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ERRATA

- p. 76, left column, 2nd line from the bottom, should read Siebenrock, 1907, instead of 1987.
- p. 79, right column, 3rd line of Ejemplares examinados should read ... (USNM 204050);
- p. 81, right column, 3rd line should read Cinosternon sp.: ...
- p. 83, left column, 5th line should read (EPN 106; ...
- p. 83, left column, 10th line should read (JLC 324-325); ...
- p. 83, left column, 2nd paragraph, 1st line should read Guayaquil, Río ...
- p. 83, right column, 7th line should read, Los ejemplares de Santo Domingo ya no existen ...
- p. 84, left column, 5th line under Geoemyda annulata should read Wermuth y Mertens ...
- p. 84, left column, 22nd line should read ... Mertens ...
- p. 86, right column, 2nd paragraph, 18th line should read annulata está presente ...
- p. 87, left column, 3rd line should read ... Obst, 1986).
- p. 87, right column, 2nd line of Ejemplares examinados should read (PCHP 2432-2440)
- p. 91, left column, 2nd line should read 204055-56); ...
- p. 92, right column, next to last line should read Bulún [San Francisco]
- p. 93, right column, 9th line should read Duellman ...
- p. 94, last line should read ... reptiles ...
- p. 95, 15th line should read (Geoclemmys melanosterna)
- p. 95, 17th line should read Notes on three ...
- p. 96, 3rd line should read ... Serie J721, CT-ÑI-E4, ...
- p. 96, 13th line should read (Chelydra serpentina acutirostris)
- p. 97, 6th line should read ... viii + 152 pp.
- p. 98, 1st line should read Cont. Herp. 2: x + 403 pp.
- p. 98, before Siebenrock, 1909, should appear the following citation:
- Siebenrock, F. 1907. Die Schildkrotenfamilie Cinosternidae. Sitzungberg. Akad. Wiss. Wien 116:527-599.
- p. 99, 20th line should end with (2)
- p. 101, 12th line should read ... al NE de Samborondón
- p. 101, 23rd line should read ... en la margen izquierda ...
- p. 102, 9th line should read ... en la margen izquierda ...

[This English translation is being provided to potential readers who might not otherwise make ready use of the Spanish original. JLC]

CONTRIBUCION AL CONOCIMIENTO SOBRE LA DISTRIBUCION GEOGRAFICA DE LOS QUELONIOS DEL ECUADOR OCCIDENTAL

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RESUMEN

Se presenta una clave para las cinco especies de tortugas terrestres y de agua dulce encontrados en el Ecuador Occidental. La información de cada especie incluye referencias de los especímenes examinados y de los registros de la literatura, así como una discusión detallada de ciertas localidades erróneas o problemáticas. Además, se adjunta un índice topográfico de todos los lugares mencionados en el texto.

ABSTRACT

A key for the five species of terrestrial and freshwater turtles found in western Ecuador is presented. An account for each species includes reference to specimens examined and literature records, as well as a detailed discussion of certain erroneous or problematic localities. A completely cross-referenced gazetteer is included for all place names mentioned in the text.

INTRODUCTION

Ecuador is readily divided into four major geographic areas: Amazonian lowlands, Andean Cordillera, Pacific lowlands, and the Galápagos archipelago. Terrestrial or freshwater turtles are found in three of these areas. The tortoises of the Galápagos have been the object of a great deal of research, but the mainland turtle faunas have been largely overlooked. The Andes divide the mainland turtle fauna into two discrete and distantly related units. There are no species shared between the mostly pleurodiran turtle fauna of the Amazonian area and the entirely cryptodiran fauna of the Pacific lowlands.

The distribution of freshwater and terrestrial turtles in the Pacific lowlands of western Ecuador is of zoogeographic interest as the southernmost extent of the range for all five species occurring there. This trans-Andean turtle fauna is an extension of the Chocoan fauna from Colombia, associated with the wet Chocoan rainforest. The Chocoan fauna is in turn strongly related to the Caribbean fauna of lower Central America. Farther south in Ecuador, more of the Pacific lowlands are covered with dry forest formations. The climate and vegetation are influenced by opposing offshore currents which meet near the equator, and are dominant factors influencing the zoogeography of the Pacific lowlands (Peters, 1960).

Most references to turtles in western Ecuador have occurred as reports of single or very few specimens (Gunther, 1860; Cope, 1868; Boulenger, 1882, 1898, 1902a; Peracca, 1904; Siebenrock, 1907; Vaillant, 1911). Three of the five taxa were described on the basis of material from western Ecuador (Gray, 1860; Peters, 1862; Boulenger, 1902b). Orcés V. (1949) is the only author to have addressed the distribution of Ecuadorian turtles specifically, and in a comprehensive manner based on many specimens of several taxa.

