of a female (age not stated) as follows: "Iris ochraceous-buff; cere naples yellow; feet and legs maize yellow."

with the same; under surface of primaries, anterior to their emarginations, pale buff, or buffy white, almost immaculate. Length (skin), 22; wing, 16.50; tail, 9; culmen, 1.19; tarsus, 2.90; middle toe, 1.95.

Another young female, from Indefatigable Island (No. 116059, U.S.N.M., April 12, 1888), is much darker than the one described, both above and below, the ochraceous-buff markings on the under parts being also paler.

This insular species is very closely related to *B. swainsoni*, Bonaparte, which it almost exactly resembles in coloration, but the bill and feet are very much stronger. Only dark-colored adults have hitherto been taken, and *B. galapagoensis* may possibly not have a light-colored phase of plumage as has *B. swainsoni*.

Measurements of Buteo galapagoensis (Gould).

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen, from cere.	Tarsus.	Middle toe.
116136	U. S.	Adult male	Abingdon Island.	Apr. 16, 1888	15.50	8.00	1.07	3.03	1.70
113	B. & A.	do	Chatham Island.	June 24, 1891	15.10	8.03	1.06	2.67	2.00
280	B. & A.	do	Barrington Island.	July 19, 1891	15.12	9.18	1.04	2.79	1.80
			Average		15.24	8.40	1.06	2.83	1.83
116058	U. S.	Adult female	Indefatigable Island.	Apr. 12, 1888	16.10	8.55	1.25	3.20	1.95
131672	U. S.	Juvenile female.	Chatham Island.	Mar. 30, 1891	16.50	9.00	1.19	2.90	1.95
87	B. & A.	Adult female	do	June 19, 1891	16.75	8.70	1.12	2.86	2.02
281	B. & A.	do	Barrington Island.	July 10, 1891	16.90	8.75	1.20	2.82	2.10
286	B. & A.	do	Indefatigable Island.	July 11, 1891	16.62	9.35	1.21	2.93	2.10
287	B. & A.	do	do	do	16.15	8.33	1.25	3.05	2.00
288	B. & A.	do	do	July 12, 1891	16.48	8.50	1.24	2.86	2.02
			Average		16.50	8.89	1.21	2.95	2.02

Family FREGATIDÆ.

Genus FREGATA, Cuvier.

Fregata, Brisson, Orn. VI, 1760, 506. Type, *Pelecanus aquilus*, Linnæus.

Range.—Tropical and subtropical seas of both hemispheres; Galapagos Archipelago.

FREGATA AQUILA (Linnæus).

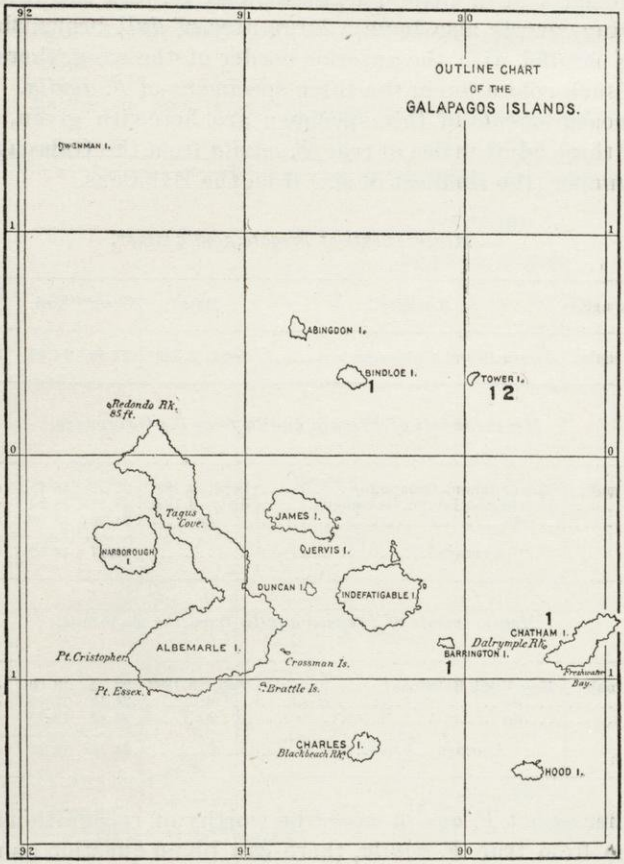
Pelecanus aquilus, Linnæus, Syst. Nat., 10th ed., I, 1758, p. 133.

Tachypetes aquilus, Vieillot, Gal. Ois., 1825, pl. 274.—Sundevall, Proc. Zool. Soc., 1871, p. 125 (Galapagos).

Fregata aquila, Gould, Zool. Beagle, III, Birds, 1841, p. 146 (Galapagos).—Salvin, Trans. Zool. Soc. Lond., IX, Pt. ix, 1876, p. 497 (Galapagos).—Baird, Brewer, and Ridgway, Water Birds N. Amer. II, 1884, p. 128.—Ridgway, Man. N. Amer. Birds, 1887, p. 83.

Range.—Intertropical and subtropical seas in general. Galapagos Archipelago: No special locality (Darwin, Kinberg); Chatham, Barrington, Tower, and Bindloe islands (Baur and Adams).

ASCERTAINED RANGE OF THE GENUS FREGATA, CUVIER, IN THE GALAPAGOS ARCHIPELAGO.



1. *Fregata aquila* (Linnæus).
2. *Fregata aquila minor* (Gmelin).

FREGATA AQUILA MINOR (Gmelin).

Pelecanus minor, GMELIN, Syst. Nat., I, 1788, p. 572.

Tachypetes minor, BONAPARTE, Consp. Av., II, 1855, p. 167 (part: excl. syn. *Attagen ariel*, Gould[1]).

Fregata minor, RIDGWAY, in Baird, Brewer and Ridgway's Water Birds N. Amer., II, 1884, p. 128; Manual N. Amer. Birds, 1887, p. 83.

Range.—Central Pacific and Indian oceans. Accidental (?) in the Galapagos Archipelago: Tower Island (Baur and Adams).

[1] A totally distinct species, easily recognized by the white flank-patch of the adult male and other perfectly obvious characters. (See p. 592.)

One specimen of this smaller form, an adult male, was obtained at Tower Island, September 3, 1891, by Messrs. Baur and Adams.

Besides being considerably smaller, this bird differs from the three examples of true *F. aquila* in coloration, the plumage being much more glossy, and the metallic coloring of the back and scapulars brilliant green mixed with a little purple, instead of just the reverse. The lesser wing-coverts also have a large area of dull brownish feathers, running parallel with the anterior border of the wing, there being no trace of such coloration in the three specimens of *F. aquila*.

The measurements of this specimen are herewith given, as well as those of three adult males of true *F. aquila* from the Galapagos and an equal number (the smallest of six) from the Bahamas.

Measurements of Fregata aquila minor.

Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Middle toe.
Adult male..	Tower Island, Galapagos	Sept. 3, 1891	22.80	14.60	3.82	2.06

Measurements of Fregata aquila from the Galapagos.

Adult male..	Tower Island, Galapagos	Sept. 3, 1891	25.70	18.75	4.38	2.18
Do	Barrington Island, Galapagos	July 8, 1891	25.51	18.80	4.38	2.15
Do	do	do	24.30	18.00	4.05	2.05
	Average		25.17	18.52	4.27	2.13

Measurements of Fregata aquila from the Bahamas.

Adult male..	Key Verd, Bahamas	Feb. 3, 1892	23.75	18.00	4.20	
Do	do	do	24.10	17.75	4.30	2.10
Do	do	do	24.45	18.75	4.12	2.05
	Average		24.10	18.17	4.21	2.07

Whether or not *F. aquila minor* be worthy of recognition as a separate form from true *F. aquila*, there can be no question as to the fact that it was upon this form that Gmelin's name *Pelecanus minor* was based. It is equally certain that the name *Attagen ariel*, Gould, so generally quoted as a synonym of *F. minor*, does not at all belong to the latter bird, but to a very distinct species inhabiting the seas between Africa and Australia (and doubtless elsewhere). *F. ariel* is still smaller than *F. a. minor*, very much more slender, and differs further in several very conspicuous color-characters, among which may be mentioned a large white flank-patch, of which there is no trace in either *F. aquila* or its smaller form.

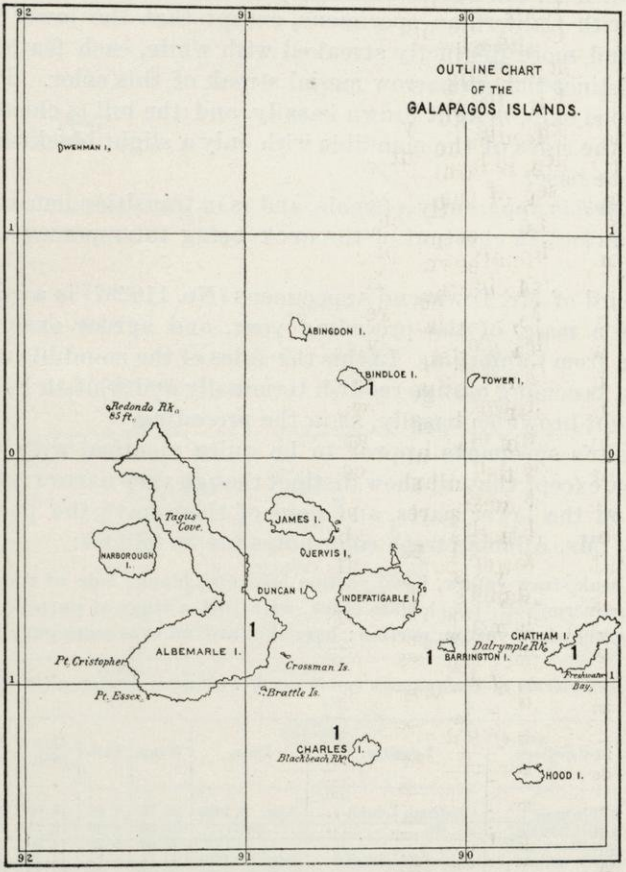
Family PELECANIDÆ.

Genus PELECANUS, Linnæus.

Pelecanus, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 132. Type, by elimination, *P. onocrotalus*, Linnæus.

Range.—Nearly cosmopolitan (wanting in New Zealand and Polynesia). Galapagos Archipelago (one species, found also on Pacific coast of America).

ASCERTAINED RANGE OF THE GENUS PELECANUS, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Pelecanus fuscus californicus*, Ridgway.

PELECANUS FUSCUS CALIFORNICUS, Ridgway.

Pelecanus fuscus (nec LINNÆUS), SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (Galapagos Islands).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 496 (Galapagos Islands); Proc. Zool. Soc., 1883, p. 427 (Charles Island; Payta, Peru).

Pelecanus fuscus (?) *californicus*, RIDGWAY, in Baird, Brewer and Ridgway's Water Birds N. Amer., II, August, 1884, p. 143 (La Paz, Lower California; collection, U. S. Nat. Mus.).

Pelecanus californicus, RIDGWAY, in Baird, Brewer & Ridgway's Water Birds N. Amer., II, 1884, p. 143 (in text); Man. N. Amer. Birds, 1887, p. 82; Proc. U. S. Nat. Mus., XII, 1889 (1890), p. 113 (Chatham Island).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, No. 127.

Range.—Pacific coast of America, from Washington to coast of Peru (Payta, Markham). Galapagos Archipelago: No locality, (Kinberg); Albemarle, Barrington, and Bindloe islands (Baur and Adams); Charles Island (Markham, Baur and Adams); Chatham Island (Townsend, Baur and Adams).

The single adult example (No. 115964, U.S.N.M.) collected by Mr. Townsend is in the white-necked or post-nuptial plumage, and agrees exactly with Californian specimens, except that the lower parts are darker and more distinctly streaked with white, each feather having a very distinct though narrow mesial streak of this color. The pouch, in the dried skin, is light brown basally, and the bill is chiefly orange-reddish, the sides of the mandible with only a slight blackish mottling toward the base.

No. 115965 is apparently a female, and is in transition immature plumage, the brownish chestnut of the neck being interspersed with white feathers.

The third of Mr. Townsend's specimens (No. 116297) is a young bird, probably a male, of the preceding year, and agrees exactly with a specimen from California. In this the sides of the mandible are mainly blackish, becoming orange-reddish terminally and whitish basally; the pouch light brownish basally, as in the preceding.

Dr. Baur's specimens appear to be quite identical with California examples, except that all show distinct though very narrow white shaft-streaks on the lower parts, and none of them have the pouch at all reddish. Mr. Adams's fresh color-notes are as follows:

Nail of beak straw yellow, basal portion brownish black; side of mandibles near ends orange-vermilion; pouch slate-black, with just a tinge of purplish at angle of jaws and greenish in median portion; bare skin around eyes more purplish.

Measurements of Galapagoan specimens of Pelecanus fuscus californicus.

Number.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.
115964	Adult male	Chatham Island	Apr. 5, 1888	22.75	7.80	14.00	3.30	4.50
115965	Adult female?	do	do	21.25	6.00	12.25	3.15	4.05
116297	Immature male?			22.00	6.25	14.00	3.35	4.25
302	Adult male	Albemarle Island	July 14, 1891	23.15	5.25	14.46	3.03	4.53
379	do	do	July 24, 1891	22.40	5.18	14.12	2.93	4.47
380	Adult female	do	do	21.13	5.51	12.20	2.75	4.15
.....	do	(?)	(?)	22.48	5.87	15.37	3.03	4.42
		Average		22.16	5.99	13.77	3.08	4.34

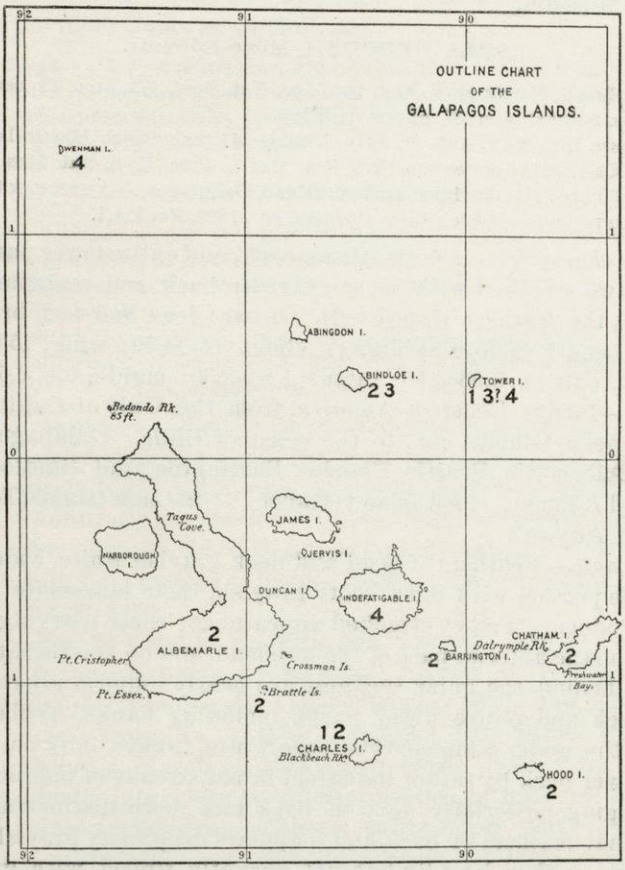
Family SULIDÆ.

Genus SULA, Brisson.

Sula, BRISSON, Orn., VI, 1760, p. 495. Type, by elimination, *Pelecanus sula*, Linnæus.

Range.—Nearly cosmopolitan, on seacoasts and islands (wanting in colder regions). Galapagos Archipelago (two American species and two of wide distribution).

ASCERTAINED RANGE OF THE GENUS SULA, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Sula cyanops*, Sundevall. ("Galapagos.")
2. *Sula nebouxii*, Milne-Edwards.
3. *Sula brewsteri*, Goss. ("Galapagos;" also, Cowley Island.)
4. *Sula piscator* (Linnæus).

SULA CYANOPS, Sundevall.

Dysporus cyanops, SUNDEVALL, Phys. Tidskr. Lund., 1837, Pt. v; Proc. Zool. Soc., 1871, p. 125 (Galapagos Islands).

Sula cyanops, SUNDEVALL, Isis, 1842, p. 858.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 496 (Galapagos, fide SUNDEVALL); Proc. Zool. Soc., 1883, p. 427 (Charles Island).—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., II, 1884, p. 176.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 75.

Range.—Intertropical seas in general. ?Galapagos Archipelago: No locality (Kinberg); Charles Island (Markham); Tower Island (Baur and Adams).

I follow Mr. Salvin in giving this species on the authority of Professor Sundevall,[1] who includes it in his paper "On birds from the Galapagos Islands." Mr. Townsend did not meet with it, but Dr. Baur mentions it in his list of birds observed at Tower Island. The specimens, if any were collected, must have been with those lost or stolen at Guayaquil, none being in the collection received at the National Museum.

SULA NEBOUXII, Milne-Edwards.

Sula nebouxii, MILNE-EDWARDS, Ann. Soc. Nat. Zool., 52, Ann. VI, ser. 1, XIII, Nos. 2–4, art. 4, p. 37, pl. XIV (Chile).

Sula gossi, RIDGWAY, Auk, V, July, 1888, p. 241 (San Pedro Martir Island, Gulf of California; collection U. S. Nat. Mus.); Proc. U. S. Nat Mus., XII, 1889 (1890), pp. 114, 120, 121 (Chatham Island, Galapagos).—AMERICAN ORNITHOLOGISTS' UNION, Check List, abridged ed., 1889, No. 114.1.

Specific characters.—Adult. Head, neck, and entire lower parts white, the first two streaked with sooty grayish; back and scapulars dusky brownish, the feathers tipped with whitish; legs and feet bright blue in life. Length (before skinning), about 32–34.50; wing, 15.50–17.50; tail, 8–10; culmen, 3.98–4.55; tarsus, 1.85–2.30; middle toe, 2.65–3.05.

Range.—Pacific Coast of America, from the Gulf of California, the Revillegigedo Islands, etc., to the coast of Chile. Galapagos Archipelago: Albemarle, Brattle, Charles, Barrington, and Bindloe islands (Baur and Adams); Hood Island (Habel);[2] Chatham Island (Townsend, Baur and Adams).

Adult male.—Feathers of head and neck grayish white, widely edged in middle portion with dark sooty grayish, their lanceolate tips pure white, producing a wavy streaked appearance; these markings become obsolete on the anterior part of the forehead, and on the throat for some distance behind the gular sac, and are nearly uniform grayish white; lower neck and entire lower parts, including flanks, axillaries, and most of the under wing-coverts, pure white, broken only on the sides of the lower neck by rather indistinct broad streaks of pale sooty grayish, changing posteriorly next to back into more distinct spots of a deeper hue; feathers of back and scapulars deep sooty grayish or grayish brown, rather broadly but not abruptly tipped with dull white, these terminal spots larger and more distinct on posterior scapulars; wing-coverts entirely plain grayish brown or light sepia, deepening gradually into sooty slate on primaries; lower back and lower rump pale grayish sepia, fading gradually into white on upper tail-coverts; the upper parts of rump chiefly pure white; middle tail feathers white, faintly shaded on outer portion of outer web for about the terminal third with pale brownish gray, their shafts entirely clear yellowish

[1] Proc. Zool. Soc. Lond., 1871, pp. 124–130. [2] Not collected.

white, the outer pair wholly sooty grayish (darker terminally and on most of outer web), the others gradually paler toward the middle pair. Iris yellow; bill dull olive-blue; bare space around bill, eyes, lores, and gular sac slate-blue; legs, feet, and webs bright clear ultramarine blue with a slight greenish tint on webs; claws pale glaucous-blue.

Adult female.—Essentially like the male, but averaging slightly larger; iris paler yellow; plumage rather darker, except hind neck, which is less distinctly streaked.

So far as I am able to see, Galapagoan specimens are quite identical with those from the Gulf of California. Following are Mr. Adams' notes on the fresh colors of the bill, etc.:

> Feet and legs . . . a purplish blue, lighter than royal purple [Ridgway's Nomenclature of Colors]; tarsus and toes possess the more blue, while the webs have more of the darker purplish, especially toward their edges. Bare skin of head and throat much duller purple, very near plumbeous.

SULA BREWSTĒRI, Goss.

Dysporus leucogaster (nec *Pelecanus leucogaster*, BODDAERT), SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (Galapagos Islands).

Sula leucogastra, SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 496 (Galapagos, fide Sundevall).

Sula brewsteri, GOSS, Auk, V, July, 1888, p. 242 (San Pedro Martir Island, Gulf of California; collection U. S. Nat. Mus.).—AMERICAN ORNITHOLOGISTS' UNION, Check List, abridged ed., 1889, No. 115.1.

Specific characters.—Similar to *S. leucogaster* (Boddaert), but back uniform in color with the neck, the head and neck paler than in that species, especially the adult male, in which the former gradually fades into white anteriorly; unfeathered parts quite differently colored from *S. leucogaster*. Length, 29.50–31.50; extent of wings, 55.50–59.50; wing, 14–16.50; tail, 7–9; culmen to frontal feathers, 3.47–4; tarsus, 1.80–2.05; middle toe, 2.30–2.85.

Range.—Pacific coast of America and adjacent islands, from Lower California to the Galapagos Archipelago: No locality (Kinberg); Tower Island (Habel)?;[1] Bindloe and Cowley islands (Baur and Adams).

Adult male.—Type, No. 113436, U.S.N.M.; San Pedro Martir Isle, Gulf of California, March 21, 1888; N. S. Goss. Neck pale drab-gray, fading gradually into white on anterior portion of head, all round, and deepening into smoky drab on chest; entire upper parts (except head and neck) entirely uniform rich drab-brown or sepia, deepening on primaries and rectrices into rich purplish brown or seal brown, the shafts of these feathers black. Entire lower parts posterior to chest,

[1] "On Tower Island also a small species [of gannet] is found with chocolate-colored plumage. Of this species a specimen was caught on board the sloop and secured by tying it by one leg. . . . But on Bindloe it was liberated by somebody." (Trans. Zool. Soc. Lond., IX, Pt. IX, 1876, p. 460.)

While this may possibly have been the gray phase of *S. piscator*, the latter could not properly be described, in any stage, as "chocolate-colored;" this term does, however, fit *S. brewsteri* very well.

including axillars and oblique bar across middle of under wing-covert region, plain pure white. "Bill olive-blue; lores and bare space around eyes indigo blue; gular sac dull slate-blue, with a greenish tint; legs, feet, and webs light pea green." (Goss, MS.). Length (before skinning), 31.50; wing, 15.50; tail, 9, graduated for 3.50; culmen, to frontal feathers, 3,80; depth of bill at base, 1.30, at narrowest part behind ungui, 0.55; tarsus, 1,90, middle toe, 2.75.

Adult female.—No. 113437, U.S.N.M.; same locality and collector, March 24, 1888. Decidedly larger than the male, but similar in plumage except that the head, neck, and chest are much darker, being exactly like the upper surface of the body, etc., though perceptibly paler (a medium shade of grayish drab) on anterior portion of head. "Bill pale bluish horn, fading after death, and toward base, into a dull dirty buff; lores, slate-blue; bare space around eyes, and gular sac pale yellowish green; legs, feet, and webs lighter in color [than gular sac], and with more of a yellow look." (Goss, MS.). Length (before skinning), 31.50; wing, 15.50; tail, 9, graduated for 3.50; culmen, to frontal feathers, 3.80; depth of bill at base, 1.30, at narrowest part behind ungui, 0.55; tarsus, 1.90; middle toe, 2.75.

The iris is said to be "dark brown with a narrow ring of grayish white around outer edge" and the claws "glaucous-blue" in both sexes. (Goss.)

Although I have not seen a specimen of the dark-colored *Sula* found in the Galapagos, I have no doubt the species mentioned by Sundevall and Salvin under the name *leucogaster* is in reality *S. brewsteri*, which is the Pacific coast representative of *S. leucogaster*, the latter being apparently confined to the Atlantic side of the continent.

SULA PISCATOR (Linnæus).

Pelecanus piscator, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 134.

Sula piscator, BONAPARTE, Consp. Av., II, 1857, p. 166.—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., II, 1884, p. 182.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 76.

Range.—Intertropical seas in general, north, in America, to Florida and Lower California; Galapagos Archipelago: Indefatigable and Tower islands (Baur and Adams); Wenman Island (Townsend).

The five specimens in Dr. Baur's collection, and Mr. Townsend's Wenman Island bird, although unquestionably adults, with deep red feet and other evidences of full maturity, are all in the gray plumage. All have gray tails, and only one, a male from Tower Island, has any portion of the plumage inclining to white, the lower parts posterior to the breast being soiled white (purer beneath the surface) and the posterior scapulars and longer upper tail-coverts whitish.

Mr. Adams' fresh color-notes on these specimens are as follows:

Legs and feet a trifle more red and purple than madder brown; beak with just a little more blue than lavender-gray; bare skin across forehead and on sides of mandible next to horny portion same as legs, but paler; around eye a little more blue than beak; angle of jaw next feathers and on throat between rami dark purplish.

Measurements of specimens of Sula piscator from the Galapagos.

Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill at base	Width of bill at base.	Tarsus.	Middle toe.
Adult female ...	Wenman Island ..	Apr. 4, ——	15.75	8.10	3.38	1.10	0.90	1.45	2.45
Do.....	Indefatigable Island.	Sept. 3, 1891	15.50	8.24	3.25	1.05	.85	1.53	2.62
Do.....	.....do	.....do	15.60	7.92	3.26	1.21	.91	1.41	2.56
Adult male	.....do	Sept. 4, 1891	15.35	8.02	3.20	1.10	.92	1.27	2.43
Adult female ...	Tower Island	.....	15.35	7.83	3.00	1.11	.87	1.33	2.42
Adult male	.....do	Aug. 3, 1891	15.15	8.90	3.25	1.14	.85	1.28	2.38
	Average	.....	15.45	8.17	3.22	1.12	.87	1.38	2.44

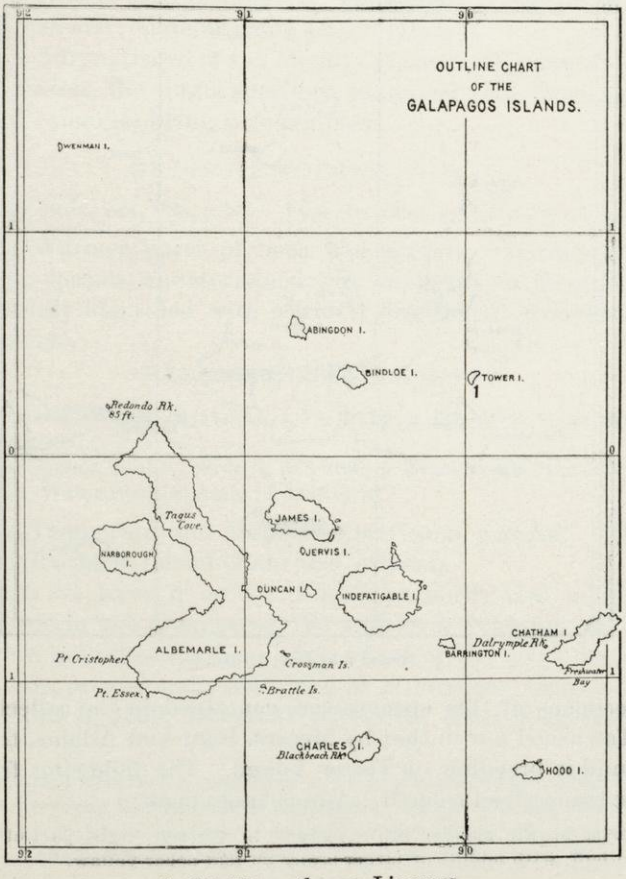
Family PHAËTHONTIDÆ.

Genus PHAËTHON, Linnæus.

Phaëthon, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 134. Type, *P. æthereus*, LINNÆUS.

Range.—Intertropical seas in general. Galapagos Archipelago (one species of wide distribution).

ASCERTAINED RANGE OF THE GENUS PHAËTHON, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



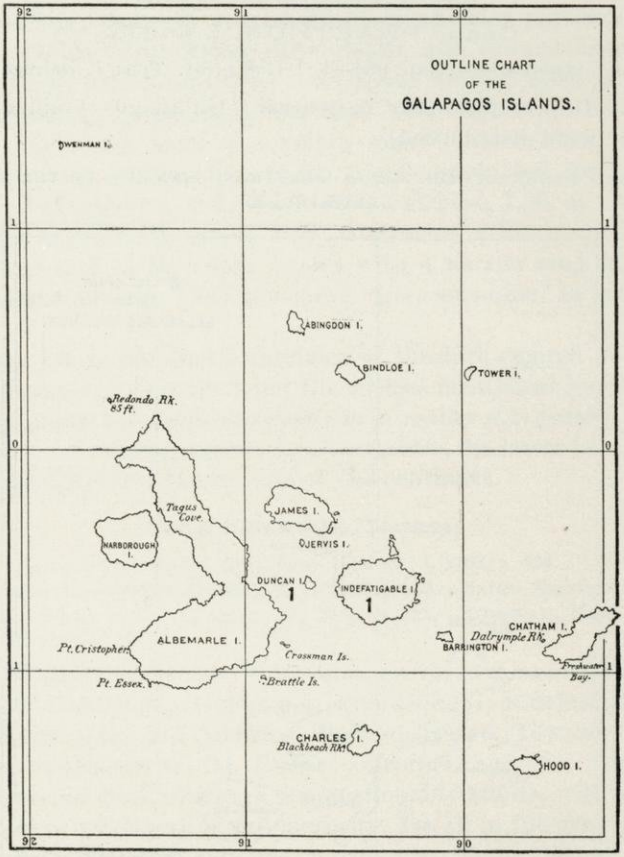
1. *Phaëthon æthereus*, Linnæus.

PHAËTHON ÆTHEREUS, Linnæus.

Phaëthon æthereus, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 134.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 497 (Tower Island, Galapagos Archipelago).—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., II, 1884, p. 189.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 74.

Range.—Intertropical seas in general, north, in America, to the Bahamas and Lower California (accidentally to Newfoundland). Galapagos Archipelago: Tower Island (Habel, Baur and Adams).

ASCERTAINED RANGE OF THE GENUS ARDEA, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Ardea herodias*, Linnæus?

