NOTES ON THE HAVEMEYER COLLECTION OF CENTRAL AMERICAN BIRDS.

BY LUDLOW GRISCOM.

FOR some years past Mr. Henry O. Havemeyer of Mahwah, New Jersey, has been acquiring collections of Costa Rican birds from Mr. Austin Paul Smith, in fact ever since the late Dr. Jonathan Dwight ceased to be Smith's chief customer. I have had an intermittent but very pleasant correspondence with Mr. Havemeyer, and from time to time he has kindly sent me specimens for examination or identification. With so competent a collector as Smith, it has naturally followed that the Havemeyer collection has become increasingly valuable, that it contains a thoroughly representative series of the avifauna of Costa Rica, and now has a remarkably high percentage of the specialties and the great rarities of the country. Some few of these have already been recorded by Smith (Condor, 1931, p. 249).

In 1927 Smith departed from Costa Rica and went on a trip to Panama. He first made an important and very interesting collection around Port Antonio on the Rio Chepo, Pacific slope of eastern Panama. He then proceeded to the Almirante region on the Caribbean slope of western Panama, where by a remarkable coincidence Wedel was collecting for the Museum of Comparative Zöology and Rex R. Benson was collecting for me in the interests of the American Museum of Natural History. Small wonder that the avifauna of a previously unexplored area of Panama is now quite well known!

Mr. Havemeyer is a busy man of affairs and has little time or leisure for the pursuit of ornithology, so that his collections were never properly determined or worked up and put on record. Last fall (1931) I asked permission to go to Mahwah, examine his collections, and put on record what interesting items it might prove to contain. This suggestion could not have been more cordially received, and no one could possibly have coöperated in more friendly and generous spirit than Mr. Havemeyer. We accordingly spent a very busy but happy day in his museum at

Mahwah early in December 1931. Every single specimen was examined, and all those requiring critical determination were put to one side, and the Panama collections were listed separately. Even working full steam ahead all day, it was not possible to see the entire lot, but the balance were sent to Cambridge during the winter and spring, and all of the specimens requiring critical study were sent immediately.

There is, of course, no point in reporting on the collection as a whole. The notes that follow are divided into three sections. The Costa Rican section is restricted to records of interest based on Carriker's 'Birds of Costa Rica.' The Almirante section is purely supplementary to Peters' recent list (Bull. Mus. Comp. Zool., vol. 71, no. 5, 1931). The collection from Rio Chepo, Darien, is accorded the more extended notice it deserves.

COSTA RICA.

1. **Dendrocygna viduata** (LINNAEUS). Six specimens collected in the marshes near Bebedero, July, 1929. This outlying colony of the species is of considerable interest, as the bird is unknown between northwestern Costa Rica and the Canal Zone. The series does not differ in the slightest degree from South American examples.

2. **Ictinia plumbea** (GMELIN). ♀ June 25, 1927, Suretka Farm, Talamanca. New to Costa Rica, but its occurrence to be expected, as it is common in eastern Central America north of Costa Rica.

3. **Rostrhamus sociabilis plumbeus** RIDGWAY. 1 ad., 1 imm., Bebedero, July, 1929. The Everglade Kite is an excessively local bird in Central America. This second record for the country proves the existence of a small colony in the extensive lagoons and marshes of Guanacaste.

4. **Odontophorus veraguensis** GOULD. For many years my suspicions of this supposed species have been steadily increasing, and I have examined most of the recorded specimens in this country. *O. veraguensis* has no definite range in that all the known specimens are from parts of Costa Rica and Chiriqui, where *guttatus* also occurs. A series in the Havemeyer Collection is particularly instructive, coming from El Copey de Dota. One is typical *guttatus*, 1 is *veraguensis*, and 2 specimens are variously intermediate. I have little doubt that *veraguensis* is a mere local erythrism of *guttatus*. *O. leucolaemus* Salvin is a good example of a distinct species, occurring with *guttatus* in parts of Costa Rica and west Chiriqui.