The purpose of this paper is to discuss literature records and present new information regarding the distribution of turtles in western Ecuador.

METHODS

The organization of this report is similar to that adopted by Peters (1960, 1967) for his snake and lizard checklists. A key for the five turtle species in western Ecuador is followed by an account for each species and a distribution map. A gazetteer of localities

mentioned in the species accounts is included.

Each account contains the following information: a synonymy with name combinations and subsequent usages for known references based upon specimens from Ecuador, and significant reviews, checklists, and catalogs of turtles which have mentioned Ecuador in the range description; and type locality and museum numbers of the type specimens for the three turtles described from western Ecuador. The synonymy is followed by an account of common names used in Ecuador. The specimens examined section is grouped by province, with localities listed alphabetically by place name. Specimens known to be from Ecuador, but without specific locality data are referenced also. Literature records are referred to with a literature citation rather than a museum number. A comments section contains a general statement of distribution in western Ecuador and remarks about problems of taxonomy or distribution.

The specimens examined are from museum collections in the United States and Ecuador, and are identified with the museum abbreviations recommended by Leviton et al. (1985). Type specimens in two European museums have not been examined. The following list includes the collection abbreviations used in the species accounts.

AMNH - American Museum of Natural History, New York
BMNH - British Museum (Natural History), London
CAS - California Academy of Sciences, San Francisco
EPN - Escuela Politécnica Nacional, Quito
JLC - J.L. Carr field number
KU - Museum of Natural History, University of Kansas
MCZ - Museum of Comparative Zoology, Harvard University
MECN - Museo Ecuatoriano de Ciencias Naturales, Quito
MVZ - Museum of Vertebrate Zoology, Berkeley
PCHP - private collection of Peter C.H. Pritchard
UCE - Universidad Central del Ecuador, Quito
UMMZ - University of Michigan Museum of Zoology, Ann Arbor
USNM - National Museum of Natural History, Washington
ZMB - Museum für Naturkunde, Berlin

OMISSIONS

Two species of tortoises have been reported from western Ecuador, but we consider them erroneous records based upon translocated specimens. Cope (1868) reported a specimen of *Testudo elephantopus* (= *Geochelone nigra* fide Pritchard, 1986) obtained by the Orton expedition in Guayaquil. The specimen almost certainly was USNM 6692, which is no longer in the collection (R.P. Reynolds, in litt.). It must have been transported from the Galápagos Islands, for which Guayaquil was the usual mainland port of departure and arrival. Captive tortoises from the Galápagos may still be found in and around Guayaquil (R.P. Reynolds, pers. comm.).

Orcés V. (1949) reported *Testudo denticulata* (= *Geochelone denticulata*) from two localities (near Guayaquil and Esmeraldas) in western Ecuador. According to Professor Orcés (pers. comm.), it dealt with two specimens maintained in captivity for some time and sold or donated to Dr. Spillman in Guayaquil. This species otherwise is considered to have an Amazonian distribution (e.g. Pritchard and Trebbau, 1984). Lacking evidence that any tortoise species occurs naturally on the Pacific versant of mainland Ecuador, we conclude that *Geochelone denticulata* specimens in Ecuador all originated in the Amazonian lowlands. It is apparently common for this species from Amazonian Ecuador to be transported to the Pacific lowlands and the intermontane basins (A. Almendáriz, pers. obs.). For example, we were offered a large tortoise shell in 1986 in a remote area of Esmeraldas Province. Upon inquiring it was said to have come from Napo Province (in Amazonia). Advances in transportation systems and increased mobility of the lowland human population may eventually result in the establishment of tortoise populations in the Pacific lowlands.

KEY TO THE FRESHWATER AND TERRESTRIAL
TURTLES OF WESTERN ECUADOR

- 1.A. Carapace with 11 marginal scutes on each side; plastron with two transverse hinges *Kinosternidae (Kinosternon leucostomum postinguinale)*
- B. Carapace with 12 marginal scutes on each side; plastron without obvious transverse hinges 2
- 2.A. Carapacial margin strongly serrated posteriorly; plastron cruciform, without an anal notch; tail long with dorsal osteoderms *Chelydridae (Chelydra serpentina acutirostris)*
- B. Carapacial margin not, or only slightly, serrated posteriorly; extensive plastron with an anal notch; tail relatively short, without dorsal protuberances 3 (*Rhinochlemmys*)
- 3.A. Carapace usually with some yellow coloration on the middorsal keel; bridge completely dark brown or black; dorsal surface of the head without bright or distinct stripes *R. annulata*
- B. Carapace with a darkly colored mid-dorsal keel, which is not lighter than the lateral areas of the carapace; bridge some shade of yellow; dorsolateral surface of the head with distinct yellowish stripes 4
- 4.A. Entire central portion of plastron black or dark brown; dorsolateral head stripe yellow, extending from snout to back of head; axillary and inguinal pockets bright golden yellow with black markings *R. melanosterna*
- B. Plastron largely pale cream or yellow, with a black spot or smudge on each scute; dorsolateral head stripe pale yellow and discontinuous over the eyes; axillary and inguinal pockets unmarked, uniformly pale yellow to gray *R. nasuta*