No specimens of this species were contained in the collection made by Mr. Townsend nor in that by Messrs. Baur and Adams, though the latter found it breeding on Tower Island. The following fresh color-notes are transcribed from Mr. Adams' note book:

Beak a *trifle* brown (madder brown) added to crimson; light part of tarsus and foot cream-buff, with middle of larger scales on foot ocher yellow.

Family ARDEIDÆ.

Genus ARDEA, Linnæus.

Ardea, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 141. Type, by elimination, *A. cinerea*, Linnæus.

Range.—Nearly cosmopolitan (wanting in New Zealand, Polynesia, etc.). Galapagos Archipelago (one species, doubtfully identified with a species of North, Middle, and northern South America).

?ARDEA HERODIAS, Linnæus.

Ardea herodias, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 143.—DARWIN, Zool. Voy. Beagle, III, Birds, 1841, p. 128 (Galapagos Archipelago).—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 497 (Indefatigable Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 114 (Duncan Island).—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., I, 1884, p. 13.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 129.

Range.—Temperate North America, whole of Middle America, and parts of northern South America. Galapagos Archipelago: Duncan Island (*Albatross*); Indefatigable Island (Habel).

I am not fully satisfied of the identity of the Galapagos bird with the true *A. herodias*, the single specimen examined (Mr. Townsend's Duncan Island example) being a young bird.

Genus HERODIAS, Boie.

Herodias, BOIE, Isis, 1822, p. 559. Type, by elimination, *Ardea egretta*, Gmelin.

Range.—Warmer parts of both hemispheres. ?Galapagos Archipelago (one species, undetermined, but supposed to be of this genus, and doubtfully identified with a widely distributed American species. No specimens).

?HERODIAS EGRETTA (Gmelin).

Ardea egretta, GMELIN, Syst. Nat., I, Pt. II, 1788, p. 629.—RIDGWAY, Man. N. Amer. Birds, 1887.

Herodias egretta, BAIRD, Birds N. Am. 1858, p. 666.—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., I, 1884, p. 23.

Range.—Temperate and tropical America in general. ?Galapagos Islands: Albemarle Island (Baur and Adams).

Although we have it on Dr. Baur's authority that a large white heron breeds in the Galapagos, the species is doubtful, and the bird found there may possibly be a white phase of the large gray heron of those islands, provisionally identified as *A. herodias*, Linnæus.[1] Under date of April 6, 1892, Dr. Baur writes me concerning this bird as follows:

On Albemarle I observed a rookery of a white heron (the adults fully white). I only secured a young bird in form of a skeleton. The gray heron (*Ardea herodias?*)

[1] Only immature specimens of which have been examined.

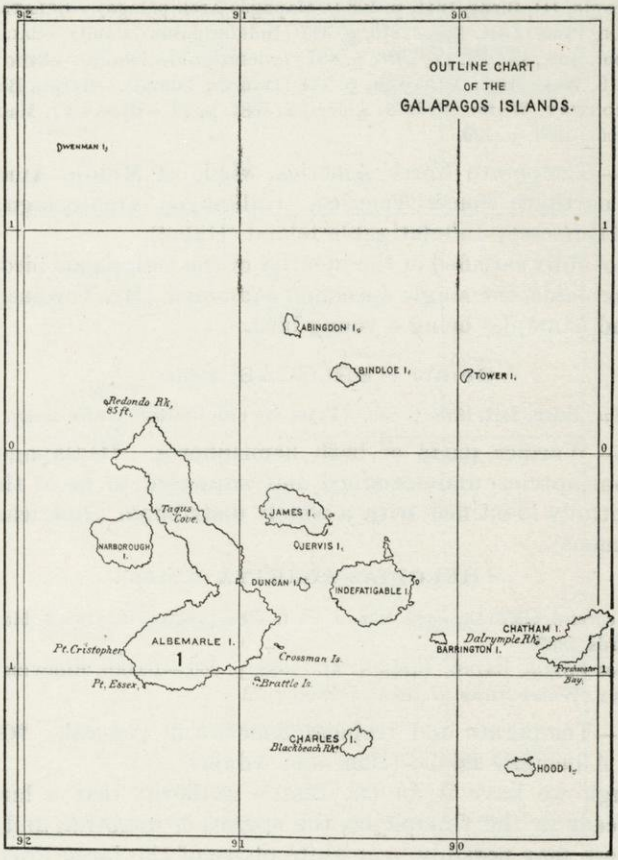
was also common there. The white heron was as large as, perhaps larger than, the *A. herodias*.

Genus BUTORIDES, Blyth.

Butorides, "Blyth, 1849," Bonaparte, Consp. Av., II, 1855, p. 128. Type, *Ardea javanica*, Horsfield.

Range.—Temperate and tropical portions of both hemispheres, but wanting in Europe, the greater part of Africa, New Zealand, etc. Galapagos Archipelago (one peculiar and strongly marked species).

ASCERTAINED RANGE OF THE GENUS HERODIAS, BOIE, IN THE GALAPAGOS ARCHIPELAGO.



1. *Herodias egretta* (Gmelin)?

BUTORIDES PLUMBEUS (Sundevall).

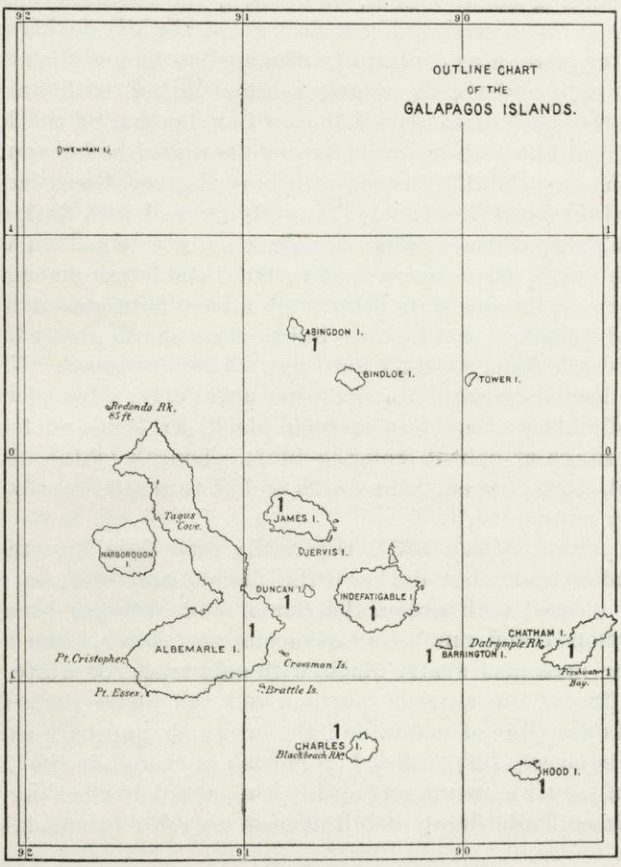
Butorides javanicus (nec *Ardea javanica*, Horsfield), Sclater and Salvin, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island, Galapagos Archipelago).

Ardea plumbea, Sundevall, Proc. Zool. Soc., 1871, pp. 125, 127 (James Island, Galapagos Archipelago).

Butorides plumbeus, SCLATER and SALVIN, Nom. Av. Neotr., 1873, p. 125.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 497 (Indefatigable and James islands); Proc. Zool. Soc., 1883, p. 428 (Charles Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, pp. 114, 120, 121, 122, 123, 124 (Chatham, Indefatigable, James, Abingdon, Duncan, and Hood islands).

Ardea sundevalli, REICHENOW, Journ. für Orn., July, 1877, p. 253 (Galapagos Islands).

ASCERTAINED RANGE OF THE GENUS BUTORIDES, BLYTH, IN THE GALAPAGOS ARCHIPELAGO.



1. *Butorides plumbeus* (Sundevall).

Specific characters.—Of much stouter build and darker coloration than any other American species of the genus, the adult with little if any brown or chestnut in the plumage, which is plain gray (of varying shade) beneath, darker, glossed with green, above; young striped with whitish on a dusky ground beneath the dusky upper parts and neck, varied with rusty. Wing, 6.98–7.50; culmen, 2.05–2.80; depth of bill at base, 0.53–0.60; tarsus, 1.72–2.15; middle toe, 1.65–2.06.

Range.—Galapagos Archipelago: Albemarle Island (Baur and

Adams); Duncan Island (*Albatross*); Charles Island (Baur and Adams); Hood Island (*Albatross*, Baur and Adams); Chatham Island (Jones); Barrington Island (Baur and Adams); Indefatigable Island (Habel); James Island (Kinberg, *Albatross*, Baur and Adams); Abingdon Island (*Albatross*).

Adult male.—No. 116029, U.S.N.M.; James Island, April 11, 1888; C. H. Townsend. Entire pileum, including occipital crest, sooty black, strongly glossed, except on forehead, with dark metallic green; sides of head, including malar region, slate-black, the feathers slate-gray beneath the surface; neck uniform slate color, slightly darker posteriorly and lighter (slate-gray) anteriorly, the median line of the neck, as well as of the chin and throat, mainly white, marked with broad wedge-shaped streaks of slate-black—the median portion of the lower neck tinged with light drab-brown. Lanceolate dorsal and scapular plumes plumbeous-gray, faintly glossed with bronze-green, their shafts grayish white; wing-coverts dark slaty, strongly glossed with dark semimetallic green, some of the middle coverts narrowly edged on outer webs with light buff; secondaries similar, but rather less strongly glossed with green; primaries slate color, with a very faint greenish gloss and a decided "chalky" cast in some lights, their shafts glossy black. Tail dark greenish slate, strongly glossed with bronze-green. Under parts uniform deep slate-gray, rather darker anteriorly; edge of wing white. Bill wholly black; bare loral region blackish; legs and feet orange-brown (orange or salmon color in life?). Length (skin), 15.40; wing, 7.07; tail, 2.50; culmen, 2.50; depth of bill through nostrils, 0.55; tarsus, 2.02; middle toe, 1.73.

Adult female.—No. 116030, U.S.N.M.; same locality, etc. Similar to the adult male, but darker; the pileum and occipital crest less strongly glossed with green, the dorsal and scapular plumes rather less developed and much less glaucous, the sides of the head sooty black, the neck also nearly black, with only traces of white along the median line of the anterior portion, and the under parts dark sooty slate. Lower edge of mandible light brownish, and bare skin of lores and orbits largely light colored (yellowish or orange in life?); legs and feet mainly dusky brown. Length (skin), about 16.25; wing, 7.20; tail, 2.60; culmen, 2.64; depth of bill at nostrils, 0.55; tarsus, 2.13; middle toe, 1.90.

Young male.—No. 116190, U.S.N.M.; Hood Island, April 7, 1888; C. H. Townsend. Pileum and occipital crest sooty black, the feathers with rusty shaft-streaks, broadest on forehead, obsolete on occipital crest, which has a very faint bronzy gloss; neck and sides of head rusty cinnamon-rufous, broadly streaked with dull black; chin, throat, and median line of fore neck (broadly) white heavily streaked or dashed with black, the lengthened feathers of the lower fore neck dark brownish gray with a broad median streak or stripe of white. Back, scapulars, rump, and upper tail-coverts uniform deep sooty brown, the feathers

broad and rounded at ends, not pointed and elongated as in adults; wing-coverts dusky grayish brown, broadly margined and spotted with cinnamon-rufous; remiges as in the adult, but primaries marked with a small terminal triangular spot of white, except on three or four outermost quills. Under parts deep grayish sooty, striped with buff. Bill black, with lower portion of mandible light brownish; naked loral region dusky, with a light-colored broad stripe along upper edge; legs and feet brownish black, the soles of the latter light brown.[1]

There are very decided differences in the coloration of specimens from the different islands, but without a larger series I am unable to determine the significance or value of these variations. Thus, two adults collected by Dr. William H. Jones, U. S. N., one (No. 101322, U.S.N.M.) on Chatham Island, August 19, 1884, the other (No. 101327, U.S.N.M., adult male) without known locality, but probably from the same island, are decidedly lighter in color than those from James Island (the type locality of *B. plumbeus*). They have the wing-coverts distinctly margined with light tawny; the general color of the fore neck distinctly brown (light Prout's brown) instead of slate-gray, and both have a distinct yellowish or light greenish stripe along the lower edge of the mandible. Their measurements are given in the subjoined table.

An adult male from Hood Island (No. 116088, U.S.N.M, April 7, 1888; C. H. Townsend) is most like the James Island specimen, but has scarcely a trace of brown on the lower fore neck, and has neither white nor black markings along the median line of the fore neck, throat, and chin, which is light gray interrupted occasionally by the general blackish slate color of the neck.

An adult male from Abingdon Island (No. 116137, U.S.N.M., April 16, 1888; C. H. Townsend) has the whole front part of the neck very light gray, the upper fore neck and the throat with a few dusky flecks.

Possibly these differences are merely individual variations, but a comparison of several specimens from each island is much to be desired.

[1] The fresh colors of the unfeathered parts in a young female obtained by Mr. Adams (locality not stated) were as follows:

"Legs yellowish green with some of the large plates on front of the tarsus almost as dark as burnt umber and the scales on the upper surface of the toes same color; back of tarsus, heel, and soles of feet yellow; eyelids and lores yellow with a tinge of purplish over and beneath the eyes; under part of mandible same greenish yellow as legs; iris crimson. Total length, 21.50." (Adams, MS.)

Measurements of Butorides plumbeus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill at base.	Tarsus.	Middle toe.
101322	U. S.	Adult[1]	Chatham Island ..	Aug. 19, 1884	7.50	2.60	2.52	0.57	1.95	1.85
101327	U. S.	Adult male ...	.....do (?).....	(?)	7.00	2.50	2.55	.58	2.10	1.85
116029	U. S.	.....do	James Island	Apr. 11, 1888	7.07	2.50	2.50	.57	2.02	1.73
116030	U. S.	Adult female .	.....do	.....do	7.20	2.60	2.64	.59	2.13	1.90
583	B. & A.	.....do	.....do	Aug. 18, 1891	6.98	2.28	2.55	.57	1 85	1.76
116088	U. S.	Adult male ...	Hood Island	Apr. 7, 1888	7.48	2.65	2.80	.59	2 15	1.90
116089	U. S.	Adult female .	.....do	.... do	7.20	2.58	2.58	.53	2 00	1.87
209	B. & A.	Adult male ...	.....do	July 5, 1891	7.15	2.40	2.77	.60	1 72	1.95
116137	U. S.	.....do.[2].....	Abingdon Island .	Apr. 16, 1888	7.45	2.60	2.60	.60	2.00	1.88
178	B. & A.	Adult female .	Charles Island....	July 1, 1891	7.00	2.35	2.65	.60	1.93	1.66
226	B. & A.	Adult male ...	Gardner Island...	July 6, 1891	7.45	2.05	2.45	.59	2.10	2.06
269	B. & A.	.....do	Barrington Island	July 9, 1891	7.00	2.30	2.47	.59	1.73	1.65
396	B. & A.	.....do	Albemarle Island.	July 14, 1891	7.00	2.25	2.65	.59	1.78	1.65
			Average.....	.....	7.18	2.43	2.59	.58	1.95	1.74

[1] "Upper mandible black, lower whitish; feet slate color." (Dr. William H. Jones, U. S. N., MS.)
[2] "Breeding. Feet and legs reddish." (C. H. Townsend, MS.)

Genus NYCTANASSA, Stejneger.

Nycterodius, REICHENBACH, Syst. Av., 1852, p. xvi (nec *Nycterodius*, MACGILLIVRAY, 1842). Type, *Ardea violacea*, Linnæus.

Nyctanassa, STEJNEGER, Proc. U. S. Nat. Mus., X, Aug. 3, 1887, p. 295. Same type.

Range.—Warmer parts of America. Galapagos Archipelago (the common continental and only known species).

NYCTANASSA VIOLACEA (Linnæus).

Ardea violacea, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 143.

Nycticorax violaceus, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 128 (Galapagos Archipelago).

Ardea violacea, L. (var. ?), SUNDEVALL, Proc. Zool. Soc., 1871, pp. 125, 128 (Galapagos).

Nyctanassa violacea, STEJNEGER, Proc. U. S. Nat. Mus., X, Aug. 3, 1887, p. 295, footnote.

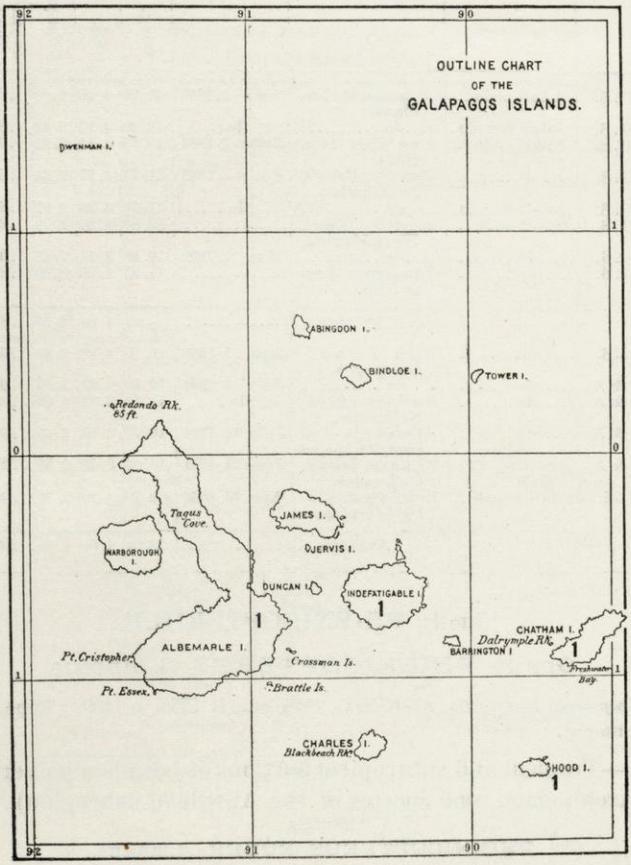
Nycticorax pauper, SCLATER and SALVIN, Proc. Zool. Soc., 1870, pp. 323, 327 (Indefatigable Island, Galapagos Archipelago).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 498 (Indefatigable Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 114 (Hood and Indefatigable islands).

Range.—Warm-temperate North America, east of Rocky Mountains, whole of Middle America, and warmer parts of South America. Galapagos Archipelago: Albemarle Island (Baur and Adams); Hood Island (*Albatross*, Baur and Adams); Chatham Island (Baur and Adams); Indefatigable Island (Habel).

Adult specimens of the Yellow-crowned Night Heron from the Galapagos Islands are quite indistinguishable from North American examples, the *Nycticorax pauper* of Sclater and Salvin having been based on immature birds, in a stage of plumage which occurs also among continental specimens. Placing together four adults from the Galapagos

with one from Socorro Island, off west coast of Mexico, and three from Louisiana, I find it impossible to detect any differences of coloration or proportions that are not of a purely individual character.

ASCERTAINED RANGE OF THE GENUS NYCTANASSA, STEJNEGER, IN THE GALAPAGOS ARCHIPELAGO.



1. *Nyclanassa violacea* (Linnæus).

Measurements of Nyctanassa violacea.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill at posterior end of nostril.	Tarsus.	Middle toe.
90357	U. S.	Adult male	Wheatland, Indiana.	May 3, 1883	11.25	4.35	2.98	.90	4.00	2.53
90350	U. S.	Adult female	do	do	10.90	4.15	2 62	.81	3.80	2.28
101406	U. S.	Adult male	Lee County, Iowa.	June 2, 1883	10.65	4.12	2.92	.90	3.75	2.42
108412	U. S.	do	Cameron Parish, Louisiana.	June —, 1883	11.75	4.27	2.63	.88	3.95	2.57
108413	U. S.	Adult female	do	do	11.50	4.32	2.92	.91	4.10	2.45
50862	U. S.	Adult male	Socorro Island, West Mexico.		10.85	4.22	2.70	.95	3.32	2.50
117501	U. S.	do	do	Mar. 7, 1889	10.50	4.18	2.45	.91	3.22	2.40
67920	U. S.	do	Talamanca, Costa Rica.		11.25	4.28	2.90	.85	3.97	2.38
			Average		11.08	4.24	2.76	.89	3.76	2.44
116087	U. S.	do	Hood Island, Galapagos.	Apr. 7, 1888	10.70	4.28	2.83	.95	3.70	2.47
229	B. & A.	do	do	July 6, 1891	10.60	3.85	2.80	.92	3.60	2.65
227	B. & A.	do	Gardner Island, Galapagos.	do	11.15	3.87	2.65	.93	3.70	2.47
305	B. & A.	do	Albemarle Island, Galapagos.	July 14, 1891	10.70	4.00	2.45	.95	3.60	2.50
117	B. & A.	Juvenile female.	Chatham Island, Galapagos.	June 25, 1891	10.00	3.88	2.56	.91	3.60	2.40
116060	U. S.	Adult female	Indefatigable Island, Galapagos.	Apr. 12, 1888	10.70	4.20	2.80	.90	3.50	2.35
			Average		10.64	4.01	2.68	.93	3.61	2.47

Family PHŒNICOPTERIDÆ.

Genus PHŒNICOPTERUS, Linnæus.

Phœnicopterus, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 139. Type, *P. ruber*, Linnæus.

Range.—Tropical and subtropical portions of both hemispheres. Galapagos Archipelago (one species of the Antillean subregion).

PHŒNICOPTERUS RUBER, Linnæus.

Phœnicopterus ruber, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 139.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 498 (Galapagos Archipelago).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889 (1890), p. 114 (James and Charles islands).—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., I, 1884, p. 415.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 121.

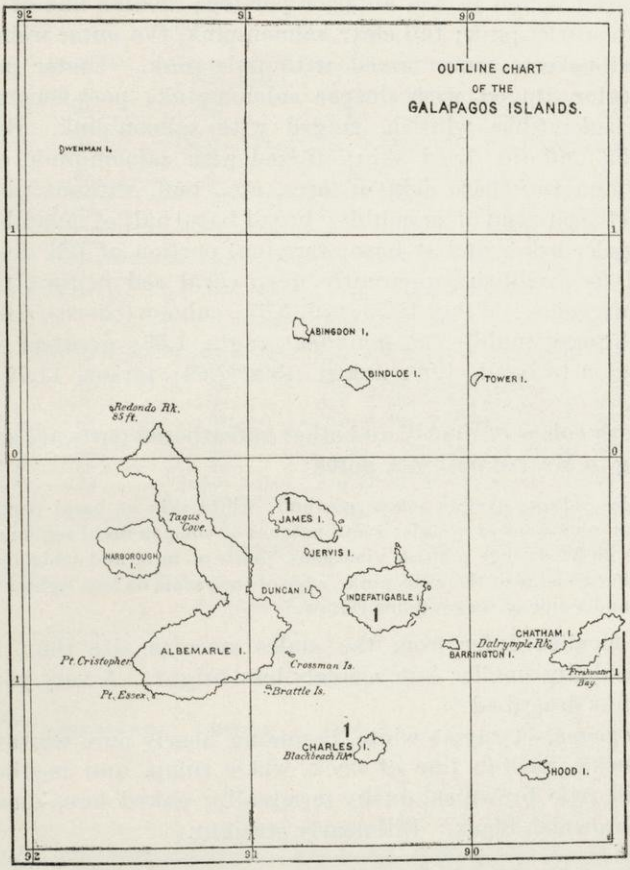
Phœnicopterus glyphorhynchus, GRAY, Ibis, 1869, p. 442, pl. XIV, fig. 5 (Galapagos Islands).

Range.—Coasts of the Caribbean Sea and Gulf of Mexico (in part), north to the Bahamas and southern Florida. Galapagos Archipelago: Charles and James islands (Townsend, Baur and Adams); Indefatigable Island (Habel[1]).

[1] Seen only.

Having carefully compared a series of twenty adult flamingoes from the Galapagos with a still larger number from the Bahamas, I am unable to appreciate any difference between them except the slightly smaller average size and distinctly paler coloration of the former. Regarding the obvious color differences, however, it should be noted that the Bahama series is a selected lot from a much larger number of

ASCERTAINED RANGE OF THE GENUS PHŒNICOPTERUS, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Phœnicopterus ruber* (Linnæus).

exceptionally fine skins, and I feel very doubtful whether, if they were compared with a similar series of Galapagos specimens, any difference could be detected. Certain it is that while the brightest colored adult male from the Galapagos is decidedly less intensely colored than the majority of those from the Bahamas, specimens occur among the latter which are quite as pale as any of the Galapagos lot.

The brightest colored Galapagos male may be described as follows: No. 125851, U.S.N.M.; Charles Island, Galapagos, July 2, 1891; Messrs.

Baur and Adams. Head and neck entirely slightly pinkish flame scarlet, the feathers pinkish white at the base; the color is palest on the extreme anterior portion of the head, becoming very gradually brighter on the lower neck, where it is very rich pinkish flame scarlet. Wings rich pinkish flame scarlet, the tertials very slightly paler; secondaries and primaries uniform deep black, including shafts; upper back mixed flame scarlet and salmon-pink; scapulars pinkish white, some of the feathers more decidedly pink, and a few feathers of bright flame scarlet mixed in the anterior portion; median line of the back and rump scarlet-pink; tail clear salmon-pink, the outer webs deeper; upper tail-coverts more mixed with pale pink. Under parts pale salmon color, tinged with deeper salmon-pink; post-femoral region carmine-pink; tibiæ whitish, tinged with salmon-pink. Basal half of maxilla buff (in dried skin), tinged with salmon-pink, especially anteriorly on top; bare skin of lores, etc., buff, without pink tinge, except between rami of mandible; broad basal half of mandible bright scarlet, paler below and at base; terminal portion of bill deep black; legs and feet reddish (apparently deep coral red in life), the claws pusky horn color. Wing, 15.75; tail, 5.37; culmen (chord), 4.60; depth of bill through middle, at gonydeal angle, 1.66; greatest width of bill anterior to bend, 1.09; naked tibia, 7.60; tarsus, 11.75; middle toe, 2.75.[1]

The fresh colors of the bill and other unfeathered parts are as follows, according to Mr. Adams' MS. notes:

Iris naples yellow; eyelids ochraceous-buff; white skin at basal portion of bill tinged with same color as eyelids; small patches of color in nasal region same color as feathers on head; legs pinkish vinaceous, joints of tarsi and tibiæ lighter than wine purple, the edge of the webs pink; edge of each scale on legs lighter than other portions; under side of toes sulphur yellow.

Adult females differ from the males more in size than in color, being decidedly smaller but scarcely less bright. A very young bird may be thus described:—

Downy young.—Grayish white, becoming nearly pure white on forehead, cheeks, median line of back, whole rump, and median under parts; bill pale brownish, dusky terminally; naked lores dusky; legs and feet brownish black. Bill nearly straight.

[1] According to Mr. Adams' MS. notes, adult males are 3 feet 6½ inches to 3 feet 8½ inches in total length, adult females measuring 3 feet 3½ inches to 3 feet 3¾ inches.

Measurements of Phœnicopterus ruber.

a. GALAPAGOS SPECIMENS.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill across middle.	Greatest width of bill anterior to bend.	Naked tibia.	Tarsus.	Middle toe.
116032	U. S.	Adult male	James Island, Galapagos.	Apr. 12, 1888	16.25	5.80	5.03	1.65	1.15	8.80	12.00	3.15
(a)	B. & A.	do	do	Aug. 12, 1891	16.50	5.58	4.71	1.61	1.11	8.00	11.40	3.03
(b)	B. & A.	do	do	do	15.95	5.00	4.90	1.58	1.10	8.60	12.05	2.93
(c)	B. & A.	do	do	do	16.25	5.07	4.80	1.60	1.08	8.35	12.00	3.21
116139	U. S.	do	Charles Island, Galapagos.	Apr. 8, 1888	15.75	5.73	5.02	1.62	1.05	8.60	13.00	.....
116140	U. S.	do	do	do	16.10	5.85	5.02	1.65	1.12	8.20	12.30	3.00
174	B. & A.	do	do	July 1, 1891	16.40	5.87	4.70	1.53	1.04	8.00	12.00	3.10
176	B. & A.	do	do	do	16.15	5.61	5.02	1.59	1.10	9.00	12.05	3.03
181	B. & A.	Immature male.	do	do	15.15	5.33	4.46	1.53	.97	8.15	11.95	3.06
182	B. & A.	Adult male	do	July 2, 1891	15.85	5.90	4.65	1.60	1.10	8.20	12.00	3.02
184	B. & A.	do	do	do	15.75	5.37	4.60	1.66	1.09	7.60	11.75	2.75
185	B. & A.	do	do	do	15.70	4.98	4.67	1.49	1.02	7.20	11.00	2.94
			Average		15.99	5.51	4.80	1.59	1.08	8.22	11.96	3.02
116142	U. S.	Adult female	Charles Island, Galapagos.	Apr. 8, 1888	14.75	5.15	4.77	1.45	1.00	6.10	10.20	2.70
125852	U. S.	do	do	July 2, 1891	14.40	5.35	4.88	1.48	1.10	7.00	10.40	2.72
116141	U. S.	do	do	Apr 8, 1888	14.25	4.60	4.42	1.38	.98	6.00	9.50	.....
177	B. & A.	do	do	July 1, 1891	15.50	5.27	4.30	1.50	1.00	6.70	10.20	2.95
179	B. & A.	do	do	do	15.00	5.10	4.48	1.40	1.00	7.45	10.20	2.70
180	B. & A.	do	do	do	14.90	5.55	4.50	1.44	1.00	7.30	10.40	2.75
183	B. & A.	do	do	July 2, 1891	14.75	5.00	4.70	1.46	1.07	6.80	10.25	2.86
(d)	B. & A.	do	James Island, Galapagos.	Aug. 12, 1888	15.30	5.19	4.61	1.51	1.00	7.00	10.50	2.83
(e)	B. & A.	do	do	do	15.00	5.42	4.48	1.48	1.00	6.90	10.70	2.82
			Average		14.87	5.18	4.57	1.46	1.02	6.81	10.26	2.79

b. BAHAMAN SPECIMENS.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Greatest height of bill through middle.	Greatest width of bill.	Naked tibia.	Tarsus.	Middle toe.
135004	U. S.	Adult male	Bahamas	Mar. 23, 1893	16.50	6.00	5.35	1.67	1.12	8.30	14.40	3.12
135005	U. S.	do	do	Mar. 12, 1893	16.00	6.30	5.15	1.57	1.05	8.25	11.65	3.00
135006	U. S.	do	do	Feb. 26, 1893	15.75	6.00	5.00	1.63	.99	8.85	12.50	3.20
135007	U. S.	do	do	Feb. 9, 1893	17.10	6.20	5.20	1.62	1.12	9.50	13.75	3.42
135009	U. S.	do	do	May 26, 1892	16.80	5.80	5.08	1.75	1.10	9.80	14.30	3.35
.....	.....	do	do	Mar. 31, ——	16.50	....	5.05	....	....	....	13.25	3.20
.....	.....	do	do	Mar. 8, ——	16.00	....	5.05	....	....	....	13.25	3.05
			Average		16.38	6.06	5.13	1.65	1.08	8.94	13.30	3.19
135008	U. S.	Adult female	Bahamas	Feb. 17, 1893	15.00	5.15	4.70	1.43	.93	7.75	11.00	2.70
135010	U. S.	do	do	Mar. 3, 1893	15.25	5.48	4.80	1.47	.92	8.00	12.20	2.95
135011	U. S.	do	do	Mar. 11, 1893	14.75	5.25	4.78	1.47	1.00	6.80	10.20	1.67
135012	U. S.	do	do	Feb. 18, 1893	14.65	5.12	4.58	1.44	1.02	7.50	10.50	2.82
135013	U. S.	do	do	Mar. 10, 1893	15.40	5.50	4.63	1.40	.95	8.30	11.60	2.80
135014	U. S.	do	do	May 6, 1892	14.75	5.70	4.50	1.49	1.00	6.25	9.00	.....
135015	U. S.	do	do	May 26, 1892	15.10	5.40	4.85	1.50	.92	7.60	10.80	.....
.....	D. P. I.	do	do	Mar. 27, 1893	15.00	....	4.60	....	....	....	11.60	2.80
.....	D. P. I.	do	do	Mar. 3, 1893	14.40	....	4.90	....	....	....	11.75	2.75
			Average		14.92	5.37	4.70	1.46	.96	7.46	10.96	2.64

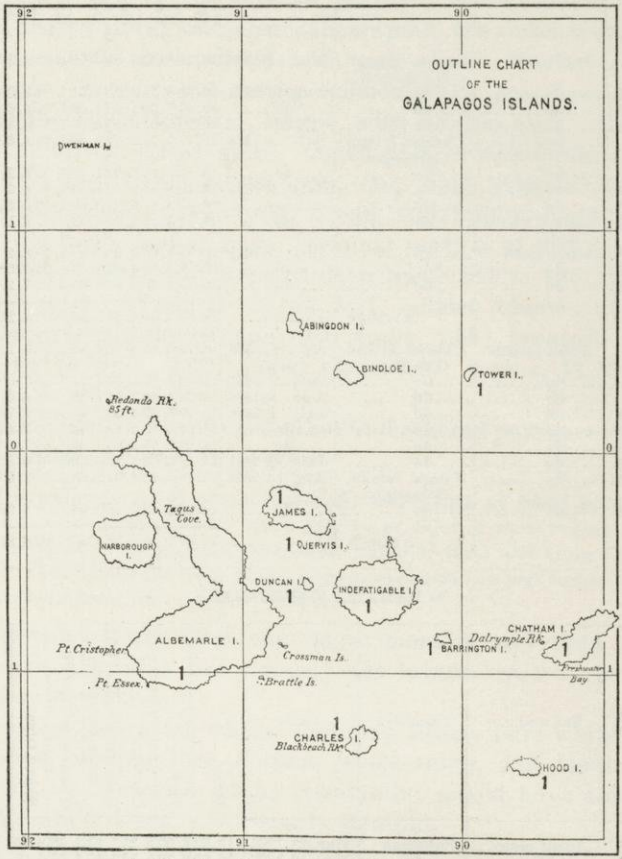
Family ANATIDÆ.