5. **Odontophorus smithians** OBERHOLSER. Thanks again to Mr. Havemeyer's kindness, the type of this "new species" is before me. It is exactly what I had supposed from reading the original description, a melanism of *O. leucolaemus*, which was first described by Grant in 1893, and a few years later by Salvin and Godman. The specimens of *smithians*

come from the very center of the range of *O. leucolaemus*. This species has long been known to vary remarkably in the amount of white on the throat, the width of the white bars on the black breast, and the degree to which the black areas were continued backward on the pileum and abdomen. One or two birds in the British Museum which were partially melanistic gave Grant the erroneous idea that the "oldest" birds had still more black. Salvin and Godman, however, hesitated to make this assumption, and record several specimens with no white on the throat and no white bars or spots on the breast. In other words the color characters of *smithianus* were described thirty or more years ago and were shown to intergrade completely with the "normal" coloration of *leucolaemus* without regard to locality.

5a. **Haematopus palliatus frazari** BREWSTER. 1 ♂ in fresh plumage, Sept. 29, 1926, Puerto Jimenez. The Oyster-catcher is a rare and little known bird on the Pacific coast of Central America, and recent American commentators on the group, notably Ridgway and Murphy, were unable to examine specimens, and were forced to guess at the subspecies. Murphy, however, showed that Pearl Island specimens were true *palliatus*, a course which I heartily endorse. The Costa Rican specimen before me cannot by any possible chance be referred to *palliatus*. It is darker above, is marked heavily with gray on the under wing-coverts, and has minute spots of white at the base of some of the primaries. The black breast line is barely broken with spots. It will thus be seen that this specimen is intermediate between *frazari* Brewster and *pitanay* Murphy. It agrees, however, exactly with non-typical specimens of *frazari* from various islands off Lower California, and is consequently best referred provisionally to *frazari*. A specimen from Mazatlan, Mexico belongs here also.

6. **Pagolla wilsonia beldingi** RIDGWAY. 2 specimens, Sept. 30 and Oct. 10, 1926, Puerto Jimenez. Previously unrecorded from Costa Rica, but its occurrence was to be expected.

7. **Tringa solitaria cinnamomea** (BREWSTER). Bebedero, March 7, 1926. Unrecorded previously from Central America.

8. **Calidris canutus rufus** (WILSON). ♂, Puerto Jimenez, Oct. 5, 1926. Previously unrecorded from Central America.

9. **Limnodromus griseus griseus** (GMELIN). 3 specimens, Puerto Jimenez, Oct. 10, 1926. The only two records for Costa Rica have never been determined subspecifically. As a matter of fact the western race greatly predominates in Central America.

10. **Crocethia alba** (PALLAS). 1 spec., Puerto Jimenez, Oct. 10, 1926. The Sanderling is unrecorded in Central America south of Guatemala.

11. **Oedicnemus bistriatus bistriatus** (WAGLER). Pair, Tiladelphia, Guanacaste, Oct. 1930. Considered a straggler by Carriker; now known to be resident in the dry savannahs of northwestern Costa Rica.

12. **Gelochelidon nilotica aranea** (WILSON). ♂, Puerto Jimenez, Sept. 29, 1926. There is only one record of the Gull-billed Tern for Central America, at Chiapam, Guatemala.

13. **Chlidonias nigra surinamensis** (GMELIN). ♂ Sept. 29, 1926, Puerto Jimenez. Only one previous record for Costa Rica. The Black Tern is, however, a regular transient on both coasts of Central America.

14. **Scardafella inca dialeucos** BANGS. ♀, La Cruz, Guanacaste, Aug. 18, 1928. Apparently new to Costa Rica.

15. **Claravis mondetoura umbrina** GRISCOM. 1 ♂, San Joaquin de Dota (5000 ft.), Feb. 21, 1931. So rare and little known, that another specimen should be put on record.