SPECIES ACCOUNTS

Order Testudines
Family Chelydridae

Chelydra serpentina acutirostris Peters

Chelydra serpentina var. acutirostris Peters, 1862:627.

Type locality: Guayaquil (ZMB 4500).

Chelydra serpentina: Cope (1868:96); Siebenrock (1909:434); Freiberg (1979:114); Albuja et al. (1980:23); Pritchard (1985:230); Iverson (1986:13).

Chelydra Rossignoni: Boulenger (1902:50); Vaillant (1911).

Chelydra serpentina acutirostris: Muller (1939:98); Peters (1955:341); Mertens and Wermuth (1955:333); Wermuth and Mertens (1961:6, 1977:2); Donoso-Barros (1965:1); Pritchard (1967:57); Medem (1977:41); Patzelt (1979:179); Miyata (1982:11); Pritchard and Trebbau (1984:12).

Chelydra acutirostris: Orcés V. (1949:18).

NOMBRES LOCALES.- "Tortugaña" is used throughout the Río Cayapas basin. Medem (1977) reported the use of "tortugaña" or "tortugana" along the Ecuadorian coast.

SPECIMENS EXAMINED.- Esmeraldas : without specific locality (EPN 43, 49, 72, 78); near Cachaví, ca. 20 m (USNM 204050); Finca "La Esperanza", Concepción (USNM 281873-74); near Río Santiago, vicinity of Concepción (JLC 292[MECN], EPN 196); El Pan (EPN 2654); vicinity of La Boca (EPN 86, USNM 281875).

Guayas : Guayaquil (USNM 66875); Isla de Silva, nr. Guayaquil (EPN 81, 82); nr. Quevedo, cabeceras del Río Congo (USNM 204051).

Pichincha : Centro Científico Río Palenque, 47 km S of Santo Domingo de los Colorados, 150-220 m (USNM 285506-09); Estación Biológica Río Palenque, 56 km N Quevedo (KU 146745); Estación Científica Río Palenque (MCZ 162883); Santo Domingo de los Colorados (KU 179510, UMMZ 123174); 11 km S Santo Domingo de los Colorados, 500 m (AMNH 110613); Hacienda Equinox, 30 km NNW of Santo Domingo de los Colorados, 1000 ft (USNM 204047); 200 yd. W of Río Blanco at Equator, 32 km NNW Santo Domingo de los Colorados, 1000 ft (USNM 204048-49).

LITERATURE RECORDS.- Esmeraldas : no specific locality (Vaillant, 1911); Río Durango, 350 ft. (Boulenger, 1902); Río Mataje (Medem, 1977); San Javier, 60 ft. (Boulenger, 1902). Guayas : Duran (Medem, 1977); Guayaquil (Cope, 1868); Isla de Silva (Orcés V., 1949).

COMMENTS.- Medem (1977) reviewed the distribution of this turtle throughout its range. Chelydra serpentina acutirostris was described from Ecuador (Peters, 1862), and has been recorded from Ecuador many times in the primary and secondary literature. Known localities in Ecuador extend from the Río Mataje on the border with Colombia to Guayaquil in the south, at elevations of 600 meters or less (Fig. 1).

Family Kinosternidae

Kinosternon leucostomum postinguinale (Cope)

Kinosternon sp.: Boulenger (1882:457).

Cinosternum postinguinale Cope, 1887:23; replacement name for C. brevigulare Cope (1885:389), a primary junior homonym of C. brevigulare Gunther (1885:17).

Cinosternum leucostomum: Boulenger (1898:108); Peracca (1904:2); Siebenrock (1907:595, 1909:446).

Kinosternon leucostomum: Müller (1939:98); Pritchard (1985:230); Iverson (1986:121).

Kinosternon aff. spurrelli: Orcés V. (1949:18, 21).

Kinosternon leucostomum spurrelli: Pritchard (1979:529); Pritchard and Trebbau (1984:12).

Kinosternon spurrelli: Patzelt (1979:93). (Incorrect subsequent spelling)

Kinosternon leucostomum postinguinale: Smith and Smith (1980:77).

Kinosternon spurrelli: Albuja et al. (1980:23); Miyata (1982:11).