Genus PŒCILONETTA, Eyton.

Pœcilonetta, EYTON, Monog. Anat., 1838, p. 16. Type, *Anas bahamensis*, Linnæus.

Range.—South America in general, and north through the West Indies to the Bahamas. Galapagos Archipelago (one peculiar species).

ASCERTAINED RANGE OF THE GENUS PŒCILONETTA, EYTON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Pœcilonetta galapagensis*, Ridgway.

PŒCILONETTA GALAPAGENSIS, Ridgway.

Pœcilonetta bahamensis (nec *Anas bahamensis* LINNÆUS), GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 135 (Galapagos Archipelago).

Anas bahamensis (nec LINNÆUS), SUNDEVALL, Proc. Zool. Soc., 1871, p. 126 (Galapagos Islands).

Dafila bahamensis, SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 499 (Indefatigable Island); Proc. Zool. Soc., 1883, p. 428 (Charles Island).

Pœcilonetta galapagensis, RIDGWAY, Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, p. 115 (Charles Island, Galapagos Archipelago; collection U. S. Nat. Mus.).

Specific characters.—Similar to *P. bahamensis* (Linnæus), but white on sides of head thickly speckled with brown (instead of being quite immaculate) and top of head grayer brown.

Range.—Galapagos Archipelago: No locality (Darwin, Kinberg); South Albemarle Island (Baur and Adams); Duncan Island (Baur and Adams); Charles Island (Markham, Townsend, Baur and Adams); Hood Island (Habel,[1] Baur and Adams); Chatham Island (Baur and Adams); Barrington Island (Baur and Adams); Indefatigable Island (Habel, *Albatross*, Baur and Adams); Jervis Island (Baur and Adams); Tower Island (Baur and Adams).

Adult male.—Type, No. 115931; U.S.N.M.; Charles Island, Galapagos, April 8, 1888; U. S. S. *Albatross*. Pileum, sides of head down to below the eyes, and hind neck, pale sepia brown or hair brown, speckled with dusky, these markings larger on pileum; back and anterior scapulars dusky grayish brown, the feathers with paler grayish brown margins; lower back and rump plain dusky grayish brown; posterior scapulars dusky grayish brown, margined with dull buffy; wing-coverts plain brownish slate, the greater sharply tipped with deep cinnamon-buff; secondaries metallic green, washed with copper-bronze, crossed about midway of the exposed portion by a narrow band (about 0.12–0.15 wide) of velvety black, the succeeding portion deep cinnamon-buff; tertials broadly edged with paler cinnamon-buff; primaries dusky brownish slate. Upper tail-coverts and tail pale pinkish buff (middle tail-feathers nearly white), the concealed portions of the feathers more grayish. Chin, throat, and fore neck immaculate white, this separated from the brown of sides of head and neck by a speckled space about 0.40 of an inch wide; rest of under parts pale brown (intermediate between fawn color and isabella color), thickly spotted with dusky, the flanks pale fawn color, with larger spots, and the under tail-coverts plain pale fawn color, the longer ones with dusky mesial streaks; axillars white, the terminal portion, mesially, mottled with dusky; under wing-coverts plain brownish slate, the last row white. Bill blackish, with a large space on lower basal portion of maxilla reddish; legs and feet dusky brownish. Length (skin), 16.75; wing, 8.10; tail, 3.70; culmen, 1.78; greatest width of bill, 0.72; tarsus, 1.48; middle toe, 1.62.

Adult female.—No. 116143, U.S.N.M.; same locality, etc. Similar to the male, but smaller, lower fore neck speckled with dusky brown, tail-coverts spotted with dusky, and reddish space at lower base of maxilla much smaller. Length (skin), 16; wing (quills molting); tail, 3.15; culmen, 1.60; greatest width of bill, 0.65; tarsus, 1.42; middle toe, 1.55.

Specimens of *P. bahamensis* with which the above examples have been compared, and from all of which they differ in the characters mentioned in the diagnosis, are from the West Indies (Bahamas, 1; Guadeloupe, 3; Barbuda, 1); Buenos Ayres, 1, and Chile, 2.

The collection of Messrs. Baur and Adams contains 15 additional

[1] Not collected.

specimens (13 from Chatham, 2 from Albemarle). These show that the characters upon which *P. galapagensis* was separated from *P. bahamensis* are quite constant, every specimen, females as well as males and young as well as adults, showing the distinct speckling of the sides of the head.

"Light-colored triangular space on sides of upper mandible at base madder brown tinged with vermilion." (Adams, MS.)

Genus QUERQUEDULA, Stephens.

Querquedula, STEPHENS, Gen. Zool., XII, Pt. II, 1824, p. 142. Type, *Anas querquedula*, Linnæus.

Range.—Nearly cosmopolitan. Galapagos Archipelago (one species, said to be identical with a species of the more southern parts of South America).

QUERQUEDULA VERSICOLOR (Vieillot).

Anas versicolor, VIEILLOT, Nouv. Dict. d'Hist. Nat., V, 1816, p. 109.
Querquedula versicolor, CASSIN, Gilliss's Exped., II, 1856, p. 203.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 499 (Galapagos, fide Sundevall).—SCLATER and SALVIN, Proc. Zool. Soc., 1876, p. 388 (description and synonymy).
Anas maculirostris, LICHTENSTEIN, Verz. Doubl. 1823, p. 84.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 126 (Galapagos Islands).

Range.—Southern South America, north to Argentine Republic and Chile. Galapagos Archipelago (no locality, Kinberg).

Family COLUMBIDÆ.

Genus NESOPELIA, Sundevall.

Nesopelia, SUNDEVALL, Meth. Nat. Av. Disp., 1872, p. 99. Type, *Zenaida galapagoensis*, Gould.

Generic characters.—Similar to *Zenaida*, Bonaparte,[1] but tail proportionally shorter and less graduated, composed of 12 instead of 14 rectrices; bill longer and stouter, with arched terminal portion of maxilla half as long as middle toe (without claw) instead of much less; legs and feet larger and stouter.

Range.—Peculiar to the Galapagos Archipelago.

NESOPELIA GALAPAGOENSIS (Gould).

Colombi-Galline des Gallapagos, NÉBOUX, Rev. Zool., 1840, p. 290 (Charles Island, Galapagos Archipelago).
Zenaida galapagoensis, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 115, pl. XLVI (Galapagos Archipelago).—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable and Bindloe islands.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 499 (Charles, Indefatigable, Bindloe, and James islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 116 (Indefatigable, Duncan, James, and Hood islands).

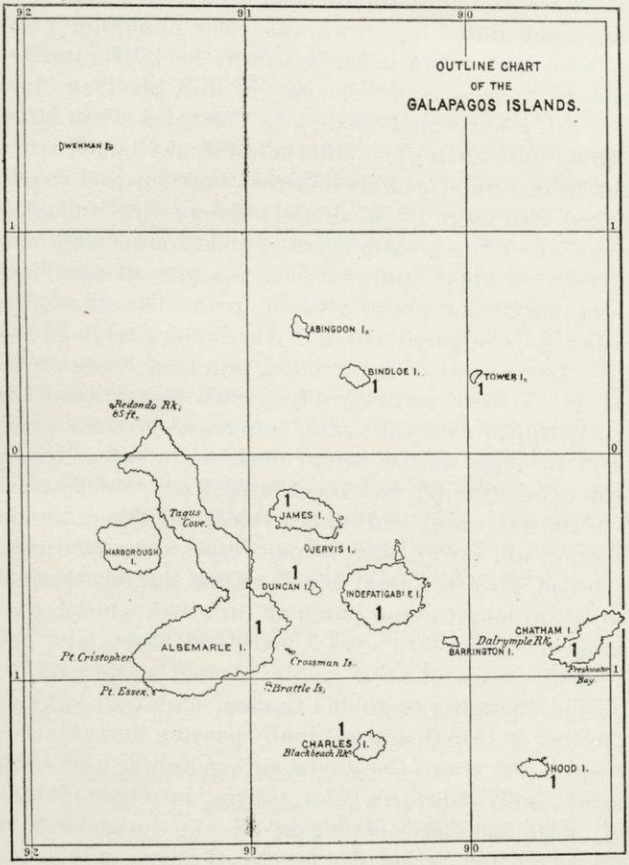
[1] *Zenaida*, Bonaparte, Geog. and Comp. List, 1838, p. 41. Type, *Columba zenaida*, Bonaparte.

Columba (Zenaida) galapagensis, SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (James Island).

Nesopelia gallapagensis, SUNDEVALL, Meth. Nat. Av., 1872, p. 99.

Nesopelia galapagoensis, SALVADORI, Cat. Birds Brit. Mus., XXI, 1893, p. 391 (Indefatigable and Bindloe islands).

ASCERTAINED RANGE OF THE GENUS NESOPELIA, SUNDEVALL.



1. *Nesopelia galapagoensis* (Gould).

Specific characters.—Wing-coverts conspicuously spotted with black and streaked with white, the outermost middle and greater coverts with their outer webs almost wholly white; a light-colored longitudinal auricular band, margined above and below by a dusky streak; tail with a black subterminal band, extending entirely across all the feathers, except sometimes the middle pair; under tail-coverts and tip of tail gray or brownish gray. Wing, 4.72–5.45; culmen, 0.55–0.74; tarsus, 0.82–1.03.

Range.—Galapagos Archipelago: Albemarle Island (Habel);[1] Duncan Island (*Albatross*); Charles Island (Néboux, Jones); Hood Island (Habel,[1]

[1] Not collected.

Albatross); Chatham Island (Jones, Baur and Adams); Indefatigable Island (Darwin ?, Habel, *Albatross*); James Island (Kinberg, *Albatross*, Baur and Adams); Tower Island (Baur and Adams); Bindloe Island (Habel).

Adult male.—No. 116020, U.S.N.M.; James Island, Galapagos, April 11, 1888; C. H. Townsend. Top of head dull chocolate brown, lighter on forehead, much duller on crown, the color changing gradually on occiput and hind neck to warm sepia brown; back brighter brown, the lower portion with large roundish spots of dull blackish; lower back, rump, upper tail-coverts and median tail-feathers plain olive brown, the last with an indication of a subterminal dusky band; wing-coverts mainly light brown (intermediate between broccoli and wood brown), thickly marked with large roundish and oblong spots of black (crowded into a large patch on the greater coverts) and interspersed with streaks of white (bordering upper and posterior margins of the black spots), the outermost middle and greater coverts with their outer webs chiefly white, forming an elongated patch of this color; tertials more rusty brown, with a large, posteriorly rounded, patch of black on each web; secondaries dusky, very narrowly edged with pale grayish brown and rather broadly tipped with the same; innermost primaries colored like secondaries, but longer quills (except outermost) narrowly edged with white; outer webs of rectrices, except lateral one, chiefly olive brown, both webs of the outermost and inner webs of the others, except middle pair, deep gray, all, except middle pair, crossed by a broad band of black, the broad gray terminal band rather lighter than the basal portion. A broad longitudinal patch of brownish whitish on auricular region (commencing beneath eyes), margined above and below by a streak of black;[1] sides of neck richly glossed with bright metallic solferino purple, changing to golden bronze; chin dull light vinaceous-cinnamon, deeper on throat, and gradually passing into vinaceous-chocolate on fore neck and chest, the breast rather lighter and slightly more cinnamomeous; belly pale fawn color, passing into pale pinkish buff on anal region; sides and flanks plain gray (No. 7), the under wing-coverts and axillars similar but rather deeper (No. 6 gray); under tail-coverts mouse gray, tinged with light brown at tips, the inner webs of the longest feathers with a concealed longitudinal space of dusky. Bill black; legs and feet (in dried skin) deep brownish yellow.[2] Length (skin), 8.90; wing, 5.40; tail, 3; culmen, 0.64; tarsus, 1; middle toe, 0.90.

[1] The head of the specimen described is in rather bad condition, and does not show distinctly the exact character of the markings. In examples not thus defective, the uppermost black streak passes underneath the bare orbital space to the anterior angle of the same, where it meets another but narrower black line which borders the upper margin of the bare orbital space for its whole length, running into the auricular stripe at the posterior angle of the orbital space.

[2] "Bare skin round eye cobalt blue, tending toward purplish; feet and legs a little darker than coral red." (Adams, MS.) Iris dark brown (Habel).

Adult female.—No. 116021, U.S.N.M.; same data. Similar to the adult male, as described, but smaller and rather duller colored; the metallic gloss on sides of neck less brilliant and much restricted; the black spots on wing-coverts rather more crowded; top of head less purplish brown, and under parts more cinnamomeous, especially on belly. Length (skin), 7.80; wing, 4.90; tail, 2.92; culmen, 0.60; tarsus, 0.88; middle toe, 0.84.

Young.—No. 52410, U.S.N.M.; James Island, Galapagos; received from Professor Sundevall. Much duller in color than adults, with markings and colors far less strongly contrasted; spots on wing-coverts and scapulars dark sooty brown, intermixed with smaller spots of light cinnamon; prevailing color of under parts deep wood brown, darker on chest, where the feathers have paler terminal margins; the head and neck duller brown, indistinctly spotted above, especially on occiput, with dull cinnamon, the sides of the neck without trace of metallic gloss; remiges conspicuously margined with light rusty, and general color of rectrices deep broccoli brown or drab instead of gray.

There are some slight variations in plumage noticeable between specimens from different islands, which may or may not be of local significance, the series of specimens being too small to determine the question. Examples from Chatham Island are, as may be seen from the subjoined measurements, decidedly smaller than those from other localities, but having only one skin for examination, and that a very poor one (those belonging to Dr. Baur having been returned to him), I am unable to state whether there are any other differences.

Measurements of Nesopelia galapagoensis.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
116020	U. S.	Adult male ..	James Island....	Apr. 11, 1888	5.40	3.00	0.64	1.00	0.90
115899	U. S.	.....do	Duncan Island.	Apr. 13, 1888	5.10	3.02	.70	.92	.87
125993	U. S.	.....do	.....do.....	Apr. 2, 1891	5.32	3.13	.68	1.00	.90
			Average ..	.....	5.21	3.07	.69	.96	.88
116054	U. S.	.... do	Indefatigable Island.	Apr. 12, 1888	5.20	2.90	.74	1.00	.88
125994	U. S.	.....do	.....do.....	Apr. 2, 1891	5.20	2.95	.....	.90	.85
452	B. & A.	.....do	.....do.....	Aug. 7, 1891	4.82	2.50	.72	1.01	.95
453	B. & A.	.....do	.....do.....	.....do	5.12	2.70	.68	1.01	.92
			Average ..	.....	5.08	2.76	.71	.98	.90
101318	U. S.	Adult male ?.	Chatham Island.	Aug. 19, 1884	4.90	2.62	.65	.93	.88
102	B. & A.	Adult male ..	.....do.....	June 22, 1891	4.85	2.40	.70	.91	.88
110	B. & A.	.....do	.....do.....	.....do	4.80	2.25	.70	.82	.91
126	B. & A.	Adult male?.	.....do.....	June 25, 1891	4.90	2.45	.72	.90	.90
a	B. & A.	Adult male ..	.....do.....	June 13, 1891	4.85	2.20	.70	1.00	.92
			Average ..	.....	4.86	2.40	.69	.91	.90
116081	U. S.	.....do	Hood Island.....	Apr. 7, 1888	5.22	3.00	.68	.95	.87
116082	U. S.	.....do	.....do.....	.....do	5.45	3.12	.72	.98	.90
149819	U. S.	.....do	.....do.....	.....do	5.40	3.15	.70	1.03	.88
149820	U. S.	.....do	.....do.....	.....do	5.35	3.02	.70	.95	.90
			Average ..	.....	5.35	3.07	.70	.97	.89

Measurements of Nesopelia galapagoensis—Continued.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
116021	U. S.	Adult female.	James Island....	Apr. 11, 1888	4.90	2.92	.60	.88	.84
116022	U. S.	.....do.....	.....do.....	.....do.....	4.85	2.85	.61	.86	.79
116023	U. S.	.....do.....	.....do.....	.....do.....	4.87	2.68	.65	.88	.80
116024	U. S.	.....do.....	.....do.....	.....do.....	4.77	.....	.60	.93	.80
			Average		4.85	2.81	.61	.89	.81
115898	U. S.	Adult female?	Duncan Island..	Apr. 13, 1888	4.73	2.70	.59	.88	.76
116056	U. S.	Adult female.	Indefatigable Island.	Apr. 12, 1888	4.85	2.70	.63	.90	.80
116057	U. S.	.....do.....	.....do.....	.....do.....	4.73	2.63	.55	.90	.80
			Average		4.79	2.66	.59	.90	.80
116083	U. S.	.....do.....	Hood Island.....	Apr. 7, 1888	4.90	2.70	.65	.91	.80
116084	U. S.	.....do.....	.....do.....	.....do.....	4.88	2.72	.68	.92	.81
149822	U. S.	.....do.....	.....do.....	.....do.....	4.72	2.68	.63	.85	.79
			Average		4.83	2.70	.65	.89	.80

Family RALLIDÆ.

Genus PORZANA, Vieillot.

Porzana, VIEILLOT, Analyse, 1816, p. 61. Type, *Rallus porzana*, Linnæus.

Range.—Cosmopolitan. Galapagos Archipelago (two peculiar species).

PORZANA SPILONOTA (Gould).

Zapornia spilonota, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 132, pl. XLIX ("Galapagos Archipelago"[1]).

Ortygometra spilonota, Gray, List Gralla Brit. Mus., 1844, p. 119.

Porzana spilonota, SCLATER and SALVIN, Proc. Zool. Soc., 1868, p. 456; 1870, p. 323 (Indefatigable Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 500 (James and Indefatigable islands).

Creciscus spilonotus, SHARPE, Cat. Birds Brit. Mus., XXIII, 1894, p. 137 (James and Indefatigable islands).

Range.—Galapagos Archipelago: Indefatigable Island (Habel); James Island (Darwin, fide Salvin).

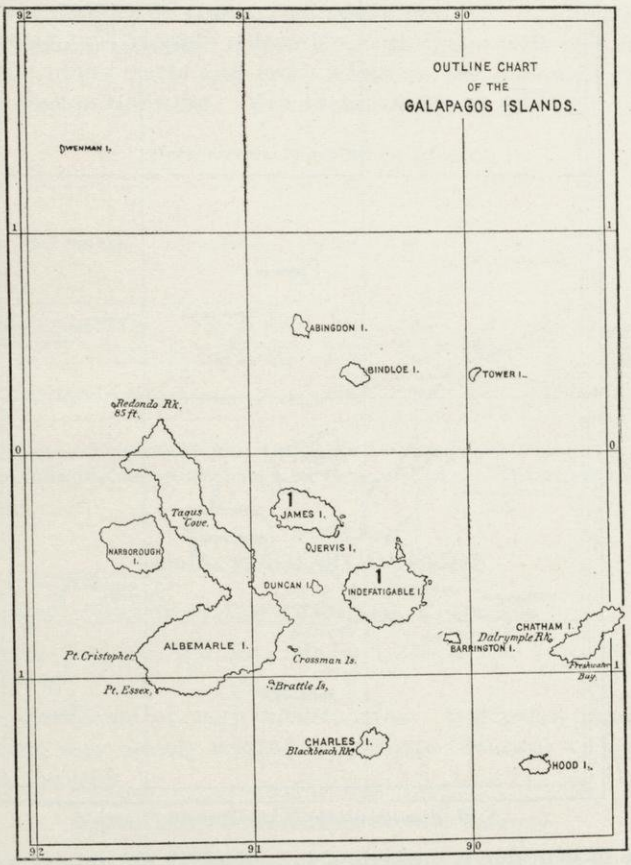
Specific characters.—"Adult male: Uniform chocolate brown, including the wings; lower back, rump, and tail blacker; quills dusky brown, externally chocolate like the back; head all round and under surface of the body dark slaty gray, the lores and sides of face blackish; sides of body and flanks chocolate brown; under tail-coverts blackish with white bars; 'bill black, the lower mandible blackish brown; feet olive-brown; iris red' (A. Habel). Total length, 4.5 inches; culmen, 0.7; wing, 2.75; tail, 0.9; tarsus, 0.8; middle toe and claw, 1.1.

"The male described is from Indefatigable Island, and three other specimens from the same island in the Salvin-Godman collection have

[1] The type specimen has apparently been lost.

tiny white spots on the wing-coverts and inner secondaries, and have the lower abdomen almost pure white. This peculiar character is not easily explained as a sign of age or sex, but it is probable that the white spots disappear with age, as they vary in number in all the specimens in the Museum. The type specimen seems not to have been transferred with the rest of the Zoological Society's Collection." (Sharpe.)

ASCERTAINED RANGE OF THE GENUS PORZANA, VIEILLOT, IN THE GALAPAGOS ARCHIPELAGO.



1. *Porzana spilonota* (Gould).
2. *Porzana galapagoensis*, Sharpe. ("Galapagos.")

PORZANA GALAPAGOENSIS, Sharpe.

Porzana spilonota (nec *Ortygometra spilonota*, GOULD), SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 500 (part).

Porzana galapagoensis, SHARPE, Cat. Birds Brit. Mus., XXIII, 1894, p. 113 (Galapagos; British Museum).

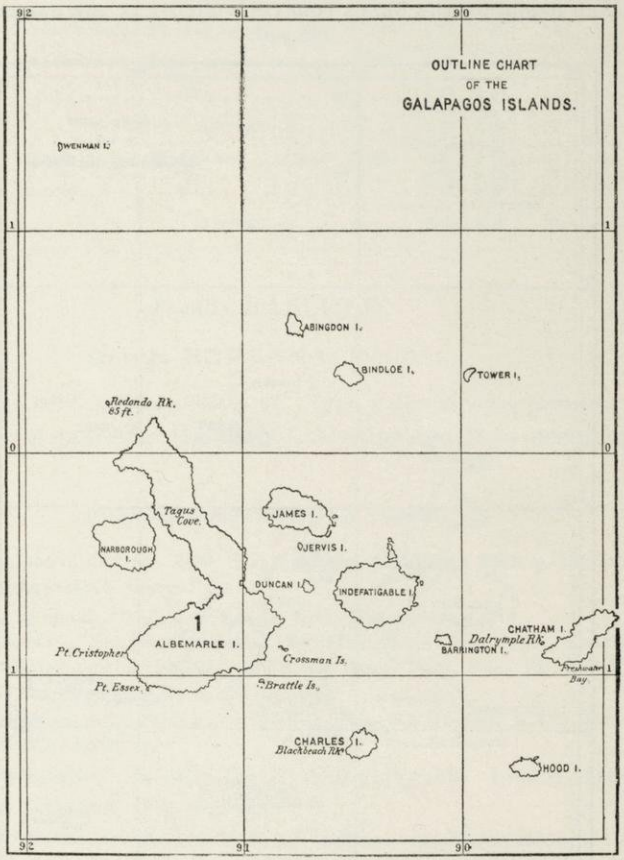
Specific characters.—"Adult male: Similar to *O.* [*Porzana*] *tabuensis*, but distinguished by the absence of the white edge to the first primary

and also by the shorter wings and tail. Total length, 5.5 inches; culmen, 1.6; wing, 2.9; tail, 1; tarsus, 1; middle toe and claw, 1.2.

"*Habitat.*—Galapagos Archipelago; exact island not indicated."

I have not seen a specimen of this species, which Mr. Sharpe places in a different genus from *P. spilonota*. *P. tabuensis* (*Rallus tabuensis*, Gmelin),[1] with which Mr. Sharpe compares it, is described as being plain

ASCERTAINED RANGE OF THE GENUS GALLINULA, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Gallinula galeata* (Lichtenstein) ?

chocolate brown above, darkening into blackish on upper tail-coverts and tail, the sides of head and under parts slate-gray, paler on throat, the under tail-coverts black, with white bars; bill black, feet reddish. It inhabits Polynesia, New Zealand, the Philippines, etc.

Genus GALLINULA, Brisson.

Gallinula, BRISSON, Orn., VI., 1760, p. 2. Type, *Fulica chloropus*, Linnæus.

Range.—Nearly cosmopolitan. Galapagos Archipelago (one species, apparently identical with the common continental one).

[1] Syst. Nat., I, 1788, p. 717.

GALLINULA GALEATA (Lichtenstein).

Crex galeata, LICHTENSTEIN, Verz. Doubl., 1823, p. 80.

Gallinula galeata, BONAPARTE, Amer. Orn., IV, 1832, p. 128.—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., I, 1884, 388.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 141.

Range.—Whole of tropical and most of temperate portions of America. Galapagos Archipelago: Albemarle Island (Baur and Adams).

There are three adult specimens of what I refer provisionally to this species in Dr. Baur's collection from Albemarle. These differ from continental examples of true *G. galeata* in narrower frontal shield and in the lighter hue of their coloration, with apparently less extent of olive on the upper parts and more white on the abdomen as well as along the edge of the wing. Measurements are as follows:

Measurements of Gallinula galeata.

Number.	Sex and age.	Date.	Wing.	Tail.	Culmen, including frontal shield.	Bill from nostril.	Tarsus.	Middle toe.
309	Adult female	July 15, 1891	6.36	2.60	1.65	0.57	1.94	2.48
310	Adult male	do	6.70	2.77	1.75	.62	2.03	2.35
393	do	July 30, 1891	6.36	2.66	1.70	.55	2.18	2.45
	Average		6.47	2.68	1.70	.58	2.05	2.43

"Frontal plate orange-vermilion; tip of beak citron yellow; base of beak poppy red; ring on tibia just below feathers same as frontal plate; legs and feet oil green." (Adams, MS.)

Family HÆMATOPODIDÆ.

Genus HÆMATOPUS, Linnæus.

Hæmatopus, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 152. Type, *H. ostralegus*, Linnæus.

Range.—Seacoasts of both hemispheres. Galapagos Archipelago (one species, very closely related to, perhaps identical with, a Lower California species).

HÆMATOPUS GALAPAGENSIS, Ridgway.

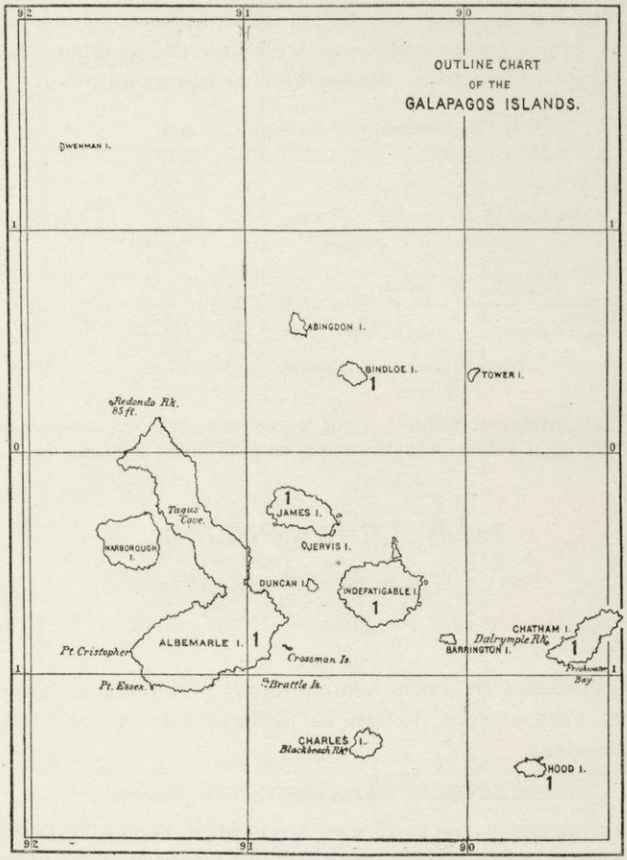
? *Hæmatopus palliatus* (nec TEMMINCK), SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island, Galapagos Archipelago).—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (Galapagos).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 502 (Indefatigable Island).