16. **Rhinoptynx clamator clamator** (VIEILLOT). ♂, Oja Ancha, Nicoya, Nov. 10, 1929. The third specimen from Costa Rica.

17. **Chloroceryle inda** (LINNAEUS). 1 ♂, Daytonia Farm, Talamanca, June 14, 1927. It is a curious coincidence that there is no previous record for Costa Rica. The species has long been known from Nicaragua.

18. **Crotophaga ani** LINNAEUS. ♂, Cote, Rio Coto, southwestern Costa Rica, Dec. 30, 1931. New to Costa Rica, and unknown on the mainland of Central America north of Panama.

18a. **Notharchus tectus subtectus** (SCLATER). 1 ♂, Santa Rosa Farm, Port Limon, Jan. 22, 1926. A notable range extension. Not previously recorded north of Veraguas, Panama.

19. **Dysithamnus puncticeps puncticeps** SALVIN. 1 ♂, Suretka Farm, Talamanca, June 28, 1927. A second definite record, showing that this form reaches extreme southeastern Costa Rica.

20. **Formicarius rufipectus rufipectus** SALVIN. Four specimens, April–Aug., 192?, Navarro and Guayabo. Only three specimens of this excessively rare Ant-pitta are recorded for Central America.

21. **Grallaricula flavirostris costaricensis** LAWRENCE. 4 spec., San Joaquim de Dota (4000 ft.), Feb., 1931. Only five specimens are recorded from Costa Rica. Mr. Smith is the only man who ever secured these two Ant-pittas in series.

22. **Xenops rutilus septentrionalis** ZIMMER. 1 ♂, Guayabo, April 21, 1926. The third known specimen from Costa Rica.

23. **Todirostrum nigriceps** SCLATER. 1 ♂, Daytona Farm, Talamanca, June 12, 1927.

24. **Empidonax albigularis australis** MILLER and GRISCOM. 1 ♀, Cartago, May 19, 1926.

25. **Tachyphonus rufus** (BODDAERT). 1 ♂, 2 ♀, Suretka Farm, Talamanca, June 27–July 7, 1927. The first definite locality record for Costa Rica.

26. **Petrochelidon albifrons albifrons** (RAFINESQUE). 1 ♂, 1 ♀, Puerto Jimenez, Oct. 16, 1926. The first record of the eastern Cliff Swallow for Costa Rica.

ALMIRANTE REGION.

Mr. Smith collected in this region from late April to August, 1927. Several hundred specimens are referable to 140 species.

For the sake of completeness all species are listed below which are additions to the list recently published by Peters (Bull. Mus. Comp. Zool., vol. 71, no. 5, 1931).

1. **Charadrius semipalmatus** BONAPARTE. Almirante, ♂, ♀, April 18, 1927.

2. **Saucerottia niveoventer** (GOULD). 3 ♂, Bocas del Toro, May, 1927. This hummingbird has never been definitely reported from the Caribbean slope of Central America. The specimens do not differ from a series of nearly one hundred from the Pacific slope of Costa Rica and Chiriqui.

2a. **Chalybura urochrysa isaurae** (GOULD). As is now well known, this rare Hummingbird is apparently confined to the Caribbean lowlands of western Panama, where it has recently been rediscovered by Benson and Wedel. We naturally speculate on its relationship to *C. melanorrhoa* Salvin, a fairly common bird in eastern Costa Rica, but it is *not* so well known that there is an old record for "Veragua" for this latter species first published, I believe, in 1874 by Mulsant and Verreaux and repeated by Boucard, but ignored by nearly all English and American ornithologists. While I am quite unable to dispose definitely of this old record, a possible explanation is supplied by specimens in the Havemeyer collection. Two at least are typical *isaurae*, but two from Zegla, Terebe River, coll. May 21, 1927 are obvious intergrades between *isaurae* and *melanorrhoa*, as the underparts are green without any tinge of blue, and the under-tail coverts are largely dusky or blackish with white tips and shaft streaks of white. It will be apparent, therefore, that *melanorrhoa* must become a subspecies of *urochrysa* also, and on the evidence available should *not* be included in the list of Panama birds.