NOMBRES LOCALES.- "Tapaculo" is used throughout western Ecuador, as it is in Colombia (Mittermeier et al., 1980).

SPECIMENS EXAMINED.- Esmeraldas : Río Cachaví (EPN 26, 41, 52); nr. Río Santiago, vic. Concepción (JLC 274, 275); Río Bogotá, nr. Concepción (JLC 277); Río Bogotá at Concepción (USNM 281876); Finca "La Esperanza", Concepción (EPN 106; JLC 289, 298; USNM 281877); Estero El Ceibo (JLC 315); El Pan (EPN 2561-62, 2656); Giga City (USNM 20607); vic. La Boca (EPN 53-55); Luis Vargas Torres (EPN 38-39, 47-51); Playa Grande (JLC 324-325); San José de Tagua (EPN 104-105; JLC 299); region of Río Santiago (USNM 204059); Finca "Chuju", Río Santiago (EPN 195); Santiago River (USNM 20606).

Guayas : Guayaquil, Guaymas [= Guayas] River (USNM 94337-339); Pascuales (EPN 40).

Pichincha : Centro Científico Río Palenque (USNM 285511-13); Hacienda Equinox, 30 km NW of Santo Domingo de los Colorados (USNM 204058); San Miguel de los Colorados (USNM 204057).

LITERATURE RECORDS.- Esmeraldas : Río Bogotá, Río Durango (Siebenrock, 1907).

Guayas : Puente del Chimbo (Boulenger, 1898); Chimbo [= Puente del Chimbo of Boulenger, 1898], Guayaquil (Siebenrock, 1907); market in Guayaquil (Pritchard, 1967).

Los Ríos : Vinces (Peracca, 1904). Pichincha : Nanegal (Boulenger, 1882).

COMMENTS.- Orcés V. (1949) reported upon several specimens of Kinosternon from western Ecuador. He suggested that a specimen from Guayaquil resembled K. spurrelli or K. postquinale, and that others from Santo Domingo de los Colorados possibly resembled K. dunnii. The specimens from Santo Domingo no longer exist (G. Orcés V., pers. comm.). All specimens of Kinosternon from western Ecuador that we have examined, including those from the vicinity of Santo Domingo, represent the species K. leucostomum. As suggested by Legler (1965) and Moll and Legler (1971), we refer the Ecuadorian K. leucostomum to the subspecies K. leucostomum postquinale, and the name Kinosternon spurrelli is considered a junior synonym of this subspecies.

Pritchard and Trebbau (1984) listed Peru in the distribution of K. leucostomum spurrelli, and Pritchard (1985) stated that K. leucostomum ranges as far south as northern Peru along the Pacific coast. The record for Peru is based on an undocumented sighting by a second party (P.C.H. Pritchard, 1988, in litt.). We could not locate any museum specimens of K. leucostomum from Peru, nor have other compilers of distributional information recorded this species from Peru (Carrillo de Espinoza, 1970; Carrillo de Espinoza, 1987, in litt.; Iverson, 1986).

Records for K. leucostomum in Ecuador range from the Colombian border south to Guayaquil, from near sea level to approximately 1400 meters (Fig. 2).

Family Emydidae

Rhinoclemmys annulata (Gray)

Geoclemmys annulata Gray, 1860:231.

Type locality: Esmeraldas (BMNH 1946.1.22.56, 1947.3.5.58-59).

Nicoria annulata: Boulenger (1889:126, 1898:108).

Geoemyda annulata: Siebenrock (1909:499); Vaillant (1911:48); Wettstein (1934:18); Muller (1939:100); Orcés V. (1949:19); Mertens and Wermuth (1955:350); Wermuth and Mertens (1961:83); Donoso-Barros (1965:3); Pritchard (1967:112); Freiberg (1979:51).

Geoemyda (Rhinoclemmys) annulata: Wermuth and Mertens (1977:29).

Callopsis annulata: Ernst (1978:116).

Rhinoclemmys annulata: Patzelt (1979:94); Pritchard (1979:178); Albuja et al. (1980:128).

Rhinoclemmys annulata: Freiberg (1979:122); Ernst (1980a:1); Pritchard and Trebbau (1984:12); Iverson (1986:63).

NOMBRES LOCALES.- "Bambera" was used in the Río Santiago basin. "Tortuga" was used at Playa Grande on the Río Cayapas.

SPECIMENS EXAMINED.- Esmeraldas : immediate environs of Cachaví (USNM 204052-53); Estero El Ceibo (EPN 90); Estero El Placer (EPN 2546); La Boca (EPN 2334); Luis Vargas Torres (EPN 17, 36, 44); vic. Playa Grande (USNM 281892); vic. Ricaurte (USNM 281879); vic. San José de Tagua (USNM 281878).