Hæmatopus galapagensis, RIDGWAY, Auk, III, July, 1886, p. 331 (Chatham Island, Galapagos Archipelago; U. S. Nat. Mus.); Proc. U. S. Nat. Mus., IX, 1886, p. 325 (Chatham Island, Galapagos Archipelago; full description); XII, 1889, pp. 116, 120, 123, 128 (James, Chatham, and Indefatigable islands).

Hæmatopus leucopus galapagensis, SEEBOHM, Geog. Distr. Charadr., 1887, pp. xxii, 307.

Specific characters.—Somewhat similar to *H. palliatus*, Temminck, but differing as follows: Back, scapulars, and wings sooty black, instead of grayish brown; shorter upper tail-coverts entirely black, the longer ones white, varied toward tips with blackish (the median coverts barred or transversely spotted); under primary-coverts chiefly black; white of the wing much more restricted. Wing, 9.50–10.05; tail, 3.50–4.06; culmen, 3.10–3.80; depth of bill at thickest portion in front of nostril, 0.47–0.53; tarsus, 2.07–2.20; middle toe, 1.61–1.89.

ASCERTAINED RANGE OF THE GENUS HÆMATOPUS, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Hæmatopus galapagensis*, Ridgway.

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams); Hood Island (Baur and Adams); Chatham Island (Jones); Indefatigable Island (Habel, *Albatross*); James Island (*Albatross*); Bindloe Island (Baur and Adams).

Adult male.—No. 125997, U.S.N.M.; Indefatigable Island, Galapagos, April 2, 1891; C. H. Townsend. Head, neck, and upper part of chest uniform glossy slate-black; rest of upper parts dark sooty brown; wing

with an elongated white patch, occupying the greater part of the innermost secondaries (not tertials), and more or less of the basal or subbasal portion of the outermost, the greater wing-coverts also margined terminally with white; upper tail-coverts white, mottled at tips with dusky, the longer coverts with half an inch or more of their terminal portion sooty black; tail similar in color to the back, but extensively white at base, this occupying about the basal half of the exterior feather. Lower part of chest irregularly clouded or blotched with dusky or white, this mottled space about 1 inch across in middle portion; rest of under parts, including under tail-coverts, immaculate white; under wing-coverts white, with considerable spotting of slate-black along the margin and a large patch of dark brownish slate on the carpo-metacarpal region; inner webs of primaries entirely uniform brownish slate. Bill (in dried skin) reddish; legs and feet (in dried skin) light brownish orange.[1] Length (skin), 16; wing, 10; tail, 3.80; culmen, 3.35; depth of bill at nostril, 0.40; greatest depth of bill, 0.50; tarsus, 2.12; middle toe, 1.61.

Immature.—No. 101320, U.S.N.M.; Chatham Island, August 16, 1884; Dr. William H. Jones, U. S. N. Essentially identical with the adult, as described, in plumage, but bill mainly dusky brown, and legs and feet much duller in color. "Bill red, nearly black toward tip; iris golden yellow; lids reddish; feet slate or grayish." (Jones, MS.) Length (before skinning), 18.25; extent of wings, 33; wing, 10; tail, 3.80; culmen, 3.12; depth of bill at nostrils, 0.43; greatest depth of bill, 0.50; tarsus, 2.20; middle toe, 1.65.

This species is very distinct from every other, except *H. frazari*, Brewster,[2] from Lower California, which is so closely related that eventually, when a larger series has been compared, it may prove to be not separable. Apart from this relationship, *H. galapagensis* is allied both to *H. palliatus* and *H. leucopus*, but more closely to the former, as the following synoptical table, which gives the chief diagnostic characters of all the known American white-bellied *Hæmatopi*, will show:

[1] The fresh colors of the unfeathered parts in two adults obtained by Dr. William H. Jones, U. S. N., on Chatham Island, August 16, 1884, as noted by him, were as follows:

No. 101319, U.S.N.M. (collector's No. 64), adult, type of the species: Bill red; iris golden yellow; eyelids red; feet pale flesh color. Length (before skinning), 18 inches; extent, 32.

No. 101321, U.S.N.M (collector's No. 63), adult: Bill dark red; iris bright golden yellow; eyelids bright red; feet pale flesh color. Length, 17¼; extent, 32½.

Mr. C. F. Adams's notes on specimens collected by himself and Dr. Baur, on Hood and Albemarle islands, July 5–30, 1891, are as follows:

Adult male: "Basal half of bill vermilion, other portion nearly as dark as maroon; legs and feet lighter than buff-pink."

Adult female: "Eyelids red; legs lighter than cream-buff; base of bill Chinese orange, anterior part bay."

[2] *Hæmatopus frazari*, Brewster, The Auk, V, January, 1888, p. 85 (Carmen Island, Gulf of California; collection of William Brewster).

SYNOPSIS OF AMERICAN WHITE-BELLIED HÆMATOPI.

a^1. Rump and lower back white. (Palæarctic region, accidental in Greenland) ..... 1. *H. ostralegus*, Linnæus.

a^2. Rump and lower back dusky.

b^1. Breast white, like belly, etc.

c^1. Mantle grayish brown or brownish slate; upper tail-coverts wholly white in adult and under primary coverts almost wholly white; lower chest not mottled or spotted with black. (Atlantic coast from Nova Scotia to Brazil, and Pacific coast from western Mexico to Chili) ..... 2. H. palliatus, Temminck.

c^2. Mantle dark sooty brown or brownish black; shorter upper tail-coverts entirely blackish and longer ones varied with black at ends; under primary coverts chiefly dusky; lower chest mottled or spotted with dusky.

d^1. Under tail-coverts wholly white; more black on under wing-coverts; tail, 3.50–4.06 (average, 3.80); culmen, 3.10–3.80 (3.32); tarsus, 2.07–2.20 (2.15); middle toe 1.59–1.89 (1.70). (Galapagos Archipelago.) 3. *H. galapagensis*, Ridgway.

d^2. Lateral under tail-coverts spotted or irregularly barred with dusky; less black on under wing-coverts; tail, 3.90–4.25 (average, 4.05); culmen, 2.70–3.05 (2.93); tarsus, 2.18–2.30 (2.24); middle toe, 1.40–1.55 (1.47). (Lower California, both coasts.) 4. *H. frazari*, Brewster.

b^2. Breast wholly black, like head and neck. (Southern extremity of South America) ..... 5. *H. leucopodus*, Garnot.

An examination of eight additional specimens of the Galapagos oyster-catcher reduces the alleged color differences between that bird and the Lower Californian form described as *H. frazari* by Mr. Brewster to two, namely, the smaller amount of dark color on the under surface of the wing and the partially spotted or barred under tail-coverts of the latter. Mr. Brewster says that *H. frazari* is, in part, distinguished by its "distinctly brown (instead of sooty black) back, scapulars, and wing-coverts;" but some of the more recently obtained specimens of *H. galapagensis*, having a mixture of old and new feathers in the plumage, show that this character cannot be depended on, the old feathers having exactly the brown color of the mantle in *H. frazari*. In the coloration of the upper breast, where the black of the upper chest joins the white beneath it, there is no difference between the two supposed forms, the "broad zone of mottled black and white feathers" being just as well developed in *H. galapagensis* as in *H. frazari*.

It is evidently yet too soon to say whether the birds from the two distant regions are really different or not, a larger number of specimens, particularly of the Lower Californian bird, being necessary to decide the question. When, however, we consider the very slight characters on which the separation of *H. frazari* now rests, and also the fact that *Sula nebouxii*, *S. brewsteri*, and *Pelecanus californicus* are found both in the Galapagos and Lower California, it would be not at all surprising should the oyster-catchers of the two distant localities also prove to be identical.

Measurements of Hæmatopus galapagensis.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill at nostril.	Greatest depth of bill.	Tarsus.	Middle toe.
101319	U. S.	Adult	Chatham Island	Aug. 16, 1884	9.70	3.90	3.42	.49	.52	2.20	1.72
101320	U. S.	Immature	do	do	10.00	3.80	3.12	.43	.50	2.20	1.65
101321	U. S.	Adult	do	do	.....	4.00	3.15	.48	.51	2.19	1.68
116025	U. S.	Adult male	James Island	Apr. 11, 1888	9.75	3.85	3.23	.45	.51	2.20	1.59
125997	U. S.	do	Indefatigable Island.	Apr. 2, 1891	10.00	3.80	3.35	.40	.50	2.12	1.61
211	B. & A.	Adult female	Hood Island	July 5, 1891	10.05	3.50	3.45	.45	.51	2.19	1.72
231	B. & A.	do	do	July 6, 1891	10.00	4.06	3.45	.51	.52	2.07	1.68
244	B. & A.	do	do	July 7, 1891	10.00	3.70	3.32	.50	.53	2.20	1.72
300	B. & A.	Adult male	Albemarle Island.	July 14, 1891	9.50	3.85	3.18	.50	.49	2.10	1.63
378	B. & A.	Adult female	do	July 24, 1891	9.50	3.80	3.80	.47	.51	2.10	1.89
396	B. & A.	Adult male	do	July 30, 1891	9.90	3.55	3.10	.44	.47	2.08	1.64
			Average		9.84	3.80	3.32	.47	.51	2.15	1.70

Measurements of Hæmatopus frazari, Brewster.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Depth of bill at nostril.	Greatest depth of bill.	Tarsus.	Middle toe.
82447	U. S.	Immature male	Coronados Islands, Lower California	May 17, 1881	9.50	4.00	2.70	.45	.52	2.20	1.55
	W. B.	Adult male	La Paz, Lower California[1]	Mar. 7, 1887	9.90	4.25	3.00	.45	.50	2.30	1.40
	W. B.	do	do		9.75	3.90	2.99	....	.49	2.18	.....
	W. B.	do	do		10.27	....	3.05	....	.53	2.30	.....
			Average		9.85	4.05	2.93	.45	.51	2.24	1.47

[1]This specimen of Mr Brewster's I have examined and the measurements given are mine. The measurements of the two following are quoted from Mr. Brewster's article in The Auk, V, p. 85.

Family ARENARIIDÆ.

Genus ARENARIA, Brisson.

Arenaria, Brisson, Orn., V, 1760, p. 132. Type, *Tringa interpres*, Linnæus.

Range.—Seacoasts nearly throughout the world, breeding in northern portions of the northern hemisphere. Galapagos Archipelago (one cosmopolitan species during migration).

ARENARIA INTERPRES (Linnæus).

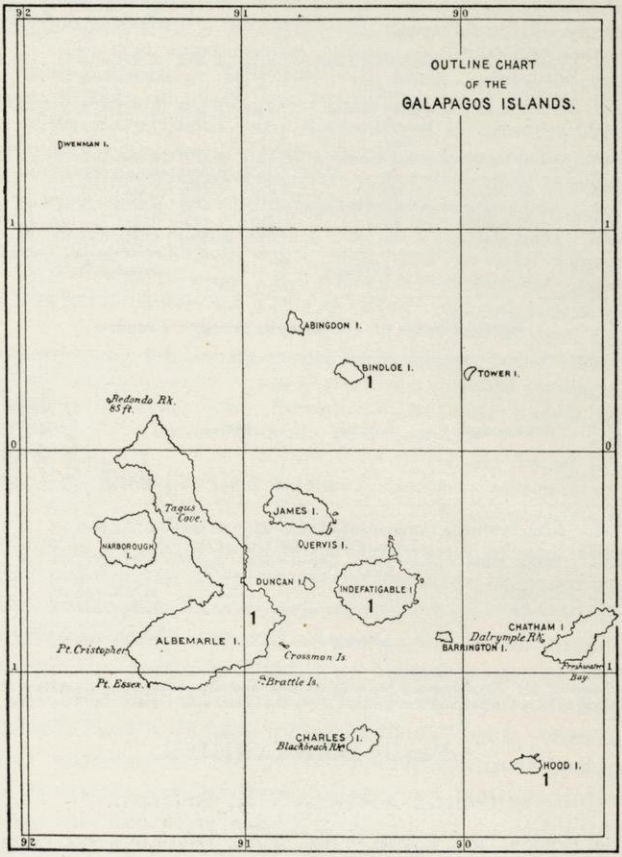
Tringa interpres, LINNÆUS, Sys. Nat., 10th ed., I, 1758, p. 148.

Arenaria interpres, VIEILLOT, Gal. Ois., II, 1834, p. 102.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 180; Proc. U. S. Nat. Mus., XII, 1889, p. 116 (Hood Island, Galapagos Archipelago).

Strepsilas interpres, ILLIGER, Prodr. Orn., 1811, p. 263.—GOULD and DARWIN, Zool. Voy. Beagle, III, Birds, 1841, p. 132 (Galapagos Archipelago).—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 32 (Indefatigable and Bindloe islands).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 502 (Indefatigable and Bindloe islands).—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., I, 1884, p. 119.

Range.—Seacoasts nearly throughout the world. Galagapos Archipelago: Albemarle Island (Baur and Adams); Hood Island (*Albatross*); Indefatigable Island (Habel); Bindloe Island (Habel).

ASCERTAINED RANGE OF THE GENUS ARENARIA, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Arenaria interpres* (Linnæus).

Family CHARADRIIDÆ.

Genus SQUATAROLA, Cuvier.

Squatarola, CUVIER, Règne Anim., I, 1817, p. 467. Type, *Tringa squatarola*, Linnæus.

Range.—Breeding in extreme northern portions of northern hemisphere, but nearly cosmopolitan during migration.

SQUATAROLA SQUATAROLA (Linnæus).

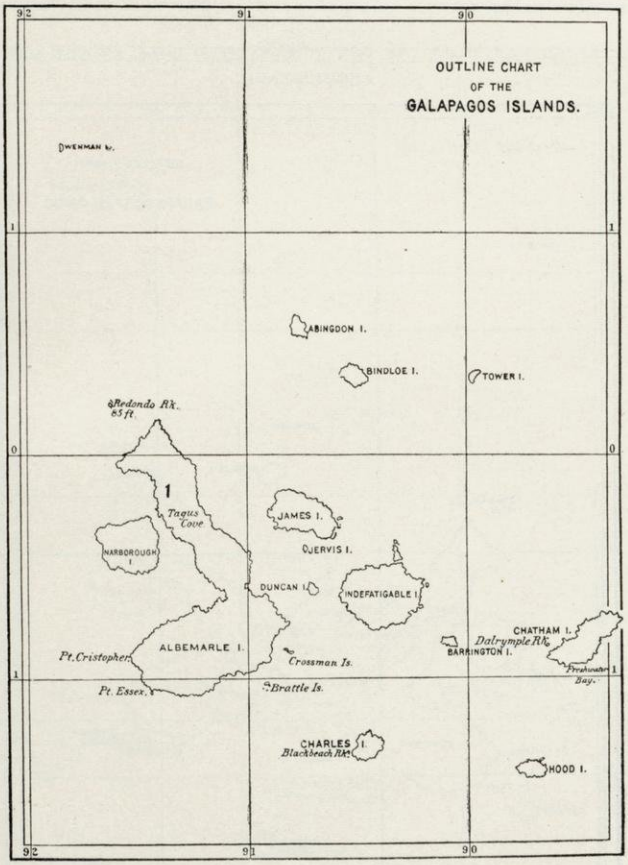
Tringa squatarola, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 149.

Charadrius squatarola, NAUMANN, Vög. Deutschl., VII, 1834, p. 250.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 173.

Squatarola squatarola, TURNER, Proc. U. S. Nat. Mus., VIII, 1885, p. 246.
Tringa helvetica, LINNÆUS, Syst. Nat. 12th ed., I, 1766, p. 250.
Squatarola helvetica, CUVIER, Règne Anim., I, 1817, p. 467.—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., I, 1884, p. 132.

Range.—Nearly cosmopolitan. Galapagos Archipelago: Albemarle Island, northern part (Baur and Adams).

ASCERTAINED RANGE OF THE GENUS SQUATAROLA, CUVIER, IN THE GALAPAGOS ARCHIPELAGO.



1. *Squatarola squatarola* (Linnæus).

Genus ÆGIALITIS, Boie.

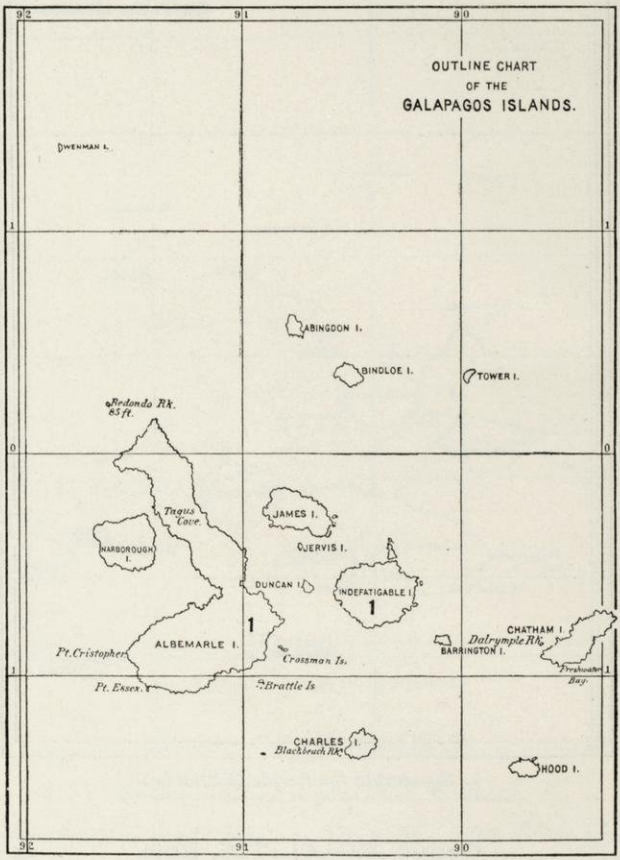
Ægialatis, BOIE, Isis, 1822, p. 558. Type, by elimination, *Charadrius hiaticula*, Linnæus.

Range.—Cosmopolitan. Galapagos Archipelago (one North American species during migration).

ÆGIALITIS SEMIPALMATA, Bonaparte.

Charadrius semipalmatus, BONAPARTE, Jour. Acad. Nat. Sci. Phila., V, 1825, p. 98.
Ægialites semipalmatus, BONAPARTE, Geog. and Comp. List, 1838, p. 45.
Ægialitis semipalmata, BAIRD, Birds N. Amer., 1858, p. 694.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island, Galapagos Archipelago).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 501 (Indefatigable Island, Galapagos Archipelago.)—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., I, 1884, p. 154.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 176.
Hiaticula semipalmata, GRAY, Zool. Voy. Beagle, III, Birds, 1841, p. 128 (Galapagos Archipelago).

ASCERTAINED RANGE OF THE GENUS ÆGIALITIS, BOIE, IN THE GALAPAGOS ARCHIPELAGO.



1. *Ægialitis semipalmata*, Bonaparte.

Range.—America in general, breeding in arctic and subarctic districts, migrating in winter as far south as Brazil and Peru. Galapagos Archipelago: Albemarle Island (Baur and Adams);[1] Indefatigable Island (Habel).

[1] Four specimens.

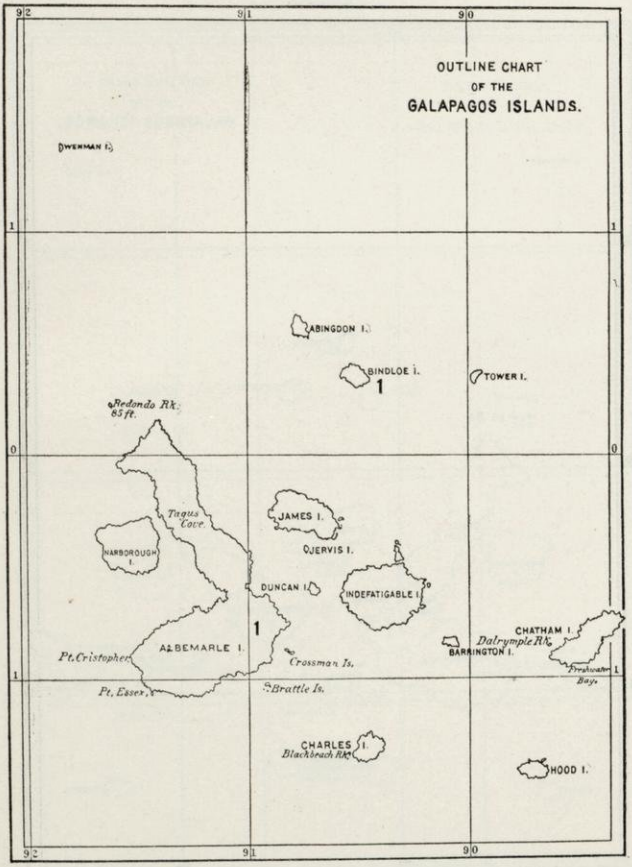
Family SCOLOPACIDÆ.

Genus CALIDRIS, Cuvier.

Calidris, Cuvier, Leç. Anat. Comp., I, 1799–1800, Pl. II. Type, *Tringa arenaria*, Linnæus.

Range.—Cosmopolitan. Galapagos Archipelago (the single widely dispersed species during migration).

ASCERTAINED RANGE OF THE GENUS CALIDRIS, CUVIER, IN THE GALAPAGOS ARCHIPELAGO.



1. *Calidris arenaria* (Linnæus).

CALIDRIS ARENARIA (Linnæus).

Tringa arenaria, Linnæus, Syst. Nat., 12th ed., I, 1766, p. 251.

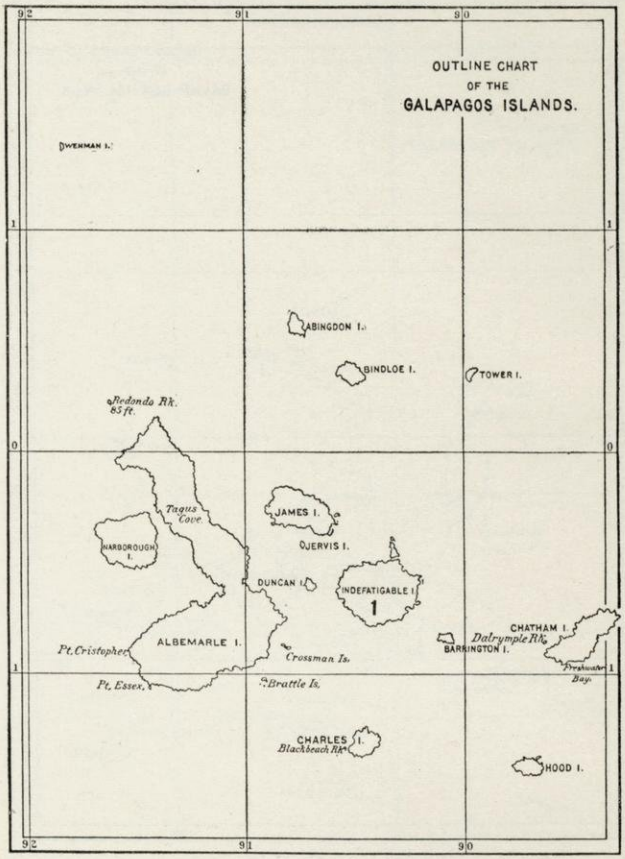
Calidris arenaria, Leach, Syst. Cat. Brit. Mam. and Birds, 1816, p. 28.—Sclater and Salvin, Proc. Zool. Soc., 1870, p. 323 (Bindloe Island, Galapagos Archipelago).—Salvin, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 503 (Bindloe Island).—Baird, Brewer, and Ridgway, Water Birds N. Amer., I, 1884, p. 249.—Ridgway, Man. N. Amer. Birds, 1887, p. 162.

Range.—Nearly cosmopolitan; migrating southward in America to Chile and Patagonia. Galapagos Archipelago: Albemarle Island (Baur and Adams);[1] Bindloe Island (Habel).

Genus TRINGA, Linnæus.

Tringa, Linnæus, Syst. Nat., 10th ed., I, 1758, p. 148. Type, by elimination, *T. canutus*, Linnæus.

ASCERTAINED RANGE OF THE GENUS TRINGA, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Tringa minutilla*, Vieillot.

Range.—Cosmopolitan during migration, but breeding in northern (chiefly arctic and subarctic) portions of northern hemisphere. Galapagos Archipelago (one North American species of general distribution during migration).

[1] Eight specimens.

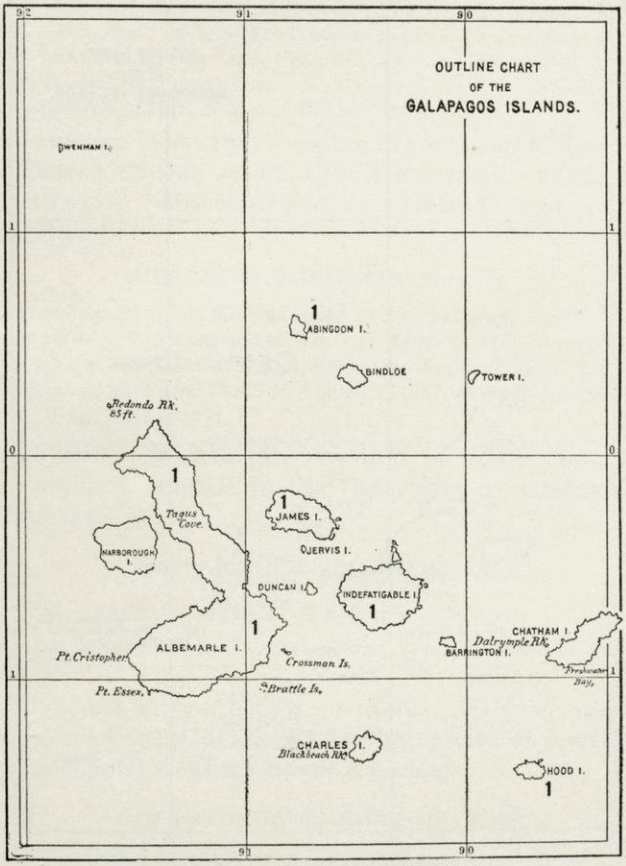
TRINGA MINUTILLA, Vieillot.

Tringa minutilla, VIEILLOT, Nouv. Dict., XXXIV, 1819, p. 452.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island, Galapagos Archipelago).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 504 (Indefatigable Island, Galapagos Archipelago).—RIDGWAY, Man. N. Amer. Birds, 1887, p. 158.

Pelidna minutilla, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 131 (Galapagos Archipelago).

Actodromas minutilla, "BONAPARTE, Compt. Rend., 1856."—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., I, 1884, p. 236.

ASCERTAINED RANGE OF THE GENUS HETERACTITIS, STEJNEGER, IN THE GALAPAGOS ARCHIPELAGO.



1. *Heteractitis incanus* (Gmelin).

Range.—Whole of America, breeding north of the United States; accidental in Europe. Galapagos Archipelago (Indefatigable Island, Habel).

Genus HETERACTITIS, Stejneger.

Heteractitis, STEJNEGER, Auk, I, July, 1884, p. 236. Type, *Scolopax incanus*, Gmelin.

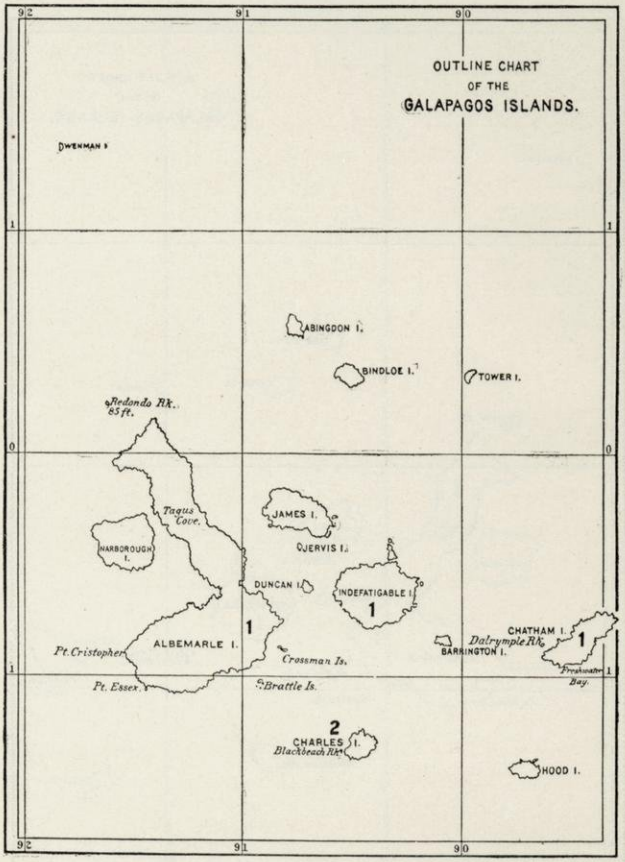
Range.—Shores and islands of the Pacific Ocean. Galapagos Archipelago (one species, of extensive range along the Pacific coast of America and islands of the eastern Pacific).

HETERACTITIS INCANUS (Gmelin).

Scolopax incanus, GMELIN, Syst. Nat., I, Pt. II, 1788, p. 658.

Heteroscelus incanus, COUES, Key, 1872, p. 261.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 503 (Indefatigable and Abingdon islands, Galapagos Archipelago).—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., I, 1884, p. 290.

ASCERTAINED RANGE OF THE GENUS NUMENIUS, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Numenius hudsonicus*, Latham.
2. *Numenius borealis* (Forster).

Heteractitis incanus, STEJNEGER, Auk, I, July, 1884, p. 236.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 168; Proc. U. S. Nat. Mus., XII, 1889, p. 116 (Hood and James islands).

Totanus fuliginosus, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 130 (Galapagos Archipelago).