3. **Trogon strigilatus chionurus** SCLATER and SALVIN. 1 ♂, Chiriquicito Grande, May 2, 1927. Range extension from the Canal Zone.

4. **Myrmotherula surinamensis pacifica** Hellmayr. 1 ♀, Chiriquicito, May 6, 1927. Known from the Canal Zone eastward. There is an old record for Veraguas.

5. **Sclerurus mexicanus pullus** BANGS. ♂, Almirante, April 19, 1927.

6. **Myiochanes brachytarsus brachytarsus** (SCLATER). 1 ♀, Almirante.

7. **Myiobius sulphureipygius aureatus** BANGS. 1 ♀, Almirante.

8. **Perissotriccus atricapillus** (LAWRENCE). 1 ♂, Almirante, May 16, 1927. The third known specimen of this very rare species from Panama.

9. **Mionectes olivaceus olivaceus** LAWRENCE. 1 ♂.

10. **Dumetella carolinensis** (LINNAEUS). A male taken on the surprisingly late date of April 23, 1927.

RIO CHEPO, DARIEN.

Mr. Smith collected in the vicinity of Port San Antonio, Rio Chepo, from late February to early April, 1927. The importance

of this station is twofold. First, it bridges the gap between the well known avifauna of the Canal Zone and the savannahs near Panama City and the quite different rain forest bird-life of extreme eastern Darien, which is really a part of the Colombian-Pacific Fauna. So far as I know, almost no work has been done at sea-level between the savannahs near Panama City and the Rio Tuyra delta. I stopped at the mouth of the Rio Chiman for two days in 1927, and found the coast forested at this point, obtaining range extensions westward of some of the characteristic species of eastern Darien. It is not generally remembered, however, that Arcé made a brief stop at Chepo before embarking on his highly successful work in Veraguas, but the handful of birds collected were common forest types in the Canal Zone.

We still have, therefore, a faunal problem of some interest awaiting final solution in just this belt between the Canal Zone and eastern Darien. East of the Canal Zone the "rain shadow," restricted to the Caribbean slope of Central America, crosses the continent in a diagonal course. As we proceed eastwards in Darien the rain forest belt extends further and further beyond the mountains until it finally reaches the Pacific coast. At the same time the rainfall steadily increases, and the rain forest on the Pacific slope of extreme eastern Darien is as heavy or even denser than on the Caribbean side of the Canal Zone. At present we do not know the western limits or the limiting factors of the Colombian-Pacific element. Turning now to the arid Tropical Zone, this is a belt of scrub forest or open savannahs which stretches along the Pacific slope from Chiriqui to Panama City. Its characteristic bird-life is excellently covered in a paper by Thayer and Bangs (Bull. Mus. Comp. Zöol., vol. 46, no. 12, 1906, pp. 213–224. The present collection shows that this savannah fauna extends eastward to the Chepo River, and many interesting range extensions were secured. Goldman (Mammals of Panama, p. 5) was at Chepo en route for the Cerro Azul in the interior, and has given us an excellent description of the country, the chief feature of which is the abruptness with which open savannahs give way inland to heavy forest. This explains the presence of both faunal elements in Smith's collection. It still remains to be determined just how far east these savannahs extend. In the lower part of the Tuyra Basin

and the coast near Cape Garachiné, the arid Tropical Zone[1] is an open gallery forest, containing a totally different assemblage of birds from the savannah types of Veraguas and Panama City.

1. **Pilherodius pileatus** (BODDAERT). 1 ♂, Feb. 23. The third record for Panama.

2. **Nycticorax nycticorax hoactli** (GMELIN). ♂, March 11. An exceedingly local bird in Central America, of uncertain status. In Panama it is recorded only from the Canal Zone.