Guayas : Bucay (AMNH 22088); purchased in Guayaquil (PCHP 48).

Los Ríos : 5 miles E of Quevedo (USNM [MSU 1410]).

Manabí : Manta (USNM 96020).

Pichincha : Centro Científico Río Palenque (USNM 285510); Estación Científica Río Palenque (MCZ 156901); Puerto Ila (USNM 201597); Hacienda Equinox, 30 km NNW of Santo Domingo de los Colorados, 1000 ft (USNM 201595); Ramsey Farm, km 19, Chone Road, 18 km W of Santo Domingo de los Colorados (USNM 204054); 9 km W Santo Domingo (CAS 13297); San Miguel de los Colorados (USNM 201596).

No specific locality: (AMNH 97630; EPN 6, 9; MVZ 77497).

LITERATURE RECORDS.- Esmeraldas : Bulún (Siebenrock, 1909); Bulum (Muller, 1939); Esmeraldas (Gunther, 1860); "cerca de la boca del Río Esmeraldas" (Orcés, 1949); St. Javier (Ernst, 1978). Guayas : Guayaquil (Siebenrock, 1909; Orcés, 1949). Imbabura : Paramba (Boulenger, 1898). Los Ríos : Quevedo (Orcés, 1949). Manabí : Manta (Orcés, 1949). Pichincha : Puerto de Ila (Orcés, 1949); Santo Domingo (Vaillant, 1911). Western Ecuador (Orcés, 1949).

COMMENTS.- Records for Ecuador indicate a distribution from the Colombian border to the vicinity of Guayaquil in the south, at elevations less than 800 meters (Fig. 3). Other than the xeric locality of Manta, this terrestrial species appears to be associated with rainforest or riparian forest habitats almost exclusively.

Other than an old literature record, there are no records for R. annulata south of Ecuador. Gray (1870:706) reported a specimen which "came direct from Chili (sic)". This locality is obviously erroneous given our current distributional understanding (e.g. Iverson, 1986), and this specimen, as well as the Testudo elephantopus (= Geochelone nigra) he reported, can be assumed to have originated somewhere north of Chile, possibly both of them from Ecuador (obviously the case for the Galápagos tortoise).

Two localities reported by Ernst (1978) are problematic. The locality listed accompanying his paper (NAPS Document #03252) included a specimen from Kiederle Farm, 1 km W of Puerto Napo, Provincia del Napo (USNM 201594), though this locality appears not to have been mapped in a later publication (Ernst, 1980). Napo is east of the Andes, and this locality clearly is in error. A subsequent investigation by USNM staff of the field catalog has revealed that the Napo locality data was erroneously attributed to that particular specimen, and the USNM catalog has been corrected to read "Ecuador" only.

The other questionable locality is one called "Mendoza" (BMNH 1874.3.5.7). Both Boulenger (1889) and Siebenrock (1909) referred to the locality without attributing it to a particular country. The current catalog card with the entry for "Mendoza" has no reference to any political entity. The three preceding entries are for the type specimens originating in Ecuador, and this may have lead Ernst (1978) to attribute Mendoza to Ecuador. Muller (1939) specifically suggested that "Mendoza" was in northwestern Venezuela, after Wettstein (1934) had listed Venezuela within the range of R. annulata, but there is otherwise no evidence that R. annulata occurs in Venezuela (Pritchard and Trebbau, 1984). These references are evidently the source of the often repeated description of the distribution of R. annulata as including Venezuela (Mertens and Wermuth, 1955; Wermuth and Mertens, 1961, 1977; Donoso-Barros, 1965; Pritchard, 1967; Freiberg, 1979, 1981; Obst, 1986). As it is impossible to associate "Mendoza" with any confidence to either Ecuador or Venezuela, we recommend it be excluded from further consideration in the geographic distribution of R. annulata.

Dr. Luis Albuja (pers. comm.) informed us that he collected a specimen of R. annulata in Chongón, Guayas Province, and that he maintained it in captivity for nearly a year, feeding principally on fruits.

Rhinoclemmys melanosterna (Gray)

Geoclemmys melanosterna Gray, 1861:205.

Geoemyda punctularia melanosterna: Siebenrock (1909:498).

Geoemyda punctularia melanosterna: Wettstein (1934:19); Muller (1939:100); Mertens and Wermuth (1955:352); Wermuth and Mertens (1961:94); Donoso-Barros (1965:4); Pritchard (1967:109).

Geoemyda (Rhinoclemmys) punctularia melanosterna: Wermuth and Mertens (1977:32).

Callopsis punctularia melanosterna: Ernst (1978:124).

Rhinoclemmys melanosterna: Pritchard (1979:180).