Totanus brevipes (nec VIEILLOT), SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable and Abingdon islands).

Range.—Islands and shores of the eastern Pacific Ocean, from Alaska to the Galapagos Archipelago: Albemarle Island[1] (Baur and Adams); Hood Island (*Albatross*); Indefatigable Island (Habel); James Island (*Albatross*); Abingdon Island (Habel).

Genus NUMENIUS, Brisson.

Numenius, BRISSON, Orn., VI, 1760, p. 311. Type, *Scolopax arquata*, Linnæus.

Range.—Cosmopolitan. Galapagos Archipelago (two North American species during migration).

NUMENIUS HUDSONICUS, Latham.

Numenius hudsonicus, LATHAM, Index Orn., II, 1790, p. 712.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island, Galapagos Archipelago).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 504 (Indefatigable Island).—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., I, 1884, p. 315.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 171.

Range.—America in general, breeding in arctic and subarctic districts of the northern continent. Galapagos Archipelago: Albemarle Island (Baur and Adams);[2] "observed on Chatham Island" (Baur); Indefatigable Island (Habel).

NUMENIUS BOREALIS (Forster).

Scolopax borealis, FORSTER, Philos. Trans., LXII, 1772, pp. 411, 431.

Numenius borealis, LATHAM, Index Orn., II, 1790, p. 712.—SALVIN, Proc. Zool. Soc., 1883, p. 429 (Charles Island, Galapagos Archipelago).—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., I, 1884, p. 318.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 171.

Range.—America in general, breeding in arctic districts of the northern continent. Casual in the Galapagos Archipelago: Charles Island (Markham).

Family RECURVIROSTRIDÆ.

Genus HIMANTOPUS, Brisson.

Himantopus, BRISSON, Orn., VI, 1760, p. 33. Type, *Charadrius himantopus*, Linnæus.

Range.—Warmer parts of both hemispheres. Galapagos Archipelago (one species, apparently identical with the species of North America, Middle America, and northern South America).

?HIMANTOPUS MEXICANUS (Müller).

Charadrius mexicanus, MÜLLER, Syst. Nat. Suppl., 1776, p. 117.

Himantopus mexicanus, ORD, ed. Wils. Orn., VII, 1824, p. 52.—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., I, 1884, p. 345—RIDGWAY, Man. N. Amer. Birds, 1887, p. 147; Proc. U. S. Nat. Mus., XII, 1889, p. 116 (James Island, Galapagos Archipelago).

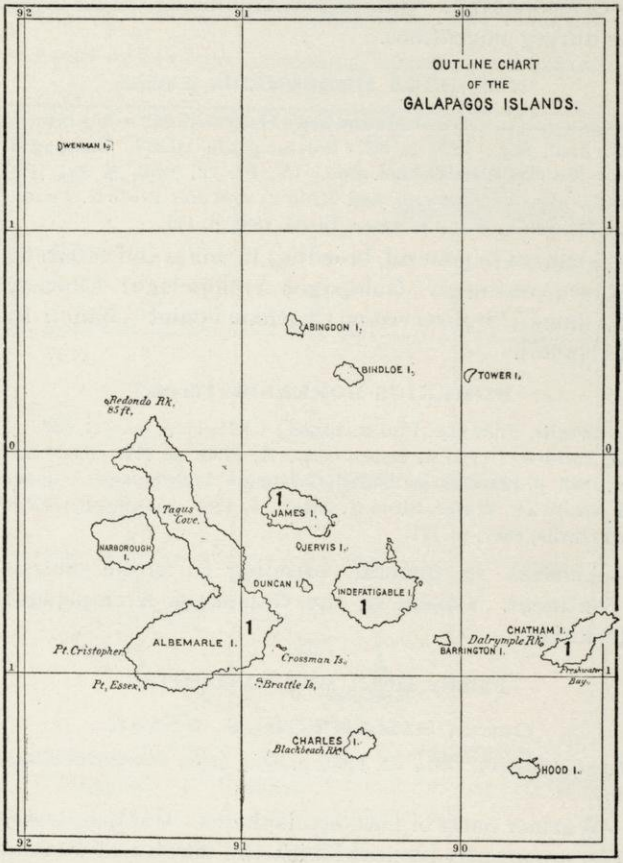
Himantopus nigricollis, VIEILLOT, Nouv. Dict., X, 1817, p. 42.—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable Island).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 502 (Indefatigable Island).

[1] Two specimens from "Albemarle" and one from "North Albemarle."

[2] Six specimens.

Range.—Temperate North America and southward to Brazil and Peru. Galapagos Archipelago: Albemarle Island[1] (Baur and Adams); Chatham Island[2] (Baur and Adams); Indefatigable Island (Habel); James Island (*Albatross*).

ASCERTAINED RANGE OF GENUS HIMANTOPUS, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Himantopus mexicanus* (Müller)?

I am unable to separate these Galapagos specimens from northern examples, or true *H. mexicanus*. The National Museum series of the latter is very meager, however. The two adult males show some black on some of the rectrices, in the form of roundish or ovate spots at the tip of the inner webs, one of them having, in addition, a dusky clouding on the outer web of two or three of the tail-feathers. All the adults are molting their primaries, in consequence of which their wing

[1] Two specimens. [2] Four specimens.

measurements could not be taken. Other measurements, however, are as follows:

Measurements of Himantopus mexicanus.

Number.	Sex and age.	Locality.	Date.	Tail.	Culmen.	Naked part of tibia.	Tarsus.	Middle toe.
83	Adult female	Chatham Island	June 19, 1891	2.70	2.63	2.52	4.08	1.61
85	Adult male	do	do	2.72	2.50	2.58	3.80	1.46
311	do	Albemarle Island	July 15, 1891	2.70	2.50	3.15	4.26	1.50
312	Adult female	do	do	2.50	2.42	2.35	3.70	1.52
		Average		2.66	2.51	2.65	3.96	1.52

Two of Messrs. Baur and Adams' specimens being immature, as are also both of those obtained by Mr. Townsend, their measurements are not given.

The following fresh color notes are found in Mr. Adams' note book, but whether they apply to adult or young birds is not stated. If the former, there seems to be considerable difference in color of the legs between Galapagos and North American specimens, which in the latter is (usually, at least) clear pink or rosy lilac.

Feet, tarsi, and one inch of tibia pinkish vinaceous, the other part of tibia vinaceous-cinnamon.

Family LARIDÆ.

Genus LARUS, Linnæus.

Larus, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 136. Type, by elimination, *L. canus*, Linnæus.

Range.—Cosmopolitan. Galapagos Archipelago (one peculiar species, related to species of the Pacific coast of North and South America).

LARUS FULIGINOSUS, Gould.

Larus fuliginosus, GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 141 (James Island, Galapagos Archipelago).—SCLATER and SALVIN, Proc. Zool. Soc., 1870, p. 323 (Indefatigable and Abingdon islands); 1871, p. 574.—SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (Charles and Indefatigable islands).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 505, pl. LXXXVII (Indefatigable, Abingdon, and Charles islands).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 116 (Indefatigable, James, and Chatham islands).

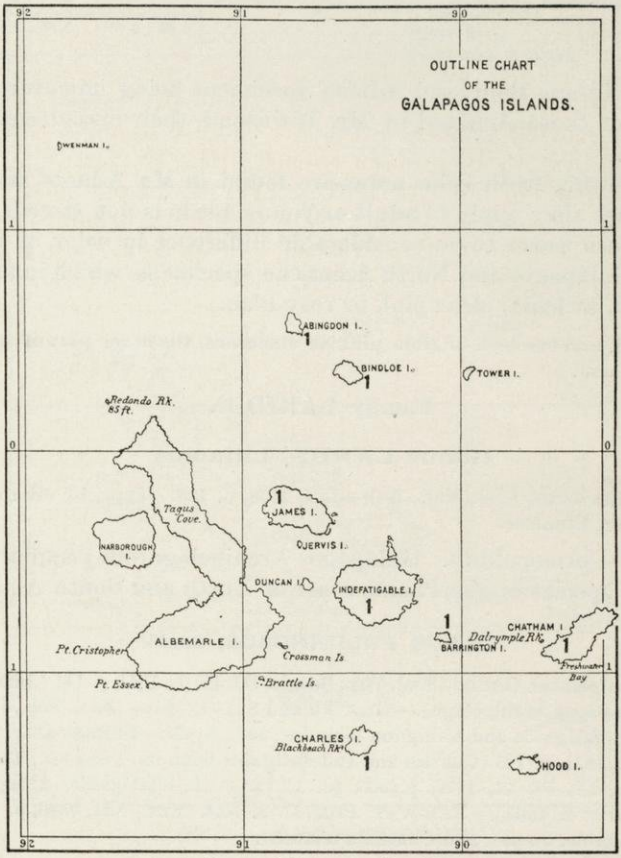
Specific characters.—Entire plumage deep grayish (adult) or sooty brown (young), the primaries blackish and the upper tail-coverts paler gray than back, etc.

Range.—Galapagos Archipelago: Charles Island (Kinberg); Chatham Island (Townsend, Baur and Adams); Barrington Island (Baur and Adams); Indefatigable Island (Kinberg, Habel, *Albatross*); James Island (Darwin, *Albatross*); Bindloe Island (Baur and Adams); Abingdon Island (Habel).

Adult male.—No. 116061, U.S.N.M.; Indefatigable Island, Galapagos, April 12, 1888; C. H. Townsend. Head and upper neck dark sooty

slate, paling anteriorly into brownish slate-gray, the posterior outline rather distinct, forming a fairly well-defined "hood;" a longitudinal spot of white on each eyelid; lower neck, chest, and upper parts generally plain gray,[1] more or less stained, here and there, with brownish; secondaries passing into very pale gray or grayish white at tips; upper tail-coverts pale gray; under parts of body pale brownish gray, deeper

ASCERTAINED RANGE OF THE GENUS LARUS, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Larus fuliginosus*, Gould.

on sides and flanks, passing into very pale gray or grayish white on under tail-coverts. Six outermost primaries dull slate-black, the shorter ones tipped with a small gray spot; innermost primaries gray (like back, etc.), with very indistinct paler terminal margins; primary coverts intermediate in color between primaries and secondaries. Tail rather light brownish gray, becoming still paler on lateral feathers. Bill black; legs and feet brownish black (Adams, MS.). Length (skin),

[1] Corresponding most nearly with No. 6, pl. II, of my "Nomenclature of Colors."

18; wing, 13.65; tail, 5.65; exposed culmen, 1.68; greatest depth of bill, 0.50; least depth of bill, 0.50; tarsus, 2.30; middle toe, 1.75.

Adult female.[1]—No. 126001, U.S.N.M.; Chatham Island, Galapagos, March 30, 1891; C. H. Townsend. Similar to the adult male, as described above, but head, neck, and chest browner, with many feathers of the immature plumage intermingled with those of the adult livery; under parts darker and decidedly browner gray, the under tail-coverts not approaching grayish white; secondaries and innermost primaries much darker, the former approaching black and with very distinct and broad ash gray tips, the latter with a more or less distinct blackish subterminal spot; tail much darker gray, shaded or suffused on edges of feathers with blackish, crossed by a broad subterminal band of blackish (nearly disappearing on lateral feathers), and marked with more or less distinct terminal spots of gray. Length (skin), 16.75; wing, 13.25; tail, 5.50; exposed culmen, 1.62; greatest depth of bill, 0.50; least depth of bill, 0.48; tarsus, 2.18; middle toe, 1.55.

Immature (second year).—No. 116031, U.S.N.M.; James Island, Galapagos, April 11, 1888; C. H. Townsend. Head, neck, chest, and most of upper parts sooty grayish brown, the feathers of the mantle with paler margins; rump uniform grayish brown; upper tail-coverts light gray, marked with a rather indistinct terminal spot of brownish; secondaries dull blackish slate, with paler terminal margins; primaries black, inclining to blackish slate on innermost quills; tail slaty black, fading into slate-gray basally, especially on inner webs, the lateral feathers with more than basal half of inner web rather light gray; under parts deep sooty gray or grayish brown, laterally lighter brownish gray, clouded with a more decided brown hue medially, passing into uniform pale brownish gray on anal region; under tail-coverts brownish gray, passing into a decidedly paler hue on margins. Bill and feet as in adults. Length (skin), 16.80; wing, 13.35; tail, 5.50; exposed culmen, 1.60; greatest depth of bill, 0.48; least depth of bill, 0.44; tarsus, 2.22; middle toe, 1.62.

Measurements of Larus fuliginosus.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Greatest depth of bill.	Least depth of bill.	Tarsus.	Middle toe.
92	B. & A.	Adult female.	Chatham Island.	June 20, 1891	12.15	5.08	1.60	.50	.48	2.05	1.57
116	B. & A.	.....do.....	.....do.....	June 24, 1891	13.20	5.23	1.63	.50	.49	2.06	1.63
127	B. & A.	Adult male...	.....do.....	June 25, 1891	14.05	5.83	1.73	.55	.51	2.18	1.75
128	B. & A.	Juvenile female.	.....do	.....do	13.75	5.32	1.57	.51	.48	2.23	1.61
129	B. & A.	Adult female.	.....do.....	.....do	13.50	5.48	1.62	.52	.50	2.02	1.60
130	B. & A.	Adult male...	.....do.....	.....do	13.65	5.65	1.75	.53	.53	2.22	1.73
270	B. & A.	Adult female.	Barrington Island.	July 4, 1891	13.30	5.25	1.60	.55	.49	1.97	1.61
116061	U. S.	Adult male...	Indefatigable Island.	Apr. 12, 1888	13.65	5.65	1.68	.50	.50	2.30	1.75
116062	U. S.	Adult	.....do.....	.....do	13.15	5.70	1.59	.49	.46	2.12	1.56
116031	U. S.	Juvenile.....	James Island....	Apr. 11, 1888	13.35	5.50	1.60	.48	.44	2.22	1 62
126001	U. S.	Adult female .	Chatham Island.	Mar. 30, 1891	13.25	5.50	1.62	.50	.48	2 18	1.55
			Average ...	.....	13.36	5.51	1.64	.51	.49	2.25	1.63

[1]Not quite adult, the browner feathers belonging to the immature dress.

Genus CREAGRUS, Bonaparte.

Creagrus, BONAPARTE, Naumannia, 1854, p. 213. Type, *Larus furcatus*, Néboux.

Generic characters.—Bill with culmen longer than middle toe (nearly equal to tarsus), its tip strongly decurved and its depth greatest at base; tail nearly half as long as wing, forked for about one third its length. Adult with head and upper half of neck slate color, and exterior margin of scapular region bordered by a conspicuous white stripe.

Range.—Galapagos Archipelago, Malpelo Island, and (casually) coast of South America as far south as Paracas Bay, Peru.

This genus is exceedingly distinct from *Xema*, the few resemblances to which are purely superficial.

From *Xema*, the points of structural difference are many and decided. The bill is very peculiar in shape, being much deeper at the base than elsewhere and strongly decurved at the tip, that of *Xema* being much smaller proportionally, much straighter, and much deeper through the angle than at the base. The tail is relatively much longer and much more deeply forked, being nearly half as long as the wing and forked for about one-third of its length, while that of *Xema* is much less than half as long as the wing and forked for not more than one-eighth of its length. As to coloration, there is even greater difference, *Creagrus* having the dark "hood" descending much farther down over the neck, and instead of being very abruptly terminated by a black border has no very definite outline except on the fore neck; while the white patch at the base of the upper mandible and the very conspicuous white stripe margining the exterior scapulars are entirely peculiar features. Moreover, the plumage of the young is quite distinct in its character from that of *Xema*.

CREAGRUS FURCATUS (Néboux).

Mouette à queue fourche, NÉBOUX, Rev. Zool., 1840, p. 290.

Larus furcatus, NÉBOUX, Rev. Zool., 1840, p. 290; Voy. Vénus, Atlas, 1846, pl. x. ("Monterey, California;" Paris Museum).—PRÉVOST et DES MURS, Voy. Vénus, V, Ois., 1855, p. 277.

Creagrus furcatus, BONAPARTE, Naumannia, 1854, p. 213.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 506 (Dalrymple Rock, Chatham Island, Galapagos Archipelago).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p 117 (Dalrymple Rock).—TOWNSEND, Bull. Mus. Comp. Zool., XXVII, 1895, p. 125 (Malpelo Island).

Xema furcatus, BRUCH, Jour. für Orn., 1853, p. 103.

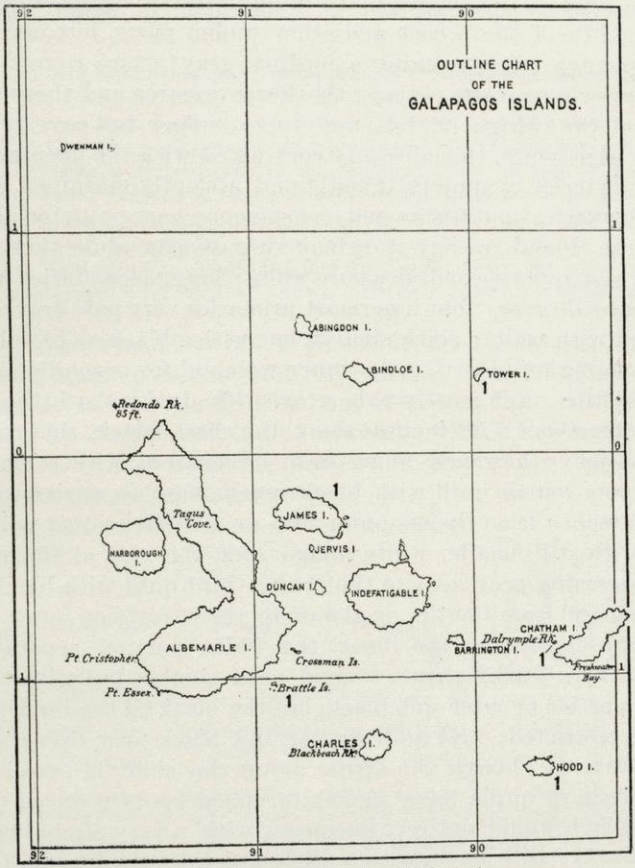
Xema furcatum, COUES, Key, 1872, p. 317.—SAUNDERS, Proc. Zool. Soc., 1878, p. 210 (Chatham Island); 1882, p. 523, pl. 34 (Paracas Bay, Peru).

Xema furcata, COUES, Check List, 2 ed., 1882, No. 791.—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., II, 1884, p. 273.

Specific characters.—Adult with head and neck slate colored, with a white spot at base of maxilla and on chin, sometimes also a smaller spot at apex of malar feathering; above clear gray, with a white line

along the exterior margin of the scapular region; tail, under parts, secondaries, and outermost wing-coverts white. Bill black with whitish tip; legs and feet red. Young chiefly white, including head and neck, the latter with a brown or dusky spot behind ear-coverts and in front of eye; rectrices with a dusky subterminal spot; mantle grayish, spotted with black. Bill wholly dusky; legs and feet pale (flesh color

ASCERTAINED RANGE OF THE GENUS CREAGRUS, BONAPARTE, IN THE GALAPAGOS ARCHIPELAGO.



1. *Creagrus furcatus* (Néboux).

in life?). Length, about 20–22 inches; wing, 15.35–16.77; tail, 6.90–8.02, forked for about 2.45–3; culmen, 1.82–2.12; tarsus, 1.89–2.32; middle toe, 1.70–2.10.

Range.—Galapagos Archipelago: Brattle Island (Baur and Adams); Hood Island (Baur and Adams); Dalrymple Rock, Chatham Island (Kellett and Wood, *Albatross*); off James Island (Baur and Adams); Tower Island (Baur and Adams). Malpelo Island, off Gulf of Panama (Townsend). Casual (?) off coast of Peru (Paracas Bay, Markham), and off coast of southern California ("Monterey" Néboux).

Adult male (breeding plumage).—No. 115967, U.S.N.M.; Dalrymple Rock, Chatham Island, Galapagos, April 6, 1888; U. S. S. *Albatross.* A white patch at base of upper mandible, crossing anterior portion of forehead, and averaging about 0.35 of an inch in width;[1] a very small white spot on the apex of the malar region; rest of head with upper half of neck uniform slate color,[2] this rather abruptly terminated on the fore neck, but posteriorly fading gradually into the lighter gray of the hind neck; lower neck, all round, pale gray,[3] below extending over the sides of the breast, and fading gradually into the pure white of the middle of the breast and other under parts, but above gradually deepening into the uniform medium gray[4] which covers the back, scapulars, wing-coverts (except the lower greater and those along the margin of the wing), tertials, and rump; upper tail-coverts and tail entirely pure white, this abruptly contrasted with the deep gray of the rump. Exterior scapulars broadly and abruptly margined with pure white, forming a continuous and conspicuous narrow stripe along each side of the dorsal region; marginal wing-coverts, alulæ, lower greater coverts, and upper secondaries pure white; lower secondaries with outer webs very pale gray; four innermost primaries very pale gray, narrowly margined with white; sixth similar, but with a blackish blotch near the tip, extending quite across the inner web and for some distance along its edge; fifth quill mostly pale gray, with dusky shaft, the terminal portion (for about 1.30 inches along the shaft, black, this color much more extensive, however, along both edges), but with a small white apical spot; fourth quill with black much more extensive (extending nearly 5 inches from tip on outer web or 1.75 to nearest point on the inner), with still smaller white apical spot, the rest of the inner web white, becoming gray next to the shaft; third quill with black extending about 6.80 from the tip, or almost to the coverts on outer web, and 2 to nearest point on the inner, the white portion separated from the shaft by a dusky stripe; second quill similar, but with the whole exposed portion of outer web black, but the black on the inner web a little more restricted; first quill similar, but black near tip of inner web more restricted, though the stripe along the shaft is broader. (The three outermost quills have the white apical spots reduced to minute specks, which would entirely disappear with a very slight wearing of the feathers.) Bill black, with a little less than the terminal third (or for about 0.70 of an inch from the tip) yellowish horn white or pale olive-buff; rictus and broad tumid eyelids orange-red; iris dark brown; legs and feet deep red; claws deep black. Length (mounted specimen), about 20; wing, 16.25; tail, 7.40 (forked for 2.50); exposed culmen, 1.90; depth of bill at angle, 0.50, at base of culmen, 0.68; tarsus, 2; middle toe, 1.80.

[1] This white patch does not extend as far down as the edge of the mandible.

[2] Corresponding to the slate color (No. 4, pl. II) of my "Nomenclature of Colors," but slightly browner.

[3] Varying from tints 8–9, pl. II, of my "Nomenclature of Colors."

[4] Much like tint 7, pl. II, of my "Nomenclature of Colors."

Adult female (breeding plumage).—No. 115968, U.S.N.M., same locality, etc. Similar to the male, but with the slate-colored "hood" even less distinctly defined (approaching abrupt definition only on the fore neck), and white patch at base of upper mandible more restricted (averaging not more than 0.25 wide), the white spot on the malar apex also smaller (almost obsolete on one side). Length (mounted specimen), about 18; wing, 15.75; tail, 7.60 (forked for 2.60); exposed culmen, 1.90; depth of bill at angle, 0.47, at base of culmen, 0.65; tarsus, 1.98; middle toe, 1.70.

Mr. Adams' notes on fresh colors of the unfeathered parts are as follows:

Adult male.—Tip of beak pearl gray; basal portion brownish slate-black; iris seal brown (large pupil); eyelids coral red; tibiæ just below feathers washed with vermilion, most intense next feathers, and between toes at base of webs about same color; tarsi and toes rose pink; creases in webs dusky, the papillæ rose pink; nails brownish black, with a narrow grayish line on top; under surface of webs same color as upper; under surface of toes and heel orange-ochraceous (not showing on heel when foot is resting on flat surface); between scales on tarsi light ashy; webs most dusky at edges. Length, 22⅞; extent, 4 feet 4½ inches.

Young female (September 2).—Legs and feet drab-gray, except posterior portion of tarsus, which is tinged with broccoli brown; iris dark brown; eyelids black; bill slate color.

A colored sketch made by Mr. Townsend from a freshly killed specimen taken at Malpelo Island, Gulf of Panama, March 5, 1891, agrees closely with Mr. Adams' description, but shows, as additional features, the rictus to be bright red, like the eyelids, while the naked skin on each side of the chin, next to the mandibular rami, is also red, but of a paler tint than the rictus and eyelids.

Measurements of Creagrus furcatus.

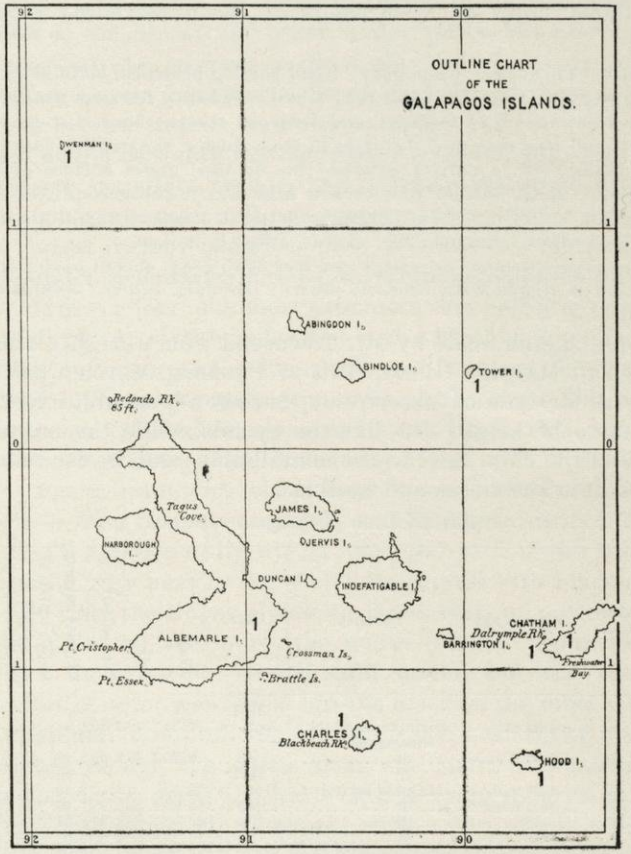
Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Fork of tail.	Exposed culmen.	Depth of bill at angle.	Depth of bill at base of culmen.	Tarsus.	Middle toe.
				1888.								
115967	U. S.	Adult male ...	Dalrymple Rock Galapagos.	Apr. 6	16.25	7.40	2.50	1.90	.50	.68	2.00	1.80
115968	U. S.	Adult female .	.....do	....do ...	15.75	7.60	2.60	1.90	.47	.65	1.98	1.70
				1891.								
131674	U. S.	Adult male ...	Malpelo Island ...	Mar. 5	16.50	....	....	2.05	.55	.65	2.32	1.95
131675	U. S.	Adult female .	.....do	....do ...	16.00	7.45	2.45	1.90	.50	.65	1.98	1.78
131676	U. S.	.....do	.....do	....do ...	16.00	7.50	2.90	1.98	.51	.70	1.95	1.85
131677	U. S.	.....do	.....do	....do ...	16.25	8.02	3.00	2.01	.55	.65	2.02	1.95
(a)	B. & A.	Adult male ...	Tower Island, Galapagos.	Sept. 3	16.25	6.90	....	2.00	.50	.73	2.00	2.00
(b)	B. & A.	.....do	Off James Island, Galapagos.	Aug. 21	16.65	7.73	....	2.00	.53	.69	2.21	2.06
2	B. & A.	.....do	Hood Island, Galapagos.	July 7	.....	7.80	....	1.82	.50	.65	2.10	1.82
238	B. & A.	.....do	.....do	....do ...	.....	7.65	....	2.00	.49	.66	1.89	1.89
241	B. & A.	.....do	.....do	....do ...	16.75	7.98	....	2.09	.50	.69	2.14	1.93
243	B. & A.	Adult female .	.....do	....do ...	16.00	7.30	....	1.90	.49	.62	2.00	1.95
245	B. & A.	Adult male ...	.....do	....do ...	15.35	7.00	....	1.92	.53	.72	2.05	2.06
246	B. & A.	.....do	.....do	....do ...	15.90	7.60	....	1.95	.56	.70	1.95	2.05
289	B. & A.	.....do	Brattle Island, Galapagos.	July 13	16.62	7.80	....	2.02	.49	.66	2.20	1.95
290	B. & A.	Adult female .	.....do	....do ...	16.30	7.18	....	2.00	.49	.61	1.95	1.80
291	B. & A.	Adult male ...	.....do	....do ...	16.20	7.58	....	2.05	.53	.67	2.05	2.05
292	B. & A.	.....do	.....do	....do ...	16.30	7.65	....	1.92	.51	.65	2.05	1.98
293	B. & A.	.....do	.....do	....do ...	16.62	7.10	....	2.12	.55	.73	2.10	2.10
294	B. & A.	.....do	.....do	....do ...	16.77	7.47	....	2.04	.54	.72	2.08	1.99
			Average.....	.....	16.25	7.51	2.69	1.98	.51	.67	2.05	1.93

Genus ANOUS, Stephens.

Anous, STEPHENS, Shaw's Gen. Zool., XIII, Pt. I, 1826, p. 139. Type, *Sterna stolida*, Linnæus.

Range.—Tropical seas in general. Galapagos Archipelago (one peculiar species).

ASCERTAINED RANGE OF THE GENUS ANOUS, STEPHENS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Anous galapagensis*, Sharpe.

ANOUS GALAPAGENSIS, Sharpe.

Megalopterus stolidus (nec *Sterna stolida*, LINNÆUS), GOULD, Zool. Voy. Beagle, III, Birds, 1841, p. 145 (Galapagos Archipelago).

Anous stolidus, SUNDEVALL, Proc. Zool. Soc., 1871, p. 125 (Galapagos).—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 504 (Dalrymple Rock, Chatham Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 116 (Dalrymple Rock).

Anous galapagensis, SHARPE, Philos. Trans., CLXVIII, 1879, p. 469.—SALVIN, Proc. Zool. Soc., 1883, p. 430 (Charles Island).—RIDGWAY, Proc. U. S. Nat. Mus., XII, 1889, p. 116 (Hood and Chatham islands).

Specific characters.—Similar to *A. stolidus* (Linnæus), but much darker and less brown, the head and neck almost slate color, and the forehead, in most perfect plumage, mouse gray, slightly paler along the edge, adjoining the black lores. (Many specimens, apparently adults, have the forehead but little grayer than the occiput).