3. **Milvago chimachima cordatus** BANGS and PENARD. Previously recorded from the Pearl Islands and the savannahs near Panama City.

4. **Micrastur mirandollei** (SCHLEGEL). ♂, March 19. A very rare species hitherto unrecorded from the Pacific slope.

5. **Buteogallus subtilis** (THAYER and BANGS). 3 specs., 1 immature. A little known bird. Additional specimens are well worth putting on record.

6. **Monasa morphoeus fidelis** NELSON. 2 specs., March 6. For many years *Monasa similis* Nelson and *M. fidelis* Nelson have been known only from the types, collected by Goldman on the Cerro Azul back of Chepo. The two specimens here recorded prove what I had always suspected from the original description, namely that *fidelis* was an intermediate, connecting *pallescens* Cassin with *grandior* Sclater and Salvin of Caribbean Central America. The comparative characters are as follows.

a. *grandior*. Chin extensively white, malar apex black; foreneck and throat black, passing gradually into grey of breast; wing coverts concolor with back.

b. *fidelis*. Chin with a few white feathers (2 specs.) or black (1 spec.) and malar apex white; throat and breast more extensively black, more sharply demarcated; wing coverts paler than back, intermediate between *grandior* and *pallescens*.

c. *pallescens*. Chin and malar apex always black; throat and breast variable, in large series sometimes as in *grandior*, sometimes as in *similis;* wing coverts much paler than back.

From this key it will be seen that I differ very radically from Mr. Ridgway, who divided the so-called species of this genus into two groups, depending upon whether the malar apex is black or white. Speciation has been greatly overdone in the Nun-birds. It follows that I consider *fidelis* and *similis* to be variations of one subspecies, rather than two distinct species, and *fidelis* having page priority stands. Chapman and others have shown that *sclateri* Ridgway is a race of *pallescens* Cassin, and that *peruana* Sclater is a race of *morphœus*. It follows that I regard all these birds as races of *morphoeus*, without in any way adopting an extreme "formenkreis" point of view. All of the characters separating these birds are either inconstant variables separating the various races, or are inconstant in individuals of one race or another. Excellent examples of distinct species

[1] As defined by Goldman.

in this genus are afforded by *M. nigrifrons*, *M. nigra* (Muller) and *M. flavirostris* Strickland.

To complete these notes on *Monasa*, I might add that excellent modern series of *pallescens* show that the size and color characters of *minor* Nelson from southeastern Panama are matters purely of individual variation, a further example of the degree to which this variability has been used in the past to erect imaginary species.

7. **Myrmeciza exsul occidentalis** CHERRIE. 2 ♂. This race is especially characteristic of the Pacific slope of southwest Costa Rica and western Panama. Its range is here considerably extended eastward.

8. **Synallaxis albescens hypoleucus** RIDGWAY. 1 ♂, 2 ♀. This subspecies is still rare in collections, and would appear to be very local. This is the fourth definite Panama locality; Hellmayr, however, in his monograph of the family, reports "Chiriqui" specimens, and refers other from Cali, Colombia, to this race provisionally.

9. **Deconychura longicauda darienensis** GRISCOM. 3 ♀. These three specimens serve to confirm the validity of the present race, based on the type only from Cana, extreme eastern Darien. It is to be regretted that Mr. Zimmer did not have these four specimens when writing his excellent review of the genus (Field Mus. Nat. Hist., Publ. 257, Zool. Series, vol. 17, no. 1, 1929), and needless to state I accept his major conclusions. Granting, however, his remarks about individual variation in this species, there is no doubt but what the Darien birds average smaller and darker colored throughout than a series of *typica* Cherrie from southwest Costa Rica. Mr. Zimmer is, however, entirely correct in his guess (p. 18) that further Darien specimens might show a lessening of the ascribed differences, provided, I might add, that they came from a less humid area than Cana. The three Chepo specimens do come from a less humid area, and consequently are about 75% typical. In other words this Woodhewer shows exactly the same variation I have already recorded for a long list of rain forest birds in Panama. In the more open forests of western Chiriqui and southwest Costa Rica (Pacific slope) we often have a paler (and sometimes larger) subspecies. A darker and more richly colored bird inhabits the more humid forests of the Canal Zone and in many cases specimens from Cana are minutely darker again with or without racial separation. Exactly parallel cases are the variations of *Odontophorus marmoratus*, *Myrmeciza exsul* and *Henicorhina prostheleuca* in Panama.