Rhinoclemmys punctularia melanosterna: Freiberg (1979:123); Ernst (1981:2).

Rhinoclemmys melanosterna: Pritchard and Trebbau (1984:12); Iverson (1986:67).

COMMON NAMES.- The name "pintadilla" was used in the Río Santiago basin. "Orito" was used at Playa Grande on the Río Cayapas. This species was referred to as

"patlamarilla" in La Tola at the mouth of the Río Cayapas. All of these names allude to the vivid yellow-gold coloration of this species' soft parts.

SPECIMENS EXAMINED.- Esmeraldas : purchased in Borbón (PCHP 2432-2440); Concepción (EPN 33, 34, 37, 92; JLC 270); Finca "La Esperanza", Concepción (JLC 281; USNM 281880-81); Río Bogotá at Concepción (EPN 91); Río Bogotá upstream from Concepción (EPN 29, 103; USNM 281882); Río Huimbicito near Concepción (JLC 269); nr. Río Santiago upstream from Concepción (EPN 130; JLC 271, 272); Estero El Ceibo (JLC 318; USNM 281883-85); El Pan (EPN 2655); purchased in Esmeraldas (PCHP 2429-31); vicinity of La Boca (EPN 2337); La Boca, Río Bogotá (EPN 19-20); Playa Grande (JLC 326; USNM 281886); San Jose de Tagua (JLC 302-303).

No specific locality: (EPN 50).

LITERATURE RECORDS.- Esmeraldas : Borbon (Siebenrock, 1909); St. Javier (Ernst, 1978); River Bogotá (Ernst, 1978).

COMMENTS.- The range of *R. melanosterna* was depicted with a single locality in Ecuador by Ernst (1981). The two specimens which formed the basis for that record were both from Esmeraldas (St. Javier, BMNH 1901.3.29.3; River Bogotá, BMNH 1902.5.27.8). Ernst's (1981) locality spot was misplaced far to the south of either location, and outside of the known range in Ecuador. The range map of Iverson (1986) was more accurate.

All unquestionable Ecuadorian records for this species come from the Ríos Cayapas-Santiago or Mataje basins, at elevations below 175 m (Fig. 4). The only suggestion that *R. melanosterna* may occur as far south as the Río Esmeraldas basin is three shells purchased in Esmeraldas (PCHP 2429-31). The specimen's true provenance is unknown. Until such time as *R. melanosterna* is collected in the Río Esmeraldas basin we do not accept this record as a valid indication of the presence of this species in the immediate vicinity of Esmeraldas (the city). While in La Tola, we were told of a commercial source of *R. melanosterna* at Molinita, along the coast several kilometers southwest of the mouth of the Río Cayapas.

Rhinoclemmys nasuta (Boulenger)

Nicoria nasuta Boulenger, 1902:53.

Type locality: "Bulún, 160 feet, and from the Río Durango, 350 feet" (BMNH 1947.3.5.54-57).

Geoemyda nasuta: Siebenrock (1909:499); Wettsstein (1934:18); Muller (1939:100).

Geomyds nasuta: Orces V. (1949:20). (incorrect subsequent spelling)

Geoemyda punctularia nasuta: Mertens and Wermuth (1955:352); Wermuth and Mertens (1961:95); Donoso-Barros (1965:4); Pritchard (1967:109).

Geoemyda (Rhinoclemmys) punctularia nasuta: Wermuth and Mertens (1977:32).

Callopis nasuta: Ernst (1978:120).

Rhinoclemys nasuta: Pritchard (1979:179).

Rhinoclemmys punctularia nasuta: Freiberg (1979:123).

Rhinoclemmys punctularia nasuta: Albuja et al. (1980:37). (incorrect subsequent spelling)

Rhinoclemmys nasuta: Ernst (1980b:1); Pritchard and Trebbau (1984:12); Iverson (1986:68).

COMMON NAME.- "Sabaleta" is used in the Cayapas-Santiago basin, as Mittermeier et al. (1980) reported for Departamentos Nariño and Cauca, Colombia.

SPECIMENS EXAMINED.- Esmeraldas : immediate environs of Cachaví (USNM 204055-56); Río Cachaví (EPN 12, 22); in affluent of Quebrada Chiquita on road to Ricuarte, 1°13' N, 78°44' W (USNM 281891); Como Hacemos, nr. Río Santiago (EPN 35); Estero El Ceibo (EPN 101, 107, 312-313; JLC 306, 308-309; USNM 281887); Estero El Placer (EPN 2545, 2563); Guembi (EPN 11); vicinity of La Boca (EPN 2335-2336); "La Chiquita", km 12 via San Lorenzo-Ricaurte (EPN 10, 16, 28); nr. Playa Grande (EPN 108; JLC 328); "2 km antes del Salto del Bravo" (EPN 27); San Lorenzo (EPN 18); San José Cachaví

(EPN 7-8, 13-15, 21, 46); Sarria, Río Bogotá (JLC 332, 334; USNM 281888-90); vic. Sucre, Río Huimbita (EPN 30-32).