Range.—Galapagos Archipelago: Albemarle Island (Baur and Adams); Charles Island (Markham); Hood Island (*Albatross*, Baur and Adams); Chatham Island (Kellett and Wood, Townsend); Tower Island (Baur and Adams); Wenman Island (Townsend).

Adult male (*fresh plumage*).—No. 126004, U.S.N.M.; off Wenman Island, April 4, 1891; C. H. Townsend. Head, neck, and chest uniform deep brownish slate, becoming darker on the lores, especially along their upper margin and immediately in front of the eyes, where nearly black, lighter and grayer on pileum, where becoming gradually paler anteriorly, the whole forehead being uniform smoke gray, lighter, approaching grayish white, in a narrow line along the lateral edge, next to the blackish anteorbital patch; a small white spot a little posterior to the middle of the upper eyelid and lower eyelid white for nearly its whole length, the space between the posterior extremity of the latter and the white spot on upper eyelid black. Rest of the plumage, in general, uniform deep sooty slate-brown, browner on wing-coverts and middle under parts, more slaty on back, rump, and upper tail-coverts; remiges sooty black; primary coverts and rectrices more blackish slate. Bill entirely deep black; legs and feet brownish black. Length (skin), 15.25; wing, 11.10; tail, 6, graduated for 2; culmen, 1.57; depth of bill at base of culmen, 0.41; tarsus, 0.95; middle toe, 1.18.

Adult female (*fresh plumage*).—No. 115970, U.S.N.M.; Dalrymple Rock, Chatham Island, April 5, 1888; C. H. Townsend. Exactly like the adult male in plumage. Length (skin), 15.75; wing, 10.80; tail, 6.05, graduated for 1.70; culmen, 1.61; depth of bill at base of culmen, 0.41; tarsus, 0.98; middle toe, 1.20.

Adult male (*previous to molting.*)—No. 116091; U.S.N.M.; Hood Island, April 7, 1888; C. H. Townsend. Similar to the fully adult, as described above, but rather darker above and browner beneath, the pileum dark sooty slate, approaching a decided gray only along the lateral margin, adjoining the black loral space. Length (skin), 14.50; wing (primaries molting); tail, 5.92, graduated for 2; culmen, 1.53; depth of bill at base of culmen, 0.39; tarsus, 0.93; middle toe, 1.15.

Adult female (*before molting*).—No. 126003, U.S.N.M.; Wenman Island, April 4, 1891; C. H. Townsend. Similar to the male in same condition of plumage. Length (skin), 15; wing, 10.; tail, 5.75, graduated for 2; culmen, 1.46; depth of bill at base of culmen, 0.39; tarsus, 0.98; middle toe, 1.20.

While very distinct from *A. stolidus* (Linnæus), the character upon which the separation from that species of *A. galapagensis* was based ("crown of head uniform brown like the rest of the upper surface")

applies only to immature birds or adults just before the molt takes place, the fully adult birds, at least those in fresh plumage, having the pileum distinctly gray, though many shades darker than in *A. stolidus*, the color being a clear brownish slate-gray or smoke gray, changing rather abruptly to a hoary hue next to the upper margin of the black lores, where forming a rather distinct though narrow line. The color of the body, wings, and tail, however, is very different from that of *A. stolidus*, being dark sooty slate, instead of much lighter sooty brown; in fact, the general color of the plumage is exactly the same as in *A. leucocapillus*, Gould,[1] except that the tail and its coverts are nearly or quite concolor with the other parts, instead of having a more or less distinct grayish cast.

The "*Anous stolidus*" from Chatham Island mentioned in my paper[2] on the *Albatross* collection is not that species, but the fresh-plumaged adult of *A. galapagensis*. The erroneous identification was made not by comparison with *A. stolidus*, but with dusky crowned specimens corresponding with those described by Mr. Sharpe.

Measurements of Anous galapagensis.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
115970	U. S.	Adult female	Chatham Island	Apr. 5, 1888	10.80	6.05	1.61	0.41	0.98	1.20
115971	U. S.	do	do	do	10.00	5.28	1.53	.38	.96	1.18
116091	U. S.	Adult male	Hood Island	Apr. 7, 1888	.....	5.92	1.53	.39	.93	1.15
126003	U. S.	Adult female	Wenman Island	Apr. 4, 1888	10.00	5.75	1.46	.39	.98	1.20
126004	U. S.	Adult male	do	do	11.10	6.00	1.57	.41	.95	1.18
242	B. & A.	do	Hood Island	July 7, 1891	11.00	5.90	1.70	.41	.86	1.22
406	B. & A.	do	Albemarle Island	July 31, 1891	10.90	6.10	1.60	.36	.94	1.25
407	B. & A.	do	do	do	11.18	6.00	1.50	.40	.90	1.18
408	B. & A.	do	do	Aug. 1, 1891	10.40	5.68	1.53	.38	.86	1.20
409	B. & A.	do	do	do	10.42	5.58	1.52	.35	.82	1.22
410	B. & A.	do	do	do	10.70	5.70	1.67	.38	.95	1.17
411	B. & A.	do	do	do	10.53	5.55	1.58	.38	.86	1.18
412	B. & A.	do	do	do	10.80	6.10	1.58	.40	.96	1.23
	B. & A.	Adult female	Tower Island	Sept. 4, 1891	10.30	5.60	1.51	.38	.83	1.14
	B. & A.	Adult female?	do	Aug. 3, 1891	9.65	5.00	1.40	.32	.87	1.18
	B. & A.	Adult male	do	Sept. 4, 1891	10.70	5.70	1.54	.37	.94	1.36
	B. & A.	do	do	do	10.00	5.82	1.51	.38	.91	1.22
	B. & A.	do	do	do	10.45	6.00	1.58	.41	.93	1.25
			Average		10.51	5.77	1.55	.39	.91	1.21

[1] *Anous leucocapillus*, GOULD, Proc. Zool. Soc., 1845, p. 103 (Raines Island, Australia).—STONE, Proc. Acad. Nat. Sci. Phila., 1894, pp. 116, 117 (critical).

? *Anous melanogenys*, GRAY, Gen. Birds, III, 1849, p. 661, pl. 182.

Anous melanogenys, SAUNDERS, Proc. Zool. Soc., 1876, p. 670, pl. LXI, fig. 2.—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., II, 1884, p. 324.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 49.

Anous tenuirostris (nec *Sterna tenuirostris*, TEMMINCK), SCLATER and SALVIN, Proc. Zool. Soc., 1871, p. 566.—COUES, Birds N.-W., 1874, p. 710, footnote.

[2] Proc. U. S. Nat. Mus., XII, p. 116.

Measurements of Anous stolidus (Linnæus).

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Depth of bill at base.	Tarsus.	Middle toe.	Graduation of tail.
2008	U. S.	Adult	Florida		10.30	5.22	1.61	....	0.98	1.13	1.60
8685	U. S.	Adult female	Tortugas, Florida.	June 26, 1857	10.30	5.35	1.58	.40	....	....	1.75
33697	U. S.	.....do	British Honduras.	May 12, 1862	10.50	5.93	1.72	.39	1.00	1.20	1.78
80018	U. S.	Adult	Dominica, West Indies.			....	1.45	.38	1.02	1.25	.....
80910	U. S.	.....do	St. Lucia, West Indies.		10.30	5.48	1.70	.46	.98	1.20	1.70
84854	U. S.	Adult male	Grenada, West Indies.	May 10, 1881	10.25	5.75	1.73	.41	1.00	1.20	1.80
109050	U. S.	Adult	Guadeloupe, West Indies.		10.00	5.57	1.68	.40	1.00	1.20	1.70
121113	U. S.	.....do	150 miles off mouth of Amazon.		9.90	5.48	1.60	.37	.98	1.15	1.70
12582	U. S.	Adult male	Atlantic Ocean, lat. 0°, long. 17° 44′.		10.30	5.82	1.62	.41	....	....	1.85
97893	U. S.	Adult	Caribbean Sea		10.55	5.72	1.72	.40	1.08	1.18	1.98
			Average		10.29	5.60	1.64	.40	1.01	1.19	1.76

Measurements of Anous stolidus rousseaui (Hartlaub[1]*).*

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Depth of bill at base of culmen.	Tarsus.	Middle toe.	Graduation of tail.
131694	U. S.	Adult	Cocos Island	Feb. 28, 1891	11.40	6.60	1.61	0.41	1.03	1.24	2.30
131695	U. S.	.....do	.....do	.....do	10.95	6.23	1.58	.43	1.03	1.25	2.20
131696	U. S.	Adult male	.....do	.....do	10.90	6.48	1.62	.42	1.00	1.27	2.40
131697	U. S.	.....do	.....do	.....do	11.35	6.60	1.68	.43	1.09	1.28	2.28
			Average		11.15	6.43	1.62	.42	1.04	1.26	2.30
58786	U. S.	.....do	Isabella Island, west Mexico.	Apr. 27, 1869	10.30	5.88	1.62	.42	1.00	1.18	2.00
58791	U. S.	Adult female	.....do	.....do	10.50	6.02	1.62	.40	1.01	1.15	2.10
15517	U. S.	Adult	Belinghausen Island, Pacific Ocean.		11.20	6.25	1.60	.42	1.00	1.23	2.50
15526	U. S.	Adult male	Waralea Island, Pacific Ocean.		11.20	6.60	1.75	.41	1.03	1.30	2.35
67326	U. S.	Adult	West of Sandwich Islands, Pacific Ocean.		10.40	5.92	1.47	.38	1.00	....	2.15
			Average		10.72	6.13	1.61	.41	1.01	1.22	2.22
119796	U. S.	Adult female	Seychelles	Apr. 3, 1890	.....	....	1.63	.40	.98	1.20	2.20
119798	U. S.	Adult male	.....do	.....do	10.60	5.82	1.71	.....	1.03	1.20	2.50
128750	U. S.	.....do	300 miles southwest of Seychelles.	Aug. 14, 1892	10.70	6.35	1.68	.42	1.10	1.25	2.10
128751	U. S.	.....do	Northwest of Madagascar.	Oct. 15, 1892	11.00	5.80	1.68	.42	1.00	1.23	1.85
			Average		10.76	5.99	1.68	.41	1.03	1.22	2.16

[1] *Anous rousseaui*, HARTLAUB, Beitr. Orn. Madagasc., 1860, p. 86 (Madagascar; collection Paris Museum; =young).

Anous frater, COUES, Proc. Acad. Nat. Sci. Phila., December, 1862, p. 558 (Island of Kuralea, South Pacific; U. S. Nat. Mus.).

Not being aware that both Dr. Hartlaub and Dr. Coues had already separated the

Family DIOMEDEIDÆ.

Genus DIOMEDEA, Linnæus.

Diomedea, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 132. Type, *D. exulans*, Linnæus.

Range.—Southern seas and Pacific Ocean in general. Galapagos Islands (two widely ranging species).

? DIOMEDEA EXULANS, Linnæus.

Diomedea exulans, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 132.—"WOLF, Besuch aus den Galáp. Iseln, 1879, p. (269) 13" (Hood Island, Galapagos Archipelago).—BAIRD, BREWER, and RIDGWAY, Water Birds N. Amer., II, 1884, p. 347.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 51.

Range.—Southern seas in general, north, casually, to Florida (Tampa Bay and mouth of St. Johns River) and Washington. Galapagos Archipelago (Hood Island, Wolf).

No specimens having been preserved, the identification of this species is doubtful. Indeed, only Habel and Wolf have recorded the occurrence among the Galapagos Islands of birds undoubtedly belonging to this genus. The former saw at Hood Island "two kinds of albatrosses. One had a dark blackish breast and a white band crossing the head from one eye to the other [*D. nigripes*, Audubon?]; the breast of the other was gray, and the head black."[1] The latter may have been an immature *D. exulans*. According to Wolf the last-named species was at one time very abundant on Hood Island. He says:

I would mention as a curious zoological fact that the albatross of this island (Hood), and only this, occurs in such abundance that the entire camp of Orchilla collectors (more than 60 men) lived for a month chiefly upon its eggs, although each female lays but one egg. It is evidently the widespread albatross from the Cape of Good Hope (*Diomedea exulans*), which is also very abundant about Cape Horn.[2]

Noddy of the Pacific and Indian oceans from that of the Atlantic, I was surprised to find them really different. The differences of measurements and proportions pointed out by Dr. Coues (loc. cit.) hold good in a very much larger series of specimens than that which he examined, the pileum being decidedly darker and the general coloration darker and less brown in specimens from the Pacific and Indian oceans than in those from the Atlantic (true *A. stolidus*), the tail decidedly longer and more graduated, etc. It is probable, however, that still further subdivision will be necessary when a larger number of specimens have been compared. For example, specimens from Cocos Island, off Panama Bay, are darker and less brown than those from the Seychelles (true *A. rousseaui?*), being, in fact, nearly intermediate between the latter and the Galapagos form (*A. galapagensis*).

It is very likely an earlier name, based upon the bird from some part of the Pacific or Indian oceans, may be found. *Sterna philippina*, Latham (Index Ornithologicus, II, 1790, p. 805), cited by Blasius (Journ. für Orn., 1866, p. 83) as a synonym of *A. stolidus*, seems, however, scarcely applicable.

[1] See Trans. Zool. Soc. London, IX, Pt. IX, 1876, pp. 458, 459.

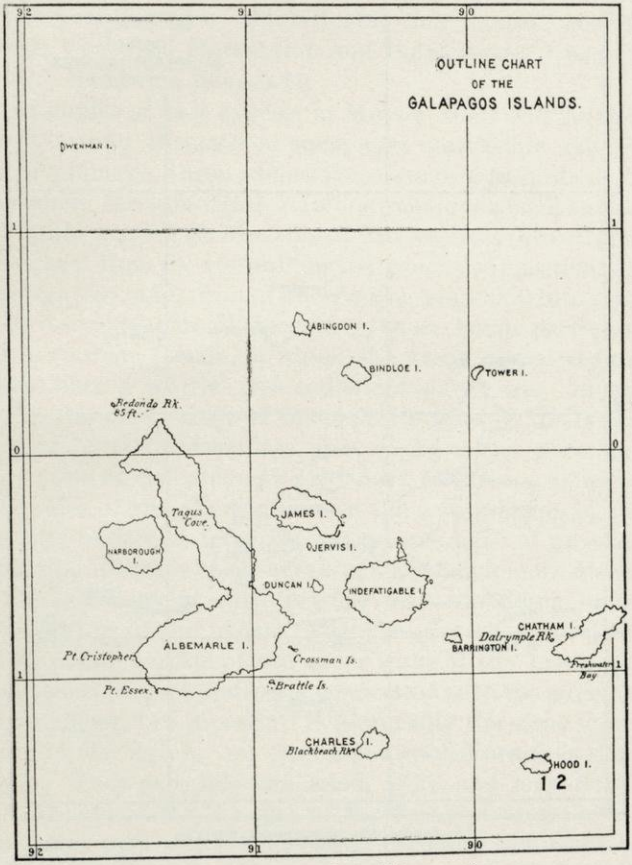
[2] Besuch aus den Galápagos Inseln, 1879, p. (269) 13.

? DIOMEDEA NIGRIPES, Audubon.

Diomedea nigripes, Audubon, Orn. Biog., V, 1839, p. 327 (eastern Pacific, lat. 50° N.; U. S. Nat. Mus.).—CASSIN, Illustr. Birds Cal. Tex., etc., 1853, p. 210, pl. 35.—BAIRD, BREWER and RIDGWAY, Water Birds N. Amer., II, 1884, p. 355.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 51.

Range.—North Pacific Ocean, especially the eastern side. ? Casual in the Galapagos Archipelago (Hood Island, Habel).

ASCERTAINED RANGE OF THE GENUS DIOMEDEA, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Diomedea exulans*, Linnæus?.
2. *Diomedea nigripes*, Audubon?.

This is very likely the species seen by Dr. Habel which "had a dark blackish breast and a white band crossing the head from one eye to the other," *D. nigripes* being of a uniform deep sooty brown with the fore part of the head whitish.

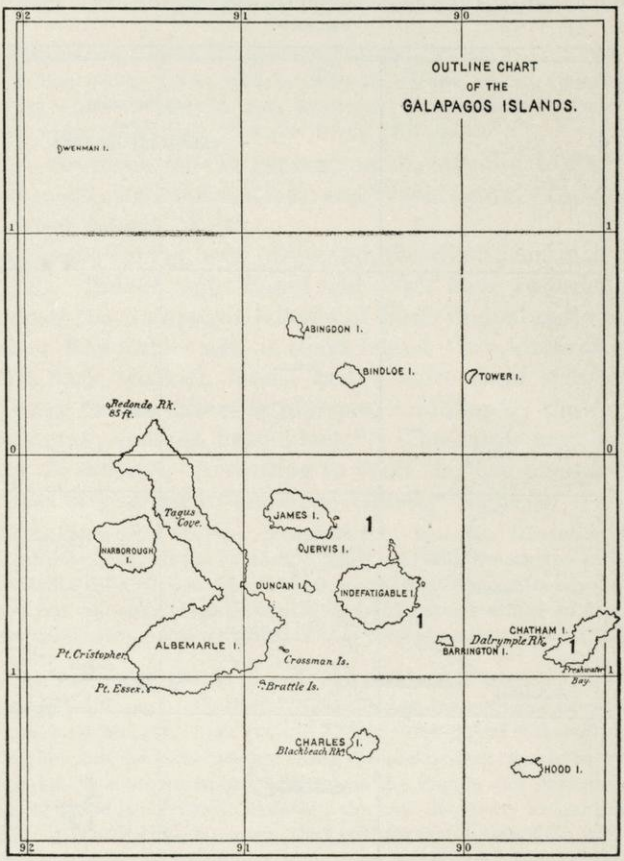
Family PROCELLARIIDÆ.

Genus AESTRELATA, Bonaparte.

Aestrelata, BONAPARTE, Consp. Av., II 1856, p. 188. Type, *Procellaria hasitata*, Kuhl.

Range.—Cosmopolitan (pelagic). Galapagos Archipelago (one species, most nearly related to, possibly identical with, a Hawaiian one).

ASCERTAINED RANGE OF THE GENUS AESTRELATA, BONAPARTE, IN THE GALAPAGOS ARCHIPELAGO.



1. *Aestrelata phœopygia*, Salvin.

AESTRELATA PHÆOPYGIA, Salvin.

Æstrelata phœopygia, SALVIN, Trans. Zool. Soc. Lond., IX, Pt. IX, May, 1876, p. 507, pl. LXXXVIII, figs. 1, 3 (Chatham Island, Galapagos Archipelago; collection Brit. Mus.).

Æstrelata phœopygia, RIDGWAY, Man. N. Amer. Birds, 1887, p. 65.

? *Œ.[strelata] sandwichensis*, RIDGWAY, in Baird, Brewer, and Ridgway's Water Birds N. Amer., II, 1884, p. 395, in text (Sandwich Islands; collection U. S. Nat. Mus.).

? *Æstrelata sandwichensis*, RIDGWAY, Proc. U. S. Nat. Mus., IX, 1886, p. 95; XI, 1888, p. 104.

Specific characters.—Axillars and under wing-coverts mostly white; above, including hind part and sides of head and neck and upper tail-coverts, dark brownish slate, darker on wings and tail, nearly black on head; feathers of neck and upper tail-coverts (the latter very abruptly) white beneath the surface; forehead, lores, cheeks, and entire under parts white, the sides and longer under tail-coverts sometimes irregularly barred with dusky. Wing, 11.50–12.25; tail, 5.01–5.47; culmen, 1.20–1.36, from nasal tubes, 0.90–1; depth of maxilla at base, 0.55–0.70; tarsus, 1.40–1.55; middle toe (without claw), 1.70–1.78.

Range.—Galapagos Archipelago: Chatham Island (Kellett and Wood); "off pass between Indefatigable and James" islands (Baur and Adams); "between Barrington and Indefatigable" islands (Baur and Adams). Sandwich Islands??.

The six examples of this species in Messrs. Baur and Adams' collection present among themselves some very noticeable though slight variations of plumage, these variations occurring in birds of the same sex and obtained the same date. In one female the back and scapulars are nearly uniform, though the tips of the feathers (broadly) are more of a grayish cast than the central (mostly concealed) portion; but there is not the slightest indication of the narrow grayish white tips seen to a greater or less extent in all the others, these being particularly well developed in another female, in which the whole dorsal region shows, besides these narrow whitish tips, a distinct ashy wash. In four of the six specimens the dusky color of the opposite sides of the lower neck is well separated by the immaculate pure white of the chest and lower fore neck; in one of the other two the dark color encroaches considerably on the sides of the chest, and even the front portion of the latter has a few very indistinct irregular transverse bars of grayish; while in the remaining example these markings are much more distinct, partaking of the character of quite regular bars, extending quite across the median portion of the chest. There is also some variation in the white on the basal portion of the inner webs of the primaries, which in some specimens is more distinctly contrasted with the adjacent dusky color than in others, but its extent is essentially the same in all.

According to Mr. Salvin,[1] my *Aestrelata sandwichensis* is the same as *A. phæopygia*. They certainly are much alike, and may be identical. But I am unable to match the type of the former among the six examples of the latter with which it has been carefully compared and from all of which it differs in the following particulars:

A. sandwichensis: Bill smaller (culmen from base of nasal tube 1.20, from anterior end of same 0.90), and nasal tubes shorter (0.30); hind neck and sides of neck light sooty slate, like back; feathers of back and scapulars without paler tips; inner webs of primaries without any definite white space, though basal portion is whitish.

A. phæopygia: Bill larger (culmen from base of nasal tube 1.30–

[1] See Proc. U. S. Nat. Mus., XI, 1888, p. 104.

1.36, from anterior end of same 0.92–1), and nasal tubes longer (0.33–0.38); hind neck and sides of neck black, like top of head; feathers of back and scapulars (especially the latter) with distinct narrow grayish white tips; inner webs of primaries with an extensive definite space of white, occupying (except on the first) at least the basal half.

It may be, of course, that a larger series, especially of the Sandwich Island bird, would show that these differences are inconstant; but until this has been demonstrated it seems best to regard *A. sandwichensis* as distinct, or at least to relegate it doubtfully to the synonymy of *A. phœopygia.*

Measurements of Aestrelata phœopygia.

Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Culmen from nasal tubes.	Depth of upper mandible at base.	Tarsus.	Middle toe.
Adult female	Between James and Indefatigable islands.	Aug. 21, 1891	11.50	5.47	1.30	0.90	.65	1.43	1.75
Adult male	do	Aug. 22, 1891	12.25	5.01	1.31	.98	.69	1.40	1.73
Adult female	do	do	11.75	5.02	1.36	1.00	.55	1.55	1.76
Do	do	do	11.56	5.38	1.30	.95	.70	1.41	1.70
Adult male	Between Indefatigable and Barrington islands.	July 11, 1891	12.00	5.42	1.35	1.00	.58	1.47	1.78
Adult female	do	do	11.75	5.30	1.30	1.00	.58	1.48	1.72
	Average		11.80	5.27	1.32	.97	.62+	1.46	1.74

Measurements of type of Aestrelata sandwichensis.

Number.	Collection.	Sex and age.	Locality.	Wing.	Tail.	Culmen.	Culmen from nasal tubes	Depth of upper mandible at base.	Tarsus.	Middle toe.
61259	U. S.	Adult	Sandwich Islands	11.70	5.80	1.22	0.90	0.57	1.35	1.55

Genus PUFFINUS, Brisson.

Puffinus, Brisson, Orn., VI, 1760, p. 131. Type, *Procellaria puffinus*, Brünnich.

Range.—Cosmopolitan (pelagic). Galapagos Archipelago (one peculiar species).

PUFFINUS SUBALARIS, Townsend, MS.

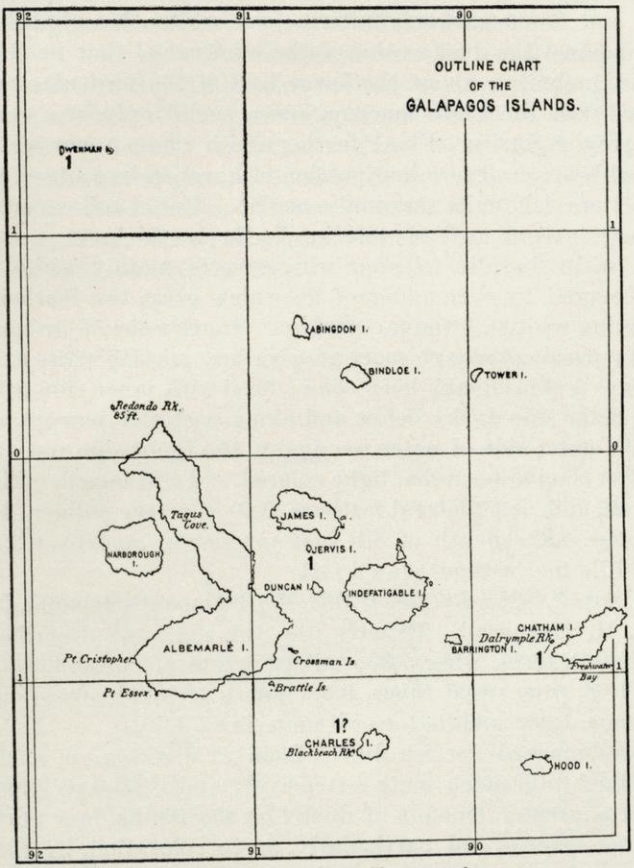
"*Puffinus tenebrosus*, Pelz.?" (nec Pelzeln), Townsend, Proc. U. S. Nat. Mus., XIII, 1890, p. 142 (Chatham Island, Galapagos Archipelago); Bull. Mus. Comp. Zool., XXVII, 1895, p. 126 (Chatham and Wenman islands).

Puffinus obscurus, (nec *Procellaria obscura*, Gmelin?), Salvin, Proc. Zool. Soc., 1883, p. 431 (Charles Island, Galapagos).

Specific characters.—Similar to *P. auduboni*, Finsch,[1] but decidedly smaller and with under wing-coverts conspicuously clouded with brownish gray; under tail-coverts darker.

Range.—Galapagos Archipelago: ?Charles Island (Markham); Dalrymple Rock, Chatham Island (Townsend); Kicker Rock and Jervis Island (Baur and Adams); Wenman Island (Townsend).

ASCERTAINED RANGE OF THE GENUS PUFFINUS, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Puffinus subalaris*, Townsend.

Adult male.—Type, No. 117472, U.S.N.M.; Dalrymple Rock, Chatham Island, Galapagos, April 6, 1888; C. H. Townsend. Upper portion of

[1] *Puffinus auduboni*, FINSCH, Proc. Zool. Soc., 1872, p. 111 (Cape Florida; Berlin Mus.).—RIDGWAY, in Baird, Brewer & Ridgway's Water Birds N. Amer., II, 1884, p. 386; Man. N. Amer. Birds, 1887, p. 60.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, No. 92.

Puffinus obscurus (nec *Procellaria obscura*, GMELIN), AUDUBON, Synop. 1839, p. 339.—LAWRENCE, in Baird's Birds N. Amer., 1858, p. 835.—COUES, Proc. Acad. Nat. Sci. Phila., 1864, p. 137.

head, including a little more than upper half of lores and auricular region, dull slate color, deepening into blackish slate on occiput and hind neck, and this into sooty black on rest of upper parts, some of the feathers of the mantle having very indistinct paler terminal margins. A small spot above posterior portion of lores (continued in a narrow streak over eye to its posterior angle), a crescentic spot on lower eyelid (continued narrowly above upper margin of ear coverts), dull white; lower portion of lores, entire side of head beneath ear-coverts, sides of neck and chest, and entire lower parts, except under tail-coverts and flank feathers, uniform pure white, this almost abruptly defined against the dusky color of the hind neck; that on the sides of the head, including about the lower half of the auricular region, and separated from the white space on lower eyelid only by a very narrow line of grayish dusky. Flank feathers with whole upper webs (except concealed bases) and terminal portion of lower webs sooty grayish with indistinct grayish white terminal margins. Under tail-coverts uniform dark sooty, except median anterior feathers, which are sooty grayish at tips, white basally. Under wing-coverts mainly white, but this mostly covered by a clouding of brownish gray, the feathers of this color having whitish terminal margins. Inner webs of primaries grayish dusky passing through sooty grayish into grayish white at the base. Bill (in dried skin) dusky horn color; tarsi with inner side wholly light colored, outer side dusky below and along posterior margin, otherwise brownish; outer side of outer toe dusky, the inner side and all the rest of the foot (including webs) light colored.[1] Total length (skin), 10.50; wing, 7.45; tail, 2.95, lateral feathers, 0.60 shorter; culmen, 1.10, from nasal tubes, 0.82; depth of bill just anterior to nostrils, 0.22; tarsus, 1.37; middle toe (without claw), 1.41.

Adult female.—No. 132728, U.S.N.M.; Galapagos Islands, March 28, 1891; C. H. Townsend. Exactly like the male, as described above. Length (skin), 10.80; wing, 7.35; tail, 2.85, lateral feathers, 0.60 shorter; culmen, 1.08, from nasal tubes, 0.80; depth of bill in front of nostrils, 0.25; tarsus, 1.38; middle toe (without claw), 1.39.

This well-marked species differs from *P. auduboni* in smaller size, more slender bill, much more extensively and distinctly dusky under tail-coverts, greater amount of dusky on the flanks, less purely white under wing-coverts, and particularly, as to coloration, by the greater extent and sharper definition of the dusky on the side of the head, a

[1] Mr. Adams' notes on the fresh colors of an adult female are as follows: "Upper mandible and tip of beak blackish slate, other parts of under mandible bluish gray (No. 8, Ridgway's Nomenclature of Colors); outer side of tarsus and outer toe black, other parts a little more pinkish than pearl blue."

Of another specimen (sex not given) he notes as follows: "Inner side of tarsus with a little mottling of blue and pink added to pearl gray; outer upper portion of tarsus with purple added; lower side of tarsus and outer toe brownish black; webs with a little yellow (naples) added to pearl gray; middle toe more bluish than webs, but inner toe with only a trace more blue than web. Upper mandible, except lower basal portion, slate black (also tip of lower); rest of bill french gray."

distinct band of this color extending from the lores beneath the eyes and across the ear-coverts to the occiput, the lower edge of this dusky color strongly and quite regularly defined against the white below it.

From *P. auricularis*, Townsend,[1] of Clarion Island (Reville-Gigedo group), the present species differs in being much smaller (*P. auricularis* being still larger than *P. auduboni*), in having the lower portion of the lores (almost the lower half) white, in the presence of a whitish spot above the anterior angle of the eye, dusky feathers on the flanks, and grayish clouding of the under wing-coverts—these characters, except the last, being possessed in common with *P. auduboni*.

From what I take to be *P. obscurus*, Gmelin, of which there are three examples from the Seychelles now before me, the Galapagos species differs conspicuously in the absence of the extensive patch of sooty gray (feathers with white terminal margins) covering the sides of the neck and chest, the region so marked in *P. obscurus* (?) being wholly pure white in *P. subalaris*. The Seychelles bird also has the lores wholly dusky, and lacks the small whitish spot above the anterior angle of the eye. Otherwise the two birds are much alike.

Measurements of Puffinus subalaris.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Culmen from nostrils.	Depth of bill in front of nostrils.	Tarsus.	Middle toe (without claw).
				1888.							
117142	U. S. N. M.	Adult male	Dalrymple Rock	Apr. 6	7.45	2.95	1.10	0.82	0.22	1.37	1.41
132726	U. S. N. M.	do	do	do	7.50	2.80	1.10	.80	.23	1.50	1.40
				1891.							
132727	U. S. N. M.	Adult female	Wenman Island	Apr. 4	7.88	2.95	1.15	.83	.25	1.45	1.48
132728	U. S. N. M.	do	Galapagos	Mar. 28	7.35	2.85	1.08	.80	.25	1.38	1.39
	B. & A.	do	Kicker Rock	Aug. 24	7.05	2.65	1.03	.84	.21	1.49	1.49
	B. & A.	do	do	do	7.20	2.80	1.04	.80	.22	1.33	1.45
487	B. & A.	Adult male	Jervis Island	Aug. 9	7.31	2.60	1.08	.85	.23	1.38	1.42
488	B. & A.	do	do	do	7.45	2.60	1.00	.80	.21	1.30	1.45
490	B. & A.	Adult female	do	do	7.00	2.60	1.05	.81	.22	1.30	1.45
491	B. & A.	do	do	do	7.32	2.65	1.05	.82	.21	1.31	1.40
493	B. & A.	do	do	do	7.25	2.65	1.01	.78	.22	1.39	1.47
494	B. & A.	Adult male	do	do	7.40	2.51	1.08	.80	.24	1.46	1.49
497	B. & A.	Adult female	do	do	7.20	2.70	1.09	.85	.21	1.32	1.38
			Average		7.33	2.72	1.06	.82	.22	1.44	1.46

Genus OCEANODROMA, Reichenbach.

Oceanodroma, Reichenbach, Syst. Av., 1852, p. iv. Type, *Procellaria furcata*, Gmelin.

Range.—Cosmopolitan (pelagic). Galapagos Archipelago (one species, found also in the Hawaiian group).

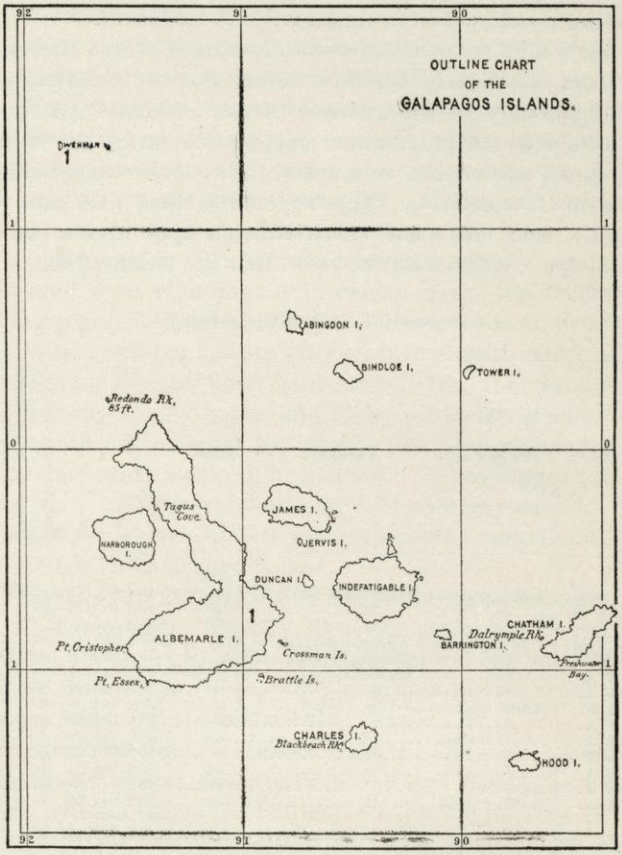
[1] *Puffinus auricularis*, Townsend, Proc. U. S. Nat. Mus., XIII, 1890, p. 133 (Clarion Island, off west coast of Mexico; U. S. Nat. Mus.).

OCEANODROMA CRYPTOLEUCURA, Ridgway.

Cymochorea cryptoleucura, RIDGWAY, Proc. U. S. Nat. Mus., IV, March 29, 1882, p. 337 (Waimea Kaui, Sandwich Islands; U. S. Nat. Mus.); in Baird, Brewer & Ridgway's Water Birds N. Amer., II, 1884, p. 406.

Oceanodroma cryptoleucura, RIDGWAY, Man. N. Amer. Birds, 1887, p. 71.—TOWNSEND, Bull. Mus. Comp. Zool., XXVII, 1895, p. 125 (Wenman Island, Galapagos; "*cryptoleucuera*").

ASCERTAINED RANGE OF THE GENUS OCEANODROMA, REICHENBACH, IN THE GALAPAGOS ARCHIPELAGO.



1.—*Oceanodroma cryptoleucura*, Ridgway.

(Also, "off Albemarle Island," Townsend.)

Specific characters.—Similar to *O. leucorhoa*, Vieillot, but tail shorter and much less forked, tarsus shorter, longer upper tail-coverts broadly tipped with black, and tail feathers extensively white basally. Wing, 5.75–6.35; tail, 2.75–3, forked for 0.15–0.30; culmen, 0.55–0.61; tarsus, 0.80–0.92; middle toe, 0.77–0.90.

Range.—Hawaiian Archipelago; Galapagos Archipelago: Wenman Island and off Albemarle Island (Townsend).

Adult male.—No. 132763, U. S. N. M.; Wenman Island, Galapagos, April 4, 1891; C. H. Townsend. Above uniform very dark sooty, with a faint greenish slaty gloss in some lights; greater wing-coverts broccoli brown, producing an oblique band across the wing; remiges and primary coverts dull black; upper tail-coverts white, the longer ones abruptly tipped with black; tail black, with the concealed basal portion of the four outermost rectrices white, this most extensive on the lateral pair, where partly exposed beyond the coverts. Under parts deep sooty grayish brown (much lighter than upper parts), the sides of the crissum and the lateral under tail-coverts (also basal portion of longer median ones) white. Bill, legs, and feet wholly black. Length (skin), 7.20; wing, 5.85; tail, 2.80, forked for 0.15; culmen, 0.61; nasal tubes, 0.30; depth of bill in front of nostrils, 0.20; tarsus, 0.88; middle toe, 0.85.

This species, while bearing a superficial resemblance to *O. leucorhoa*, Vieillot, is in reality quite different in several very obvious particulars, as follows: (1) The upper tail-coverts are pure (instead of grayish) white, terminated by a narrow band (about 0.30–0.50 of an inch wide at the broadest part) of black. (2) The rectrices (except two middle pairs) are pure white basally, the next to the middle pair being pale grayislr on the basal portion. (This white is mostly concealed by the tail-coverts, but is partly exposed on the lateral pair, partly on account of the greater extent of the white itself, but also because the lateral coverts are shorter than the middle ones.) (3) The greater wing-coverts and outer webs of the tertials are much darker, offering less decided contrast with the general color of the wings. (4) The tail is far less deeply forked, the difference in length between the longest and shortest rectrices being from 0.15 to 0.30 of an inch instead of 0.75–0.90. The tarsus is also shorter, and there are additional minor differences scarcely worth noting.

O. cryptoleucura is, however, much more closely related to *O. macrodactyla* (Bryant)[1] of Guadalupe Island, Lower California, which also has the black tips to the longer upper tail-coverts and the concealed white at the base of the tail. *O. macrodactyla* is much larger, however, (wing 6.10–6.70, tail 3.30–3.90), the tail much more deeply forked (depth of fork 0.90–1.40), and feet proportionally larger (tarsus 0.86–1, middle toe with claw 1.10–1.18).

Both species are typical members of the subgenus *Cymochorea*, Coues, having very prominent nasal tubes, the outer toe longer than the middle, the latter (including its claw) about equal to the tarsus, and the first primary shorter than the fourth, as in the type species (*O. leucorhoa*).

[1] *Oceanodroma leucorhoa macrodactyla*, Bryant, Proc. Cal. Ac. Sci., II, 1887.—(Guadalupe Island, Lower California; collection of W. E. Bryant).

Oceanodroma macrodactyla, American Ornithologists' Union, Check List, abridged ed. 1889, No. 1061.

The four adult males of *O. cryptoleucura* collected among the Galapagos by Mr. Townsend agree very closely with Hawaiian examples collected by Mr. V. Knudsen, though slight differences are apparent. They are perceptibly darker in general color, though this may be due to their fresher condition; the black tips to the longer upper tail-coverts average rather narrower; the bill is a little thicker, and the tarsi and toes are quite decidedly shorter, averaging 0.83 and 0.82, respectively, against 0.89 and 0.95 in Hawaiian specimens. It is possible, however, these slight differences might disappear if a larger number of specimens were compared.

Measurements of Oceanodroma cryptoleucura.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Fork of tail.	Culmen.	Nasal tubes.	Depth of bill in front of nostrils.	Tarsus.	Middle toe.
41949	U.S.N.M.	Adult	Kauai, Hawaiian Islands.		6.25	2.88	....	.60	.28	20	.92	.82
41450	U.S.N.M.	do	do		5.80	2.75	.20	.58	.27	.18	.88	.85
61260	U.S.N.M.	do	do		6.35	2.90	.30	.60	.28	.18	.85	.90
61261	U.S.N.M.	do	do		6.10	2.85	.20	60	.30	.19	.95	.90
115461	U.S.N.M.	do	do		5.75	2.75	.25	.55	.25	.20	.88	.81
115462	U.S.N.M.	do	do		6.00	2.95	.30	.58	.25	.18	.88	.82
			Average		6.00	2.85	.25	.58½	.27	.19	.89	.85
				1891.								
132762	U.S.N.M.	Adult male	Off Albemarle Island, Galapagos.	Apr. 11	5.90	2.75	.30	.55	.27	.22	.82	.88
132763	U.S.N.M.	do	Wenman Island	Apr. 4	5.85	2.80	.15	.61	30	.20	.88	.85
132764	U.S.N.M.	do	do	do	6.00	3.00	.30	.60	.28	.20	.80	.78
	C.H.T.	do	do	do	6.00	3.00	.25	.59	.28	.20	.82	.77
			Average		5.94	2.89	.25	.59	.28	.20	.83	.82

Genus PROCELLARIA, Linnæus.

Procellaria, LINNÆUS, Syst. Nat., 10th ed., I, 1758, p. 131. Type, by elimination, *P. pelagica*, Linnæus.

Range.—Cosmopolitan (pelagic). Galapagos Archipelago (one peculiar species).

PROCELLARIA TETHYS, Bonaparte.

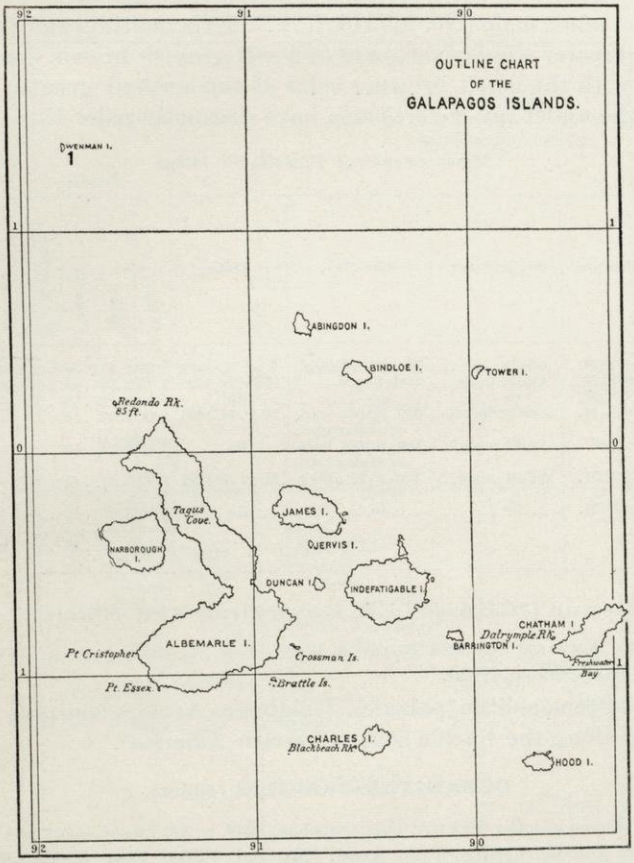
Procellaria tethys, BONAPARTE, Compt. Rend., XXXVIII, 1854, p. 662 (Notes Orn., p. 92) (Galapagos); XLII, 1856, fig. 769; Consp Av., II, 1857, p. 197.—COUES, Proc. Acad. Nat. Sci. Phila., 1864, p. 80.—SALVIN, Trans. Zool. Soc., IX, Pt. IX, 1876, p. 507, pl. LXXXVIII, fig. 2 (Galapagos?).—RIDGWAY, Man. N. Amer. Birds, 1887, p. 70.—TOWNSEND, Proc. U. S. Nat. Mus., XIII, 1890, p. 142 (near equator, 400 and 600 miles east of Galapagos); Bull. Mus. Comp. Zool., XXVII, 1895, p. 126 (off Chatham Island, and 400 miles east of Galapagos).

Specific characters.—Similar to *P. pelagica*, Linnæus, but longer upper tail-coverts entirely white; no white on under side of wings; tail emarginated. Wing, 4.90–5.03; tail, 2.22–2.55, forked for 0.15–0.25; culmen,

0.43–0.52; nasal tubes, 0.20–0.30; tarsus, 0.80–0.92; middle toe (with claw), 0.72–0.78.

Range.—Galapagos Archipelago and contiguous waters. Galapagos (Bonaparte, Townsend); Wenman Island (Townsend); 400 miles and 600 miles east of Galapagos (Townsend); latitude 4° 22′ N., longitude 82° 03′ W. (Townsend).

ASCERTAINED RANGE OF THE GENUS PROCELLARIA, LINNÆUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Procellaria tethys*, Bonaparte.

Adult male.—No. 132767, U.S.N.M.; "Galapagos Islands," March 28, 1891; C. H. Townsend. Above uniform sooty black, the upper tail-coverts entirely white and the greater and middle wing-coverts light brown; entire under parts uniform deep sooty brown, the throat and chest slightly and the under surface of the wings considerably darker. Bill, legs, and feet entirely black. Total length (skin), 6.10; wing, 5.25 (second quill longest, first shorter than third); tail, 2.35, forked for 0.25; culmen, 0.45; nasal tubes, 0.25; tarsus, 0.88; middle toe and claw, 0.75.

Adult female.—No. 132769, U.S.N.M.; on equator, 600 miles east of the Galapagos, March 24, 1891; C. H. Townsend. In coloration exactly like the male as described above. Total length (skin), 5.80; wing, 4.90; tail, 2.22, forked for 0.15; culmen, 0.48; nasal tubes, 0.23; tarsus, 0.92; middle toe (with claw), 0.72.

The seven specimens collected by Mr. Townsend are essentially alike in coloration. One, however (No. 132768, adult male), has the feathers of the abdomen very much worn, thus showing a decidedly lighter hue than specimens with these feathers in perfect condition.

Another adult male (No. 117475, U.S.N.M.) is molting, and the newly acquired greater wing-coverts are of a soft grayish brown, contrasting strongly with the much browner color of the unshed greater coverts. Some of the under tail-coverts also have distinctly paler tips.

Measurements of Procellaria tethys.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Nasal tubes.	Tarsus.	Middle toe (with claw).	Fork of tail.
132766	U.S.N.M.	Adult	Wenman Island.	Apr. 4, 1891	5.35	2.55	0.50	0.25	0.90	0.72	0.20
132767	U.S.N.M.	Adult male...	Galapagos.....	May 28, 1891	5.25	2.35	.45	.25	.88	.75	.25
132768	U.S.N.M.	.....do	.....do.....	.....do.....	5.30	2.40	.50	.30	.92	.75	.15
132769	U.S.N.M.	Adult female.	600 miles east of Galapagos.	Mar. 24, 1891	4.90	2.22	.48	.23	.92	.72	.15
	C.H.T.	Adult male?..	400 miles east of Galapagos.	.....do	5.45	2.30	.52	.28	.92	.78	.20
132770	U.S.N.M.	Adult male...	Lat. 4° 22′; long. 82° 03′.	Mar. 1, 1891	4.90	2.30	.45	.25	.85	.72	.20
117475	U.S.N.M.	.....do	.....do.....	.....do	4.90	2.37	.43	.20	.80	.72	.....
			Average ..	.....	5.15	2.35	.48	.23	.88	.74	.19

Genus OCEANITES, Keyserling and Blasius.

Oceanites, KEYSERLING and BLASIUS, Wirb. Eur., I, 1840, p. xciii. Type, *Procellaria oceanica*, Kuhl.

Range.—Cosmopolitan (pelagic). Galapagos Archipelago (one species, found also along the Pacific coast of South America).

OCEANITES GRACILIS (Elliot).

Thalassidroma gracilis, ELLIOT, Ibis, October, 1859, p. 391 (west coast of America).[1]
Oceanites gracilis, COUES, Proc. Acad. Nat. Sci. Phila., 1864, p. 85.—RIDGWAY, Man. N. Amer. Birds, 1887, p. 71.

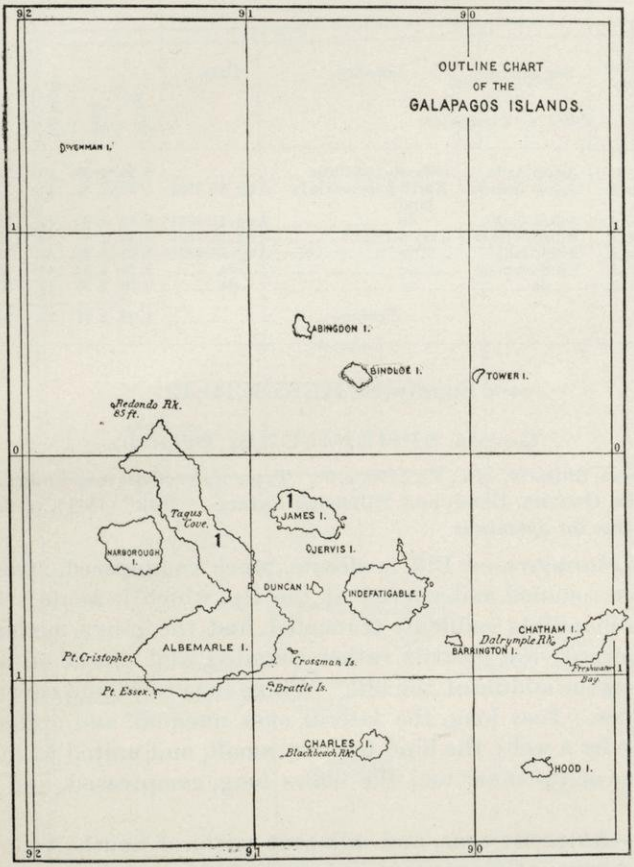
Specific character.—Belly white; webs of feet wholly dusky; tail more or less emarginated, and with basal portion of inner webs of three outermost rectrices white. Wing, 5.25–5.50; tail, 2.25–2.35; culmen, 0.40–0.48, from nasal tubes, 0.22–0.25; tarsus, 1.14–1.24; middle toe, 0.78–0.86.

Range.—Coast of Chile; Galapagos Archipelago: North Albemarle and James islands (Baur and Adams).

[1] Under "Remarks," Mr. Elliot says: "This species is very abundant on the coast of Chile;" there is thus reason to suppose that his type came from there.

Adult male.—No. 33923, U.S.N.M.; Chile, Maison Verreaux, No. 4096. General color dark sooty brown, darker on rump and remiges, the tail brownish black; greater wing-coverts light grayish brown, still paler on margins, forming a conspicuous oblique bar across closed wing; upper tail-coverts, sides of rump, and entire abdomen white; under tail-coverts dusky, with white, triangular, basal spots, mostly concealed; three outermost rectrices with basal portion of inner webs

ASCERTAINED RANGE OF THE GENUS OCEANITES, KEYSERLING AND BLASIUS, IN THE GALAPAGOS ARCHIPELAGO.



1. *Oceanites gracilis* (Elliot).

white, this forming an acute angle posteriorly, abruptly defined against the blackish color succeeding it. Bill, legs, and feet uniform black, the webs wholly dusky. Total length (skin), 5.50; wing, 5.20 (second quill longest, first shorter than third); tail, 2.35, forked for about 0.30; culmen, 0.43, from nasal tubes, 0.25; tarsus, 1.15; middle toe and claw, 0.90.

The six Galapagos specimens in the collection of Messrs. Baur and

Adams agree very closely with the one from Chile described above. In some, however, there is a distinct indication of a paler supraloral spot. The emargination of the tail is exceedingly slight, and disappears altogether when the tail is half spread. The three outer rectrices have the basal portion of their inner webs white, including the shaft, the white most extensive on the outer feather, where occupying more than the basal third, its posterior portion forming an acute angle with apex next to the shaft.

Measurements of Oceanites gracilis.

Number.	Collection.	Sex and age.	Locality.	Date.	Wing.	Tail.	Culmen.	Culmen from nasal tubes.	Tarsus.	Middle toe.
33923	U. S.	Adult male	Off coast of Chile		5.20	2.35	.43	.25	1.15	.....
500	B. & A.	Adult female	North Albemarle Island.	Aug. 10, 1891	5.30	2.30	.43	.25	1.24	.86
505	B. & A.	Adult male	do	Aug. 11, 1891	5.45	2.30	.42	.22	1 20	.82
533	B. & A.	Adult female	James Island	Aug. 15, 1891	5.30	2.30	.40	.25	1.20	.80
534	B. & A.	Adult male	do	Aug. 13, 1891	5.25	2.25	.48	.24	1.20	.78
535	B. & A.	Adult female	do	do	5.25	2.32	.45	.25	1.15	.83
536	B. & A.	do	do	do	5.50	2.35	.42	.25	1 14	.78
			Average		5.32	2.31	.43	24	1.18	.81

Family SPHENISCIDÆ.

Genus SPHENISCUS, Brisson.

Spheniscus, Brisson, Orn., VI, 1790, p. 96. Type, *Aptenodytes magellanicus*, Forster.
Dypsicles, Gloger, Hand- und Hilfsbuch Naturg., "1842" (1841), p. 476. (Substitute for *Spheniscus*.)

Generic characters.—"Bill moderate, much compressed, strong, with the culmen rounded and curved at the tip, which is acute; the tip of the lower mandible suddenly truncated, and the gonys moderate and curved upward; the nostrils rather rounded, and placed in a lateral groove near the middle of the bill. Wings imperfect, and covered with small scales. Toes long, the lateral ones unequal, and united to the middle toe by a web; the hind toe very small, and united to the tarsus at the base of the inner toe; the claws long, compressed, and slightly curved."[1]

Range.—Antarctic seas, and adjacent parts of South America and southern Africa. Galapagos Archipelago (one peculiar species).

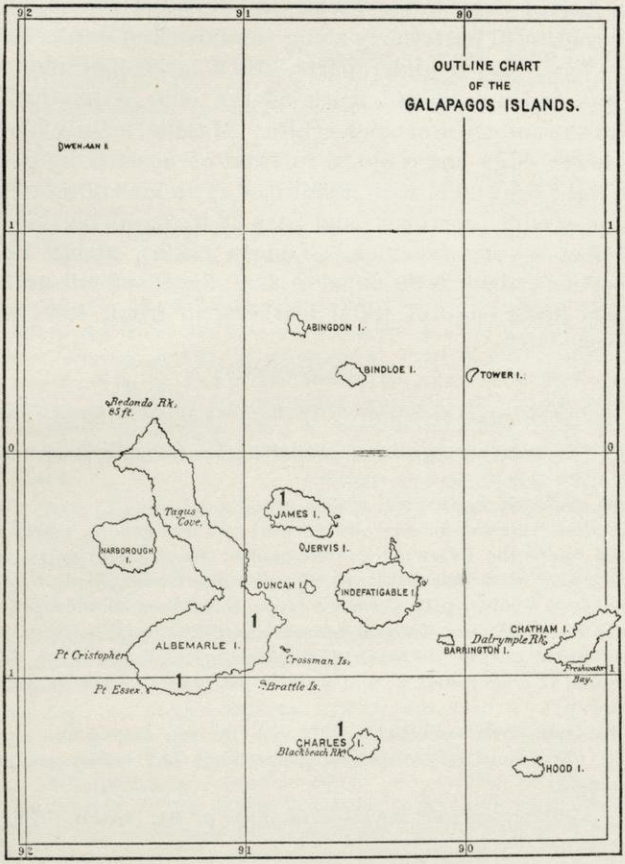
SPHENISCUS MENDICULUS, Sundevall.

Spheniscus mendiculus, Sundevall, Proc. Zool. Soc., 1871, pp. 126, 129 (James Island, Galapagos).—Salvin, Trans. Zool. Soc., IX, Pt. ix, 1876, p. 508, pl. lxxxix (James Island).—Wolf, Besuch. aus den Galápagops Inseln, 1879, p. 42 (Post-Office Bay, Charles Island).—Ridgway, Proc. U. S. Nat. Mus., XII, 1889, p. 119 (Albemarle Island).

[1] Gray, Genera of Birds, III, p. 640.

Specific characters.—Similar to *S. magellanicus* (Forster[1]), from the Falkland Islands and Straits of Magellan, but with longer and more slender bill; mandible with basal two-thirds or more yellowish, instead of wholly black; size less; chin white; postocular white stripe much narrower; no well-defined dusky band across fore neck (above the one across chest), and without whitish posterior margin to wing. Length (skin), about 17.50; wing (from insertion), about 5.50; culmen, 2.20; middle toe, with claw, 2.30–2.40.

ASCERTAINED RANGE OF THE GENUS SPHENISCUS, BRISSON, IN THE GALAPAGOS ARCHIPELAGO.



1. *Spheniscus mendiculus*, Sundevall.

Range.—Galapagos Archipelago: Albemarle Island (*Albatross*); South Albemarle Island (Baur and Adams); Post-Office Bay, Charles Island (Wolf); James Island (Kinberg, Baur and Adams).

Adult.—No. 115982, U.S.N.M.; Albemarle Island, April 10, 1888; C. H. Townsend. Above slate-black, each feather with a subterminal pair of

[1] *Aptenodytes magellanicus*, FORSTER, Nov. Comm. Gott., III, 5, p. 143, pl. v.—*Spheniscus magellanicus*, SCLATER, Proc. Zool. Soc., 1860, p. 390.

minute brownish gray specks, producing an indistinct finely speckled appearance; sides of head and entire throat plain brownish gray, darker on auriculars, which are bordered above and behind by a narrow, broken, postocular streak of white, which, curving downward behind the auriculars, crosses the lower throat in a broader band, broken by the partly exposed deep brownish gray bases to the feathers; fore neck, medially, mottled or clouded with white tips to the feathers, their bases being deep brownish gray, the sides of the neck being uniformly of this color; a broken arched band of white on the chest, with a broader one of deep brownish gray immediately beneath it, whose lateral extremities, as are also those of the adjoining white band, are continued posteriorly along the sides and flanks to the insertion of the legs; rest of under parts, also a large spot immediately in front of eye and a V-shaped mark on the chin, extending obliquely upward to the anteorbital spot, white. Maxilla mainly blackish, but with the lower edge and a space in front of nostrils light brownish; mandible light brownish, with about 0.60 of an inch of its terminal portion, its upper edge (narrowly) and part of its basal portion, blackish; legs and feet wholly blackish.[1] Length (skin), about 17.50; wing (from insertion), about 5.40; culmen, 2.20; depth of bill at base, 0.75; tarsus, from lower edge of tibial feathers, in front, 1.09; middle toe (with claws), 2.32.

BIBLIOGRAPHY.

List of Books and Papers pertaining to the Avifauna of the Galapagos Archipelago.

GOULD, J.: [Remarks on a group of ground finches from Mr. Darwin's collection, with characters of the new species.]

Proc. Zool. Soc. London, Pt. v, 1837, pp. 4-7.

The so-called "ground finches" are divided into four genera, which are characterized under the following generic names: *Geospiza* (type, *G. magnirostris*, Gould), p. 5; *Camarhynchus* (type, *C. psittacula*, Gould), p. 6; *Cactornis* (type, *C. scandens*, Gould), p. 6; *Certhidea* (type, *C. olivacea*, Gould), p. 7. The new species are as follows: *Geospiza magnirostris, G. strenua, G. fortis, G. nebulosa, G. fuliginosa*, p. 5; *G. dentirostris, G. parvula, G. dubia*, p. 6; *Camarhynchus psittacula, C. crassirostris*, p. 6; *Cactornis scandens, C. assimilis*, p. 7; *Certhidea olivacea*, p. 7.

Based on specimens collected by Charles Darwin during the voyage of the *Beagle*. No localities, except the general one of "Galapagos Islands," are mentioned.

GOULD, J.: [Observations on the raptorial birds in Mr. Darwin's collection, with characters of the new species.]

Proc. Zool. Soc. London, Pt. v, 1837, pp. 9-11.

The new Galapagos species described are *Polyborus galapagoensis*, p. 9, and *Otus (Brachyotus) galapagoensis*, p. 10.

GOULD, J.: [Exhibition of the fissirostral birds from Mr. Darwin's collection, and characters of the new species.]

Proc. Zool. Soc. London, Pt. v, 1837, p. 22.

Hirundo concolor is the only Galapagos species mentioned.

[1] "Light parts of feet and bill light pinkish cream-buff." (Adams, MS.) "Male, iris walnut brown, with lighter inner ring." (Adams.)

GOULD, J.: [Characters of two new species of the genus *Sterna*, a species of cormorant, and three species of the genus *Orpheus*, from the Galapagos, in the collection of Mr. Darwin.]

Proc. Zool. Soc. London, Pt. v, 1837, pp. 26–27.

The Galapagoan species are *Orpheus trifasciatus*, *O. melanotis*, and *O. parvulus*, characterized on page 27.

"NÈBOUX, ——: Descriptions d'oiseaux nouveaux recueillis pendant l'expedition de la Vénus. Revue Zool., III, 1840, pp. 289–291."

(Not seen. Title from Dr. Baur.)

GOULD, JOHN: The | Zoology | of | the Voyage of H. M. S. Beagle, | under the command of Captain Fitzroy, R. N., | during the years | 1832 to 1836.—Published with the approval of | the Lords Commissioners of Her Majesty's Treasury. | Edited and Superintended by | Charles Darwin, Esq., M. A., F. R. S., Sec. G. S. | Naturalist to the Expedition. | ——— | Pt. III. | Birds, | by | John Gould, Esqr. F. L. S. | ——— | London: | Published by Smith, Elder and Co. 65, Cornhill. | MDCCCXLI. | [4to. 4 p. ll. pp. ii, 156, 4 ll., 50 colored plates.]

Most of the Galapagoan species had been previously described by Mr. Gould in Proc. Zool. Soc. London, Pt. v, 1837, pp. 4–7, 9–11, 22, and 26–27, but the following are additional thereto: *Strix punctatissima*, "G. R. Gray," p. 34, pl. IV (James Island); *Pyrocephalus nanus*, p. 45, pl. VII; *Pyrocephalus dubius*, p. 46; *Myiobius magnirostris*, p. 48, pl. VIII (Chatham Island); *Sylvicola aureola*, p. 86, pl. XXVIII; *Zenaida galapagoensis*, p. 115, pl. XLVI; *Totanus fuliginosus*,[1] p. 130; *Zapornia spilonota*, p. 132, pl. XLIX; *Larus fuliginosus*, p. 141. (The locality, except where otherwise stated above, is given simply as "Galapagos Archipelago.") The following previously described species are figured: *Craxirex galapagoensis*, pl. II; *Otus galapagoensis*, pl. III; *Progne modestus*, pl. V; *Mimus trifasciatus*, pl. XVI; *M. melanotis*, pl. XVII; *M. parvulus*, pl. XVIII; *Geospiza magnirostris*, pl. XXXVI; *G. strenua*, pl. XXXVII; *G. fortis*, pl. XXXVIII; *G. parvula*, pl. XXXIX; *Camarhynchus psittacula*, pl. XL; *C. crassirostris*, pl. XLI; *Cactornis scandens*, pl. XLII; *C. assimilis*, pl. XLIII; *Certhidea olivacea*, pl. XLIV. *Craxirex* (type, *Polyborus galapagoensis*, Gould), p. 22, is described as a new genus.

HABEL, Dr. [A.]: [Exhibition of and remarks upon some birds from the Galapagos Islands.]

Proc. Zool. Soc. London, 1869, p. 433.

(Brief paragraph, referring to his collection of "upwards of 300 specimens, referable to about 70 species."[2])

SCLATER, P. L., and SALVIN, OSBERT: Characters of new Species of Birds collected by Dr. Habel in the Galapagos Islands. By P. L. Sclater, M. A., Ph. D., F. R. S., and Osbert Salvin, M. A.

Proc. Zool. Soc. London, 1870, pp. 322–327, figs. 1–6.

Based on a collection made by Dr. A. Habel, of New York, the total number of specimens being 460, representing three islands, as follows: Indefatigable Island (267 specimens); Bindloe Island (94); Abingdon Island (84); island unspecified (15). A list of the 37 species is given on page 323, showing the number of specimens collected of each, and also the number of specimens procured on each island. The new species described are as follows: (1) *Certhidea fusca*, p. 324, fig. 1, Abingdon and Bindloe islands; (2) *Camarhynchus variegatus*, p. 324, fig. 2, Abingdon and Bindloe islands; (3) *Camarhynchus habeli*, p. 325, fig. 3, Abingdon and Bindloe islands; (4) *Camarhynchus prosthemelas*, p. 325, fig. 4, Indefatigable Island; (5) *Cactornis abingdoni*, p. 326, fig. 5, Abingdon Island; (6) *Cactornis pallida*, p. 327, fig. 6, Indefatigable Island; (7) *Nycticorax pauper*, p. 327, Indefatigable Island.

[1] = *Heteractitis incanus* (Gmelin).

[2] Actual numbers, 460 specimens and 37 species, as determined by Messrs. Sclater and Salvin. Cf. Sclater and Salvin, Proc. Zool. Soc., 1870, p. 323.

SUNDEVALL, Prof. CARL J., F. M. Z. S. On Birds from the Galapagos Islands.
Proc. Zool. Soc. Lond., 1871, pp. 124–130.

Based on collections made by Dr. Kinberg, zoologist and surgeon of the Swedish frigate *Eugenie* (Commander Virgin), during nine days of May, 1852. Twenty-six species are enumerated, of which the following are described as new: (1) *Ardea plumbea*, pp. 125, 127, James Island; (2) *Spheniscus mendiculus*, pp. 126, 129, James Island. Five additional species are for the first time recorded from the Galapagos, as follows: *Hæmatopus "palliatus"* (=*H. galapagensis*, Ridgway); *Pelecanus "fuscus"* (=*P. californicus*, Ridgway); *Dysporus cyanops; D. "leucogaster"* (=*Sula brewsteri*, Goss); *Anas maculirostris*, Lichtenstein (=*A. versicolor*, Vieillot). There are also critical notes on the following species: *Mimus melanotis*, Gould (p. 126, descriptions of the various plumages); *M. trifasciatus*, Gould, *M. parvulus*, Gould, *Myiarchus magnirostris*, *Buteo galapagensis* (p. 127); *Ardea violacea*, L., (*varietas?*), pp. 128, 129.

SCLATER, PHILIP LUTLEY: [Extract from a report of the visit of H. M. S. *Peterel* to the Galapagos Islands.]
Proc. Zool. Soc. Lond., 1876, pp. 178, 179.

Brief mention only is made of the birds, their excessive tameness being alluded to. No particular species named.

SALVIN, OSBERT: On the Avifauna of the Galapagos Archipelago. By Osbert Salvin, M. A., F. R. S., etc. <Transactions of the Zoological Society of London, IX, Pt. IX, May, 1876, pp. 447–510, pls. LXXXIV–LXXXIX, with a map of the archipelago.

This most important contribution to our knowledge of Galapagos ornithology is a masterly treatment of the subject, under the following separate headings:

I. Introductory remarks. Situation, number, and size of the different islands of the archipelago; geological formation; climate, etc.; date of their discovery; attempts at colonization; subsequent intercourse with the mainland, and its effect on the indigenous fauna; Dr. Habel's account of his visit (pp. 447–461).

II. Short account of the literature relating to the birds of the Galapagos (pp. 461–462).

III. List of species of birds found in the archipelago, and remarks on their relationship to the birds of other countries—(*a*) as to species, (*b*) as to genera, and (*c*) as to families (pp. 463–466).

IV. Summary of the birds found on each island (pp. 466–469).

V. On the variation of the species in certain genera and the consequent difficulty in defining specific limits (pp. 469–470).

VI. Account of each species, with references, description of peculiar species, their distribution, habits, and general remarks (pp. 471–509).

VII. Concluding remarks (pp. 509–510).

The total number of species given is 57, of which only one (*Œstrelata phœopygia*, p. 507, pl. LXXXVIII, fig. 1) is described as new. Those figured are as follows: pl. LXXXV, *Camarhynchus variegatus*, ♂ and ♀; pl. LXXXVI, *Camarhynchus habeli*, ♂ and ♀; pl. LXXXVII, *Larus fuliginosus*, adult and immature; pl. LXXXVIII, figs. 1 and 3, *Œstrelata phœopygia*, fig. 2, *Procellaria tethys*; pl. LXXXIX, *Spheniscus mendiculus*.

SHARPE, R. BOWDLER: Account of the Zoological Collection made during the visit of H. M. S. 'Peterel' to the Galapagos Islands. Communicated by Dr. Albert Günther, F. R. S., V. P. Z. S., Keeper of the Zoological Department, British Museum. I, Birds. By R. Bowdler Sharpe.
Proc. Zool. Soc., 1877, pp. 65, 66.

Based on a very small collection of birds made on Albemarle and Charles islands by Commander W. E. Cookson, in June, 1895. Only four species of birds are mentioned, as follows: *Mimus parvulus*, Albemarle Island (p. 65); *Dendræca aureola*, Charles Island (p. 66); *Geospiza fuliginosa*, Albemarle Island (p. 66), and *Pyrocephalus "nanus* (Gould)" (=*P. carolensis*, Ridgway), Charles Island (p. 66). The names of these species are followed by critical notes.

SHARPE, R. BOWDLER: Notes on Anous.

"*Philos. Trans.*, CLXVIII, 1879, 469."

Anous galapagensis described as a new species. (Citation from Dr. Baur.)

SALVIN, OSBERT: A List of the Birds collected by Capt. A. H. Markham on the West Coast of America. By Osbert Salvin, M. A., F. R. S.

Proc. Zool. Soc. London, 1883, pp. 419–432.

The following Galapagos species (collected in 1881 or 1882) are mentioned: *Dendræca aureola*, Charles Island (p. 420); *Geospiza fortis*, Charles Island (421); *Pyrocephalus nanus* (=*P. carolensis*, Ridgway), Charles Island (p. 424); *Pelecanus fuscus* (= *P. californicus*, Ridgway), Charles Island (p. 427); *Sula cyanops*, Charles Island (p. 427); *Dafila bahamensis* (=*Pœcilonetta galapagensis*, Ridgway), Charles Island (p. 428); *Butorides plumbeus*, Charles Island (p. 428); *Numenius borealis*, Charles Island (p. 429—new to the Galapagos!); *Anous galapagensis*, Charles Island (p. 430); *Puffinus obscurus* (=*P. subalaris*, Townsend?), Charles Island (p. 431).

WOLF, THEODOR: "Ein Besuch. aus den Galápagos Inseln. Heidelberg, 1879, 44 pp." (Not seen; title from Dr. G. Baur.)

Contains interesting information concerning an albatross (supposed to be *Diomedea exulans*) which bred abundantly on Hood Island and also the first description (unaccompanied by a name, however) of *Spheniscus mendiculus!*

RIDGWAY, ROBERT: Description of a new species of Oyster-Catcher from the Galapagos Islands.

The Auk, III, July, 1886, p. 331.

Hæmatopus galapagensis, from Chatham Island, where collected August 16, 1884, by Dr. William H. Jones, U. S. N., surgeon U. S. S. *Wachusett.*

RIDGWAY, ROBERT: Scientific results of explorations by the United States Fish Commission steamer *Albatross*. [Published by permission of Hon. Marshall McDonald, late United States Commissioner of Fish and Fisheries.] No. I, Birds collected on the Galapagos Islands in 1888.

Proc. U. S. Nat. Mus., XII, No. 767, Feb. 5, 1890, pp. 101–128.

Based upon a collection made, in April, 1888, by Prof. Leslie A. Lee, naturalist of the expedition, assisted by Mr. Charles H. Townsend and Mr. Thomas Lee.

Forty-seven species are mentioned, of which the following are described as new: (1) *Nesomimus* (new genus: Type, *Orpheus melanotis*, Gould) *macdonaldi*, Hood Island, p. 103, fig. 1; (2) *Nesomimus personatus*, Abingdon Island, p. 104; (3) *Certhidea cinerascens*, Hood Island, p. 105; (4) *Geospiza conirostris*, Hood Island, p. 106, fig. 2; (5) *Geospiza media*, Hood Island, p. 107, fig. 3; (6) *Cactornis brevirostris*, Charles Island, p. 108, fig. 4; (7) *Camarhynchus townsendi*, Charles Island, p. 110, fig. 5; (8) *Camarhynchus pauper*, Charles Island, p. 111, fig. 6; (9) *Pœcilonetta galapagensis*, Charles Island, p. 115. Besides these, two other species were named provisionally, as follows: *Cactornis hypoleuca* (if distinct from *C. pallida*, Sclater and Salvin), James Island, p. 109, in text; *Pyrocephalus minimus*, Chatham Island, p. 113, in text.

BAUR, G.: On the origin of the Galapagos Islands.

American Naturalist, XXV, 1891, pp. 217–229, 307–326.

Dr. Baur's theory is that the Galapagos "are continental islands, originated through subsidence," and many facts of distribution are adduced to support this view of their origin. This paper was written before Dr. Baur visited the Galapagos.

BAUR, G.: [An account of his trip to the Galapagos Islands.]

American Naturalist, XXV, 1891, pp. 902–907.

A letter dated "Chatham Island, . . . August 28, 1891, containing a very interesting account of his investigations upon the different islands of the group, all of which, according to his views, confirm his previously expressed opinion as to the origin of the islands. The article should be carefully read in this connection.

AGASSIZ, ALEXANDER: Bulletin of the Museum of Comparative Zoölogy at Harvard College. | XXIII. No. 1. | ——— | Reports on the Dredging Operations off the West Coast of | Central America to the Galapagos, to the West Coast | of Mexico, and in the Gulf of California, in charge of | Alexander Agassiz, carried on by the U. S. Fish Commis- | sion Steamer *Albatross*, Lieut. Commander Z. L. Tanner, | U. S. N., commanding. | II. | General Sketch of the Expedition of the *Albatross*, | from February to May, 1891. | By Alexander Agassiz. | [Published by Permission of Marshall McDonald, U. S. Fish Commissioner.] | With Twenty-Two Plates. | Cambridge, U. S. A.: | Printed for the Museum. | February, 1892. |

8vo., pp. 89.

This important work contains no special reference to birds, but excellent descriptions of the several islands are given besides other information of much interest in connection with the subject.

RIDGWAY, ROBERT: Descriptions of twenty-two new species of birds from the Galapagos Islands.

Proc. U. S. Nat. Mus., XVII (advance sheets published November 15, 1894), pp. 357-370.

The new species herein described were contained in the very large and valuable collection of Galapagos birds made by Dr. G. Baur and Mr. C. F. Adams, in 1891, which was referred to the author for determination of the species soon after the return of those gentlemen from their highly successful exploration of that remarkable island group. Many of the specimens having been collected on islands never before visited by a collector, the number of new species found among them was, as might be expected, unusually large. The new forms described are the following: (1) *Nesomimus bauri*, Tower Island, p. 357; (2) *Nesomimus bindloei*, Bindloe Island, p. 358; (3) *Nesomimus adamsi*, Chatham Island, p. 358; (4) *Certhidea salvini*, Indefatigable Island, p. 358; (5) *Certhidea bifasciata*, Barrington Island, p. 359; (6) *Certhidea mentalis*, Tower Island, p. 359; (7) *Certhidea albemarlei*, Albemarle Island, p. 360; (8) *Certhidea luteola*, Chatham Island, p. 360; (9) *Geospiza barringtoni*, Barrington Island, p. 361; (10) *Geospiza propinqua*, Tower Island, p. 361; (11) *Geospiza bauri*, James Island, p. 362; (12) *Geospiza albemarlei*,[1] Albemarle Island, p. 362; (13) *Geospiza fratercula*,[1] Abingdon Island, p. 363; (14) *Geospiza debilirostris*,[1] James Island, p. 363; (15) *Geospiza acutirostris*, Tower Island, p. 363; (16) *Camarhynchus rostratus*,[1] James Island, p. 363; (17) *Camarhynchus productus*, Albemarle Island, p. 364; (18) *Camarhynchus salvini*,[2] Chatham Island, p. 364; (19) *Camarhynchus affinis*, Albemarle Island, p. 365; (20) *Pyrocephalus carolensis*,[1] Charles Island, p. 365; (21) *Pyrocephalus intercedens*, Indefatigable Island, p. 366; (22) *Pyrocephalus abingdoni*,[1] Abingdon Island, p. 367.

There are also critical remarks (p. 361) on the "*Cactorni*" of Indefatigable, Albemarle, and Jervis islands, which collectively were doubtfully identified with *Cactornis assimilis*, Gould,[2] and *Pyrocephalus dubius*, Gould (pp. 368-370), to which the Chatham Island form is referred, and of which detailed descriptions and full synonymy are given.

TOWNSEND, C. H.: Birds from Cocos and Malpelo Islands, with notes on Petrels obtained at sea.

Bull. Mus. Comp. Zoology, XXVII, No. 3, pp. 121-126, 2 colored plates.

Three species of *Procellariidæ* from the Galapagos Archipelago are mentioned: *Oceanodroma cryptoleucura* (off Wenman Island), *Procellaria tethys* (off Chatham Island), and *Puffinus "tenebrosus*, Pelz.,"=*P. subalaris*, Townsend, this paper, p. 650 (off Chatham and Wenman islands).

The two colored plates represent *Cocornis agassizi*, Townsend, and *Nesotriccus ridgwayi*, Townsend, both new species (and new genera) from Cocos Island.

[1] From the *Albatross* collection of 1888. [2] From the *Albatross* collection of 1891.

RIDGWAY, ROBERT: Preliminary descriptions of some new birds from the Galapagos Archipelago.

Proc. U. S. Nat. Mus., XVIII, No. 1067, Apr. 23, 1896, pp. 293, 294.

These new forms are the result of further examination of specimens in Dr Baur's collection as well as National Museum specimens collected by the naturalists of the *Albatross* in 1888 and 1891. They are as follows: (1) *Geospiza pachyrhyncha*,[1] Tower Island, p. 293; (2) *Geospiza fatigata*,[2] Indefatigable Island, p 293; (3) *Camarhynchus bindloei*,[1] Bindloe Island, p. 294; (4) *Camarhynchus compressirostris*,[1] Jervis Island, p. 294; (5) *Camarhynchus incertus*,[1] James Island, p 294

[1] From Dr Baur's collection. [2] From the *Albatross* collection.

EXPLANATION OF PLATES.

PLATE LVI.

FIG. 1. Nesomimus parvulus, Gould, No. 115972, U.S.N.M.; Albemarle Island, Galapagos; *Albatross* collection.

2. Nesomimus adamsi, Ridgway. Type, in Dr. Baur's collection; Bindloe Island, Galapagos.

3. Nesomimus melanotis, Gould, No. 115986, U.S.N.M.; James Island, Galapagos; *Albatross* collection.

4. Nesomimus bauri, Ridgway. Type, in Dr. Baur's collection; Tower Island, Galapagos.

5. Nesomimus personatus, Ridgway. Type, No. 116098, U.S.N.M.; Abingdon Island, Galapagos; *Albatross* collection.

6. Nesomimus macdonaldi, Ridgway. Type, No. 116066, U.S.N.M.; Hood Island, Galapagos; *Albatross* collection.

7. Camarhynchus (Cactospiza) pallidus (Sclater and Salvin)? Type of Cactornis hypoleuca, Ridgway, No. 115997, U.S.N.M.; James Island, Galapagos; *Albatross* collection.

8. Camarhynchus (Cactospiza) productus, Ridgway. Type, in Dr. Baur's collection; Albemarle Island.

9. Camarhynchus salvini, Ridgway. Type, No. 125976, U.S.N.M.; Chatham Island, Galapagos; *Albatross* collection.

10. Camarhynchus prosthemelas, Sclater and Salvin, No. 116009, U.S.N.M.; James Island, Galapagos; *Albatross* collection.

11. Camarhynchus pauper, Ridgway, No. 125968, U.S.N.M.; Charles Island, Galapagos; *Albatross* collection.

12. Camarhynchus compressirostris, Ridgway. Type, No. 471, Dr. Baur's collection; Jervis Island, Galapagos.

13. Camarhynchus habeli, Sclater and Salvin, No. 116130, U.S.N.M.; Abingdon Island, Galapagos; *Albatross* collection.

14. Camarhynchus psittaculus, Gould, No. 564, female adult, Dr. Baur's collection; James Island, Galapagos.

15. Camarhynchus psittaculus, Gould?. Type of Camarhynchus townsendi, Ridgway, No. 115915, U.S.N.M.; young male; Charles Island, Galapagos; *Albatross* collection.

16. Camarhynchus psittaculus, Gould ?. Type of C. rostratus, Ridgway, No. 116006, U.S.N.M., male adult; James Island, Galapagos; *Albatross* collection.

17. Camarhynchus (Platyspiza) variegatus, Sclater and Salvin, No. 125972, U.S.N.M.; Chatham Island, Galapagos; *Albatross* collection.

18. Camarhynchus (Platyspiza?) crassirostris, Gould. (From Gould, Zool. Voy. *Beagle*, III, pl. XLI.)

PLATE LVII.

FIG. 1. Cocornis agassizi, Townsend. Type, No. 131680, U.S.N.M.; Cocos Island; C. H. Townsend.

2. Geospiza (Cactornis) scandens (Gould). Specimen in Dr. Baur's collection; James Island, Galapagos.

3. Geospiza (Cactornis) intermedia, Ridgway. Type, No. 115916, U.S.N.M.; Charles Island, Galapagos; *Albatross* collection.

4. Geospiza (Cactornis) barringtoni, Ridgway. Type, in Dr. Baur's collection; Barrington Island, Galapagos.

5. Geospiza (Cactornis) abingdoni, Sclater and Slavin. No. 116126, U.S.N.M.; Abingdon Island, Galapagos; *Albatross* collection.

6. Geospiza (Cactornis) brevirostris, Ridgway. Type, No. 115920, U.S.N.M.; Charles Island, Galapagos; *Albatross* collection.

7. Geospiza (Cactornis) propinqua, Ridgway. Type, in Dr. Baur's collection; Tower Island, Galapagos.

8. Geospiza conirostris, Ridgway. Type, No. 116070, U.S.N.M., Hood Island; Galapagos; *Albatross* collection.

9. Geospiza pachyrhyncha, Ridgway. Type, in Dr. Baur's collection; Tower Island, Galapagos.

10. Geospiza magnirostris, Gould. (From Salvin, Trans. Zool. Soc. Lond., IX, Pt. IX., p. 479.)

11. Geospiza dubia, Gould, No. 125912, U.S.N.M.; Chatham Island, Galapagos; *Albatross* collection.

12. Geospiza bauri, Ridgway. Type, in Dr. Baur's collection; James Island, Galapagos.

13. Geospiza media, Ridgway. Type. No. 116072, U.S.N.M.; Hood Island, Galapagos; *Albatross* collection.

14. Geospiza fortis, Gould?. Type of G. albemarlei, Ridgway, No. 115977, U.S.N.M.; Albemarle Island, Galapagos; *Albatross* collection.

15. Geospiza fortis, Gould, No. 125936, U.S.N.M., immature male; Charles Island, Galapagos; *Albatross* collection.

16. Geospiza fratercula, Ridgway. Type, No. 116110, U.S.N.M.; Abingdon Island, Galapagos; *Albatross* collection.

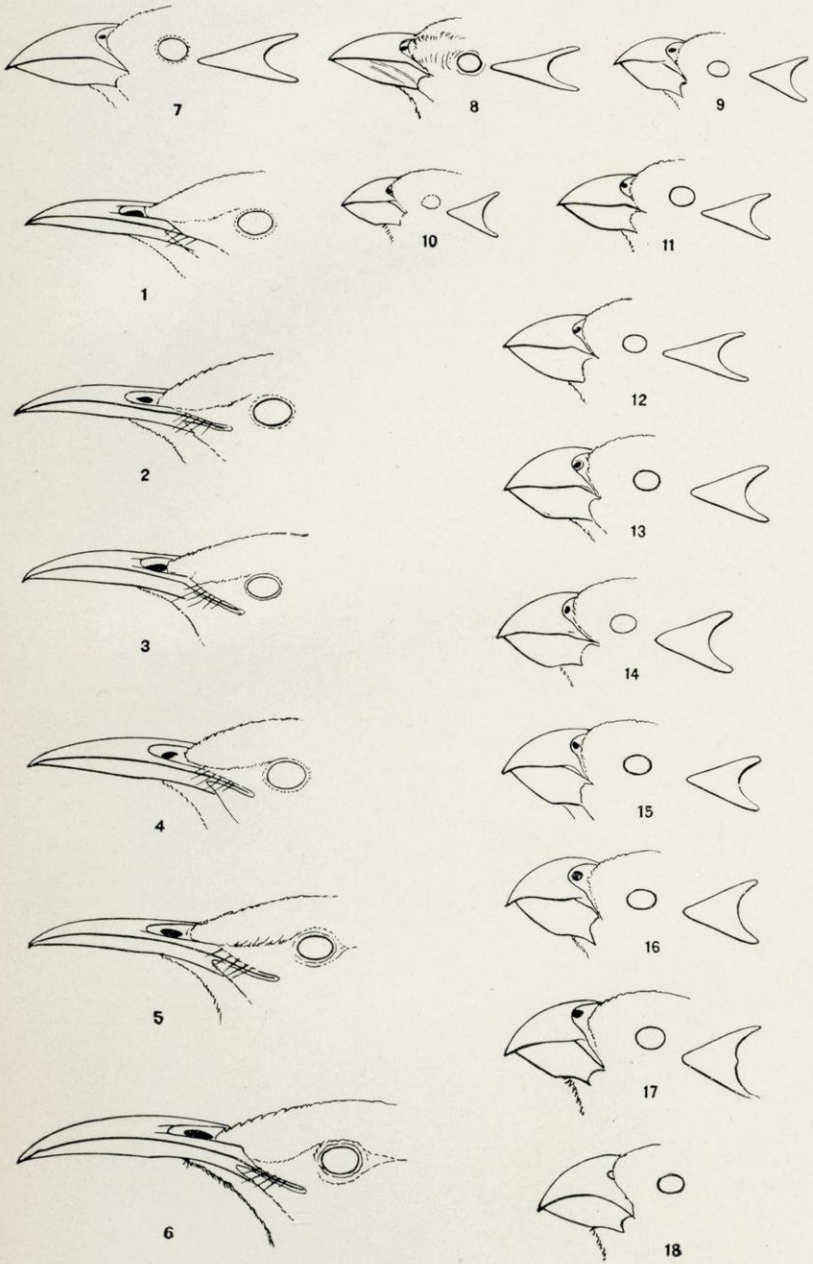
17. Geospiza fuliginosa, Gould, No. 125927, U.S.N.M.; Chatham Island, Galapagos; *Albatross* collection.

18. Geospiza parvula, Gould, No. 77755, U.S.N.M.; Abingdon Island, Galapagos; Dr. A. Habel.

19. Geospiza debilirostris, Ridgway. Type, No. 116003, U.S.N.M.; James Island, Galapagos; *Albatross* collection.

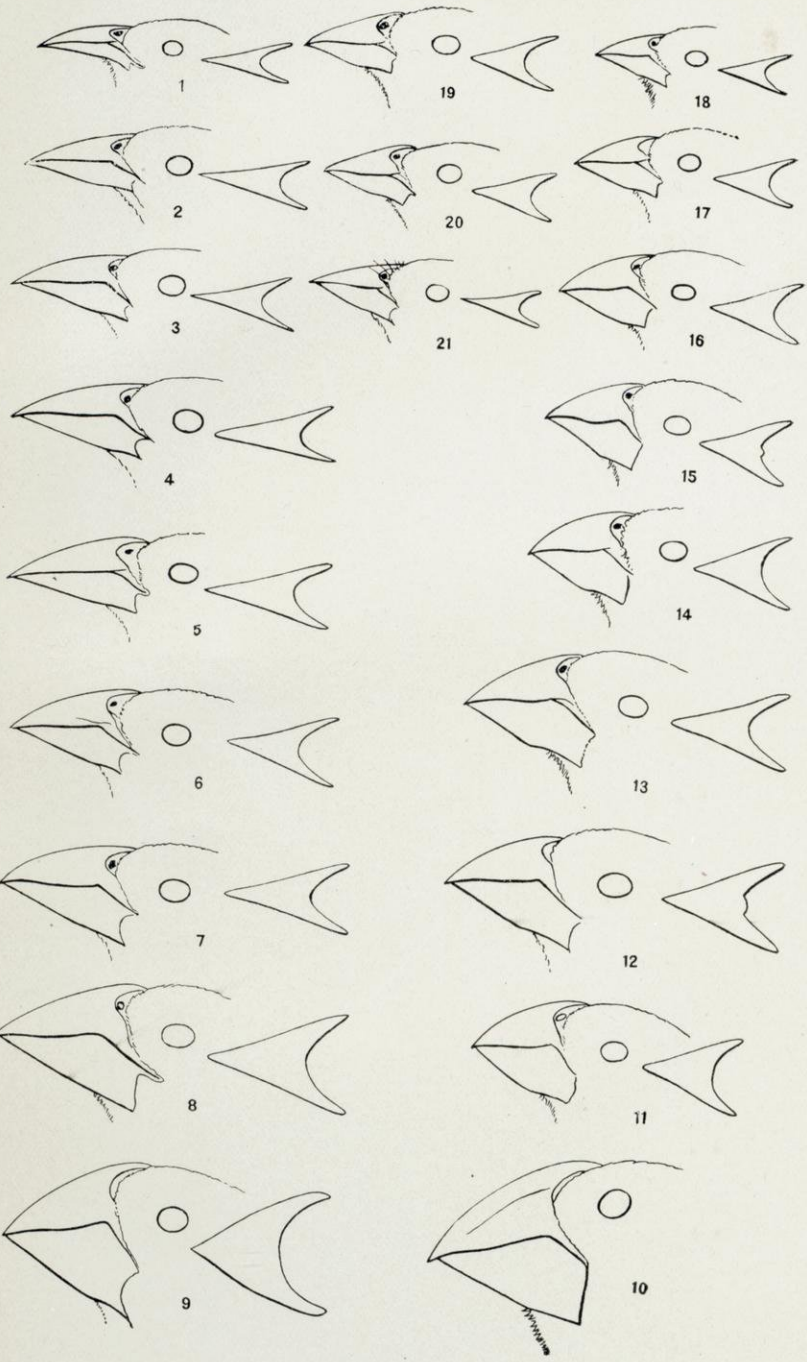
20. Geospiza difficilis, Sharpe. No. 116117, U.S.N.M.; Abingdon Island, Galapagos; *Albatross* collection.

21. Geospiza acutirostris, Ridgway. Type, in Dr. Baurs' collection; Tower Island, Galapagos.



SPECIFIC VARIATIONS IN FORM OF BILL IN NESOMIMUS AND CAMARHYNCHUS.

FOR EXPLANATION OF PLATE SEE PAGE 669.



SPECIFIC VARIATIONS IN FORM OF BILL IN GENUS GEOSPIZA.

FOR EXPLANATION OF PLATE SEE PAGE 670.