10. **Pipra erythrocephala erythrocephala** (LINNÆUS). 1 ♂. This capture confirms the old Rio Chepo record by Arcé, and shows how far west this South American species ranges. Smith also collected *P. mentalis ignifera*, so that these two closely related species must occur together over a considerable area of rain forest in Darien.

11. **Pachyramphus albogriseus** subsp. 1 ♂ imm., March 17. It seems to have been generally overlooked that Festa secured a specimen of this species at Punta de Sabana in the Tuyra delta, the only other record for eastern Panama. This specimen (still I suppose in the Turin Museum)

was regarded by Salvadori as typical *albogriseus*. Needless to say a series, including females, is required for a definite subspecific determination.

12. **Platypsaris homochrous homochrous** (SCLATER). 2 ♂, 1 ♀. The northern limit of this species is the Canal Zone, whence McCleanan sent specimens to Lawrence seventy years ago. I recall no further record from Panama territory.

13. **Sirystes sibilator albogriseus** (LAWRENCE). 1 ♂, 1 ♀, March 19 and 24. There are now apparently 6 known specimens of this very rare species.

14. **Coryphotriccus albovittatus** (LAWRENCE). 1 ♂, March 20. Another excessively rare bird, now known from five specimens. This is the second record for Panama, and over seventy years has elapsed since the types were collected by McCleannan.

15. **Aphanotriccus audax** (NELSON). 1 ♂, 1 ♀, March 16 and 23. The third time this species has been collected, and the first time away from the type locality (Cana, eastern Darien). There were originally three specimens, identified at the American Museum of Natural History, and Mr. Havemeyer presented them with one, which I have not seen.

16. **Myiophobus fasciatus furfurosus** (THAYER and BANGS). 2 ♂. Now known to occur generally from southwestern Costa Rica to the Rio Chepo, Darien in open scrub; also on the Pearl Islands, where Crosby and I found it in 1927.

17. **Phylloscartes ventralis flavovirens** (LAWRENCE). 1 ♂, March 15. The second known specimen, originally determined at the American Museum of Natural History, where it was compared with the type.

18. **Tyrannulus elatus panamensis** THAYER and BANGS. 2 ♀. Another species of dry open scrub, which has not been encountered very often in Panama.

It may be noted in passing that Mr. Smith secured every single one of the very rare Tropical Zone *Tyrannidae* of Panama at one locality in the course of one brief collecting trip, a feat which has never been duplicated in Central America.

19. **Thryophilus rufalbus castanonotus** RIDGWAY. 2 ♂, 2 ♀.

20. **Thryophilus modestus elutus** BANGS. Series of 6.

21. **Pheugopedius rutilus hyperythrus** (SALVIN and GODMAN). Small series.

In all three cases, species of the Arid Tropical Zone, reaching their eastern limits on the Rio Chepo.

22. **Hylocichla ustulata swainsoni** (TSCHUDI). 1 ♂, March 17. An early date for this transient.

23. **Smaragdolanius pulchellus viridiceps** (RIDGWAY). 1 ♂, March 13. One of the few records for this little known subspecies.

24. **Hylophilus ochraceiceps nelsoni** (TODD). 1 ♂, March 14. A little known bird, now known to occur in the coastal forests of the Pacific slope of Panama from Veraguas (Griscom) to the Rio Chepo, Darien.

25. **Hylophilus viridiflavus** LAWRENCE. 1 ♂, 2 ♀. A characteristic species of low scrub in the Arid Tropical Zone, now known to be quite common from Veraguas to the Rio Chepo, Darien. It is much less common in western Chiriqui and adjacent Costa Rica.

26. **Helmitheros vermivorus** (GMELIN). 1 ♂, March 16. The southernmost record for this winter visitant.

27. **Vermivora pinus** (LINNAEUS). 1 ♂, March 7. New to Panama.

28. **Tangavius aeneus involucratus** LESSON. 1 ♀, March 17. The Red-eyed Cowbird is wearisomely abundant through most of Central America, but decreases near the southern limits of its range. I found it a very uncommon bird in Veraguas, and there are no definite records further south and east.

NOTES ON *Ramphocelus dimidiatus* LAFRESNAYE

One of the commonest and most brilliantly colored birds of the lowlands of Panama is this beautiful Silver-beak Tanager. It is surprisingly variable in narrow limits, and the various subspecies proposed are poorly or well thought of depending upon the excellence of the material available. Matters have been at a standstill for some years due to the grotesque and incomprehensible ranges assigned to various races by their proposers. As at present understood, typical *dimidiatus* is a Colombian species ranging into eastern Panama, and north along the Caribbean coast to Chiriqui (Ridgway, Birds N. & Mid. Amer., vol. 2, 1902). Ridgway, however, described *isthmicus* from the Caribbean slope of the Canal Zone, thus cutting the alleged Panama range of *dimidiatus* in two. Furthermore he did nothing with the abundant records from the Pacific slope of western Panama, leaving these birds nameless! His treatment included *limatus* Bangs from the Pearl Islands, based on abundant material, but his ascription of *dimidiatus* to the Caribbean coast of Chiriqui was not based on specimens. In the meantime Bangs acquired a series from western Chiriqui and a matchless series from the Canal Zone and the vicinity of Panama City. He regarded the former as true *dimidiatus* and the latter as *isthmicus*, a valid race. A year or so later the American Museum obtained 4 specimens collected by J. H. Batty on Coiba Island. This institution possessed no satisfactory material for comparison at that time, but the late W. deW. Miller catalogued these birds as *limatus ?*, and years later pointed out to me their peculiarities. Between 1924 and 1927 I collected this Tanager in Chiriqui, Veraguas, Darien and the Pearl Islands, these specimens now in the American Museum of Natural History. For some years, therefore, I have been awaiting adequate material and the opportunity to review the races of this Tanager. The Museum of Comparative Zoology now possesses excellent series as well as three out of four types, and my conclusions are submitted below. I am much obliged to the Amer. Museum of Natural History for the loan of critical specimens.

1. **Ramphocelus dimidiatus dimidiatus** LAFRESNAYE, 1837, Cartagena, Colombia; types in Mus. Comp. Zool. examined. Typical *dimidi-*

atus is a relatively small bird, with a tendency in males to the bright crimson areas being slightly darker in shade. The bill of adult males has the maxilla blackish and the mandible light bluish gray in dried skins. The black abdominal patch is very variable in large series. Ordinarily it is a more or less broad stripe down the center of the belly, and expanded forward into a distinct patch across the center of the abdomen. In about one-third of the series, however, this patch is greatly reduced or wanting. Adult females are appreciably darker and brighter colored, especially above, the head and throat also blacker. I am quite unable to see any constant differences in series from various parts of Colombia, and specimens from both sides of extreme eastern Panama are obviously true *dimidiatus*. Westward its exact limits remain to be determined, but they will probably coincide with the areas of heavy rain forest. In spite of the range assigned by Ridgway cited above, the species is unknown on the Caribbean coast of Panama west of the Canal Zone, nor are there any old records.

2. **Ramphocelus dimidiatus isthmicus** RIDGWAY, 1901, Frijole Station, Canal Zone. The fine series now available does not endorse the color differences assigned to adult males. It is true that extreme specimens are minutely less pure red, the rump tending to be more scarlet, less crimson. These differences, however, apply to about one-third of the material only. The browner rather than blacker abdominal patch is true of *only four* birds out of 25. Adult females are, however, lighter and duller colored throughout, the head and throat being browner, less blackish. The tail is notably longer in both sexes. This race is by no means confined to the Canal Zone, but ranges east at least as far as the Rio Chepo, and west to Veraguas, where it occurs locally in the open savannah country, and more numerously in the heavy forest at the base of the mountains. These latter are not typical, however, and approach the next subspecies.

3. **Ramphocelus dimidiatus albirostris** subsp. nov.

Type, No. 108,397, Mus. Comp. Zool.; ♂ ad.; Divalá, Pacific slope of western Chiriqui; Nov. 13, 1900; W. W. Brown.

The measurements of this new race average about the same as in *isthmicus*, with a broader and heavier bill, and instantly separable in the strikingly paler and lighter bill. In the adult male, the mandible is bluish gray for the basal half, and the maxilla is ivory white except for the abruptly black tip. There is only one specimen which is not obviously different. In the female both maxilla and mandible are usually extensively bluish gray basally, instead of wholly blackish as in *dimidiatus* and *isthmicus*. It should be noted that the series of all three races used in comparison were collected by the same man, W. W. Brown, within 3 years, 1898–1900. In other color characters the new form is intermediate between *dimidiatus* and *isthmicus*, but rather nearer the former. It is restricted to the coastal forests of the Pacific slope of western Panama, intergrading in Veraguas with *isthmicus*.

4. **Ramphocelus dimidiatus limatus** BANGS, 1901, San Miguel Island, Bay of Panama [= San Miguel on El Rey, the largest of the Pearl Islands]; type in Mus. Comp. Zool. examined. In size resembling *dimidiatus* rather than *isthmicus;* adult male paler, more scarlet, less crimson than *dimidiatus*, the abdominal patch greatly restricted or more rarely obsolete; female minutely paler and duller than *isthmicus*. The modifications from the original description in the characterization above are due to the fact that the bulk of the series now before me was not collected until 1904, when further specimens of *isthmicus* were also received. Four males from Coiba Island are quite inseparable from *limatus*, but females should be carefully compared before a final determination.

MEASUREMENTS OF ADULT MALES.

	Wing	Tail
dimidiatus	74.5–80 (77.25)	65–71 (68.0)
isthmicus	76–81 (79.15)	70–76.5 (73.5)
albirostris	78–80.5 (79.0)	69.5–74 (71.6)

MATERIAL EXAMINED.

Colombia:
Bogotá.—2 ♂, 2 ♀; Cartagena, the types.
Santa Marta.—34 ♂, 21 ♀.
Pacific slope.—4 ♂, 2 ♀.
Panama:
Darien, Permé (Caribbean slope), 3 ♂, 12 ♀.
Darien, Cana and Mt. Sapo (Pac. slope), 4 ♂, 4 ♀.
Darien, Rio Chepo (Havemeyer Coll.; *isthmicus*).
Canal Zone (Lion Hill, Caribbean slope) and Panama City, 25 ♂, 12 ♀ (*isthmicus*).
Pearl Islands, 32 ♂, 9 ♀ (*limatus*).
Veraguas (in A. M. N. H.):
Wilcox Camp, 2 ♂, 2 ♀ (*isthmicus* approaching *albirostris*).
Coiba Isl: 4 ♂ (apparently *limatus;* in A. M. N. H.).
Chiriqui (Pacific slope) (Divalá and David), 9 ♂, 9 ♀; Boqueron, 1 ♂, 2 ?; Remedios, 2 ♀ (in A. M. N. H.).

Museum Comp. Zoöl.,
Cambridge, Mass.