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THE YELLOW-CROWNED NIGHT HERON OF
SOCORRO ISLAND, MEXICO

By A. J. VAN ROSSEM

Specimens of the Yellow-crowned Night Heron which is a resident on Socorro Island off western Mexico are rare in collections, presumably because identity with the mainland race has been assumed and no effort made to collect them, other than casually, by the several parties who have landed there.

Grayson, the first ornithologist to visit Socorro (June, 1865, and May, 1867), seems to have shot two individuals, "a male" and a "young one," but whether these were prepared as specimens he does not state. If so, they are probably in the National Museum collections together with a specimen taken by Townsend in March, 1889. Anthony shot "fully fledged young" in May, 1897, but does not state their disposition. The next specimen was taken by Beck in July, 1905, and subsequently recorded by Gifford. This specimen is now in the collection of the California Academy of Sciences, as are four others collected by the Academy expedition of 1925. Dickey took a single bird in June, 1929, and I personally saw three individuals in January, 1932. These last were not collected because of preoccupation with small land birds.

Recently I had occasion to examine critically the sub-adult in the Dickey Collection and found it to be so at variance with west-coast mainland specimens that five other Socorro Island birds were borrowed, through the courtesy of Dr. Robert T. Orr, from the California Academy of Sciences.

These specimens show that a distinct race inhabits Socorro Island, which I propose to call

NYCTANASSA VIOLACEA GRAVIROSTRIS new subspecies

SOCORRO ISLAND NIGHT HERON

Type.—Fully plumaged adult of unknown sex, No. 28105, California Academy of Sciences; Socorro Island, Revillagigedo Group, western Mexico, May 11, 1925; collected by Frank Tose.

Subspecific characters.—A rather small race of *Nyctanassa violacea*, characterized by a very heavy bill, gross throughout its length, and short, thick tarsi. Coloration very similar to that of *Nyctanassa violacea violacea* (Linnaeus) of the southeastern United States and the Caribbean area, but central crown prominently variegated with dark brown even in the full adult plumage. Compared in color with *Nyctanassa violacea bancrofti* Huey of Lower California and western Mexico, coloration darker and with crown overlaid with brown.

Measurements.—

	Wing	Tail	Exposed Culmen	Depth*	Tarsus	Middle toe and claw
<i>gravirostris</i>						
2032 C. A. S. ad. ♂	278	111	65.0	20.0	84.2	63.2
28105 " ad. ♂	279	107	67.0	21.4	83.6	61.0
28108 " ad. ♂	275	106	68.0	21.2	81.8	62.0
28837 D. R. D. im. ♀	272	110	69.0	20.7	82.0	61.0
28106 C. A. S. juv. ♀	252	102	66.0	20.0	78.6	59.5
28107 " juv.	253	98	64.0	20.6	77.8	57.0
<i>bancrofti</i>						
(Aver. 7 ad. ♂♂)	297	119	76.9	20.1	100.6	62.8

*Depth of bill at middle of exposed culmen.

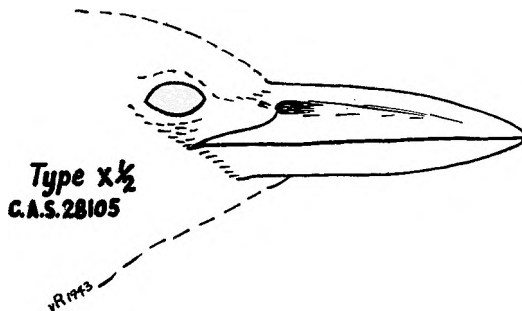


Fig. I. Bill of *Nyctanassa violacea gravirostris*. For comparison with bills of *N. v. violacea* and *N. v. bancrofti* see Condor, 29:1927:167.

Distribution.—Known only from Socorro Island, Revillagigedo Islands western Mexico.

Remarks.—The pale, ashy extreme of coloration is reached in Lower California and northwestern Mexico. Now that more material is available this character is seen to be additional to the generally large size, particularly of bill, upon which the race *bancrofti* was based. El Salvador resident birds are equally large but are darker, and but little, if any, paler than *violacea*. A color character common to the Socorro Island race of *violacea* and *Nyctanassa pauper* of the Galapagos Islands is seen in the overwash or variegation of brown on the crowns of adults, though this is more prominent in *pauper*; however, on the basis of seven specimens in the Los Angeles Museum, the latter form appears to me to be a distinct species rather than a race of *violacea*.

The adaptation of the Socorro Island Night Heron to local conditions has caught the imagination of almost every observer. In the absence of lagoons and marshes it has become essentially a land bird and inhabits the dense, almost impenetrable scrub which covers most of the island. The food seems to be almost exclusively the land crabs (*Aegearcinus planatus*) which swarm in almost unbelievable numbers everywhere. The following notes of the late Donald Dickey afford an interesting sidelight in this connection. "June 15, 1929. . . . found several cases of freshly killed land crabs and associated with each were the tracks of a heron-like bird. A mile or so from the beach we came on and collected one of the latter (*Nyctanassa violacea*). They evidently feed extensively on land crabs as noted by Hanna. The Thrashers [*Mimodes graysoni*] enjoy gleaning the shreds of crab the herons leave, for we found a Thrasher by almost every fresh shell gleaning it carefully. These herons work about like chickens in the densest foothill brush . . ." The three individuals seen by myself were perched on lava outcrops which jutted slightly above the scrub to about 1,000 feet altitude but (at that time) they did not interest me sufficiently to induce me to leave the relatively easy sheep trail I was following.

The following are references to original observations on this heron:

1871. Grayson, A. J. [and Lawrence, G. N.].
On the Physical Geography and Natural History of the Islands of the Tres Marias and of Socorro, off the Western Coast of Mexico. *Proc. Boston Soc. Nat. Hist.*, 14: 301.

1890. Townsend, C. H.
Birds from the Coasts of Western North America and Adjacent Islands, Collected in 1888-'89, with Descriptions of New Species. *Proc. U. S. Nat. Mus.*, 13: 135.
1898. Anthony, A. W.
Avifauna of the Revillagigedo Islands. *Auk*, 15: 316.
1913. Gifford, E. W.
The Birds of the Galapagos Islands [etc.]. *Proc. Calif. Acad. Sci.*, 4th Ser., 2: 60, in text.
1926. Hanna, G. D.
Expedition to the Revillagigedo Islands, Mexico, in 1925. General Report. *Proc. Calif. Acad. Sci.*, 4th Ser., 15: 61, in text.

Since the foregoing was transmitted, Dr. Loye Miller has sent me the following notes, suggesting at the same time that this heron might well prove to be a specific entity. In this I am inclined to concur but leave the matter open pending further osteological studies.

"The Socorro Id. Night Heron is represented in available collection by cabinet skins, but unfortunately no skeletal material has been preserved beyond such as could be dissected out of the Dickey specimen [28837], i.e. a complete tibia and tarsus. These parts have been compared with specimens from El Salvador and Panamá with the following results:

Tarsus: This segment is characterized by a shortness and stoutness, far in excess of any of the mainland specimens. Since the Socorro specimen is a sub-adult individual as indicated by the plumage, the table of measurements includes a comparable specimen from El Salvador and also an adult male from Panamá.

	<i>Socorro</i> <i>im. female</i>	<i>Salvador</i> <i>sub-adult</i>	<i>Panamá</i> <i>adult male</i>
Length	83.8 mm.	97.5 mm.	100.6 mm.
Head	10.0 mm.	9.9 mm.	10.8 mm.
Foot	10.5 mm.	9.9 mm.	10.5 mm.
Shaft	4.3 mm.	4.3 mm.	4.5 mm.

It will be noted that the Socorro bird is approximately seventeen per cent shorter than the largest mainland bird but is quite its equal in width. Had this specimen lived to be completely mature it would not have increased appreciably in length but would in all probability have become wider of shaft.

There are slight but noticeable differences in the size of the distal trochleae between individuals from the same Central American locality, the smaller trochleae being found on the juvenile bird. The island specimen, however, possesses trochleae quite equal to the maximum adult from the mainland.

There is here suggested a tendency to strengthening of the toes which may be associated with the more pronounced ambulatory habit.

Tibia: There is no less shortening to be observed in the tibia than is recorded for the tarsus. The bone is likewise relatively wide of shaft but is narrower through the distal condyles than the adult male from the mainland. Ratio of tarsal length to tibial length is about the same in the two forms.

We seem to be dealing with a short and stout legged bird but unfortunately we have no material for study of the wing skeleton. Should such material some day become available, it would be of interest to enquire whether or not a weakening of those parts had taken place coordinate with the strengthening of the foot as an adaptation to the insular habitat."