Pichincha : Santo Domingo de los Colorados (EPN specimen without number).

No specific locality: (EPN 48).

LITERATURE RECORDS.- Esmeraldas : Bulún, 160 feet (Boulenger, 1902); Río Durango, 350 feet (Boulenger, 1902).

COMMENTS.- Two aspects of *R. nasuta* distribution in Ecuador are problematic. One is whether or not *R. nasuta* occurs in the Río Esmeraldas basin. The only specimen which bears on this question is from Santo Domingo de los Colorados (EPN). Santo Domingo is a city situated between the upper tributaries of both the Esmeraldas and Guayas basins. The collector confirmed the locality of this specimen, said to have been collected to the north of Santo Domingo in the Río Esmeraldas basin (M. Olalla, pers. comm.). Given this account by the collector, we accept this locality as valid, although we are at a loss to explain why others have not encountered specimens in this heavily collected area.

Ernst (1980b) presented a map of the distribution of *R. nasuta* with three localities depicted in Ecuador. One locality was just south of the Río Esmeraldas near its mouth, and the text states that the species has been recorded from "near Esmeraldas". Dr. Ernst (in litt.) has advised us that the type specimens and the USNM specimens (only 204055-56 at that time) formed the basis for his map. These three localities are all relatively closely spaced in the northwestern corner of the country, but at the time the map was made the actual location of the type localities was unknown; the type locality spot was merely placed in far northwestern Ecuador (C.H. Ernst, in litt.). Therefore, there is no basis for a record of *R. nasuta* near Esmeraldas. This erroneous locality was unfortunately repeated by Iverson (1986). We are left with the Santo Domingo specimen as the only evidence of the presence of *R. nasuta* in the Río Esmeraldas drainage basin.

The type locality of *R. nasuta* has been a problem for those attempting to locate the two place names designated by Boulenger (1902). Peters (1955) was the first to confront the issue as he tried to catalog the type localities of amphibians and reptiles described from Ecuador. He referred "Bulun" to "Pulun", following Chapman (1926), but he was not able to place the "Río Durango" in an Ecuadorian province. Ernst (1980b) addressed the matter by placing a single spot in far northwestern Ecuador on a small scale map, but with "Bulun" misspelled "Belun" and without specific geographic knowledge of the places' actual locations. Apparently unknown to Ernst (1980b), others had determined that "Bulun" was a misspelling for "Pulun" (Chapman, 1926; Peters, 1955; Paynter and Taylor, 1977), probably the result of bad transcription. Pulun appeared on the map of Ecuador in 1950 (IGM) as a small town on the Río Bogotá, but it has disappeared from recent maps (e.g. IGM, 1985), and two towns now appear in the same vicinity on the upper Río Bogotá (Santa Rita and San Francisco). Through interviews with people at La Boca, we were able to ascertain that a name transformation had taken place at Pulun. A priest had come to Pulun and built a church in the late 19th or earliest part of the 20th century. The patron saint of that church was San Francisco, and gradually the town came to be called "San Francisco de Pulun". Over the course of years the "de Pulun" was gradually dropped, and today the town is known simply as "San Francisco". Knowledge of the name "Pulun" is retained only by the older inhabitants of the area; the younger people are completely unaware that "San Francisco" ever was called "Pulun".

The Río Durango locality has been even more problematic. Paynter and Taylor (1977) could not locate the Río Durango, but noted evidence of an association with Paramba on the Río Mira at an elevation around 1,000 m, and faunal evidence of it being a lowland location in Esmeraldas. The Río Durango is an affluent of the upper Río Bogotá, entering that river less than one kilometer upstream from San Francisco (IGM, 1985). With regard to the conflicting evidence discussed by Paynter and Taylor (1977), the uppermost reaches of the Río Durango are at an elevation slightly less than 500 meters, and the Río Mira is approximately six kilometers directly east (IGM, 1985).

Boulenger (1902) reported the elevation of Bulún [San Francisco] as 160 feet. This figure corresponds with ca. 49 meters, and San Francisco lies between the 40 and 60 m contours (IGM, 1985). The other syntypes were from the Río Durango at 350 feet, which is approximately 107 m. Interpolation of this elevation along the river course places it several km upstream from San Francisco at 1°03' N, 78°38' W.

Known localities for *R. nasuta* in western Ecuador are primarily in the northwest of Esmeraldas Province, possibly with an elevational range to 600 m (Fig. 5).

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GAZETTEER OF ECUADORIAN TURTLE LOCALITIES	
The following list includes all place names mentioned in the text, including map coordinates and the province in which found. The coordinates for rivers and streams are for the mouth, unless otherwise specified. Coordinates have been derived from the IGM 1:50,000 topographic map series when unattributed, or from one of the following sources designated with the corresponding number: (1) IGM (s/l); (2) Paynter and Traylor (1977); and (3) USCGS (1950).	
Belun - misspelling for Bulún	
Blanco, Río (ESMERALDAS & PICHINCHA)	0°28' N, 79°25' W (2)
afluentes del Río Esmeraldas	
Bogotá, Río (ESMERALDAS)	1°03' N, 78°50' W (2)
afluentes del Río Santiago	
Borbón (ESMERALDAS)	1°06' N, 78°59' W (2)
población en la confluencia de los Ríos Cayapas y Santiago	
Bravo, Río, salto del (ESMERALDAS)	0°40' N, 78°56' W
el Río Bravo es un afluente del Río Cayapas; 198 m.	
Bucay (GUAYAS)	2°10' S, 79°06' W (2)
población al lado del Río Chimbo	
Bulum - misspelling for Bulún	
Bulún - misspelling for Pulún	
Cachabí [= Urbina]	
Cachabí, Río - see Río Cachaví	
Cachaví [= Urbina]	
Cachaví, Río (ESMERALDAS)	1°03' N, 78°49' W
afluentes del Río Bogotá	
Cayapas, Río (ESMERALDAS)	1°13' N, 79°03' W (2)
desemboca en el Océano Pacífico	
Centro Científico Río Palenque	0°35' S, 79°22' W (3)
56 km N Quevedo, 47 km S Santo Domingo en la vía entre los dos; en Pichincha	
Como Hacemos (ESMERALDAS)	1°03' N, 78°52' W
localidad cerca del Río Santiago al NO de Concepción	
Concepción (ESMERALDAS)	1°02' N, 78°50' W (1)
población entre los Ríos Santiago y Bogotá, en la desembocadura del Río Huimbicito	
Congo, Río, cabeceras del (GUAYAS)	1°05' S, 79°42' W (3)
afluente del Río Daule, al O de Quevedo	
Chimbo - see Puente del Chimbo	
Chiquita, Quebrada (ESMERALDAS)	1°11' N, 78°44' W
afluente del Río Tululí	
Durán [= Eloy Alfaro]	
Durango, Río (ESMERALDAS)	1°05' N, 78°41' W
afluente del Río Bogotá	
El Ceibo, Estero (ESMERALDAS)	1°05' N, 78°48' W
afluente del Río Bogotá	
Eloy Alfaro (GUAYAS)	2°10' S, 79°51' W (1)
población 3 kms. al E de Guayaquil	
El Pan (ESMERALDAS)	1°15' N, 78°36' W
población al lado del Río Mataje, en la frontera con Colombia	
El Placer, Estero (ESMERALDAS)	1°12' N, 78°34' W
afluente del Río Mataje	
Esmeraldas (ESMERALDAS)	0°58' N, 79°39' W (1)
ciudad y capital de la Provincia de Esmeraldas	
Esmeraldas, Río (ESMERALDAS)	0°56' N, 79°38' W (1)
desemboca en el Océano Pacífico	
Estación Biológica Río Palenque - see Centro Científico	
Estación Científica Río Palenque - see Centro Científico	
Finca "Chujú" (ESMERALDAS)	1°02' N, 78°49' W
finca cerca de Concepción, en el Río Santiago	
Finca "La Esperanza" (ESMERALDAS)	1°03' N, 78°50' W
finca frente a Concepción, margen Izquierda del Río Santiago	
"Giga City" (ESMERALDAS)	
Incorrect name, probably in the Río Santiago basin judging by the other specimens from the same field collection	
Guayaquil (GUAYAS)	2°10' S, 79°52' W (1)
ciudad y capital de la Provincia de Guayas	
Guayas, Río (GUAYAS)	2°36' S, 79°52' W (2)
formado from the Ríos Daule and Babahoyo	
Guembi [= Huimbí]	
Hacienda Equino (PICHINCHA)	0°01' S, 79°14' W (3)
"30 km NW Santo Domingo de los Colorados"	
Hacienda Paramba (IMBABURA)	0°48' N, 78°21' W (1)
finca al sur del Río Mira	
Huimbi (ESMERALDAS)	0°56' N, 78°46' W (3)
población en la margen derecha del Río Huimbi	
Huimbi, Río (ESMERALDAS)	1°01' N, 78°49' W
afluente del Río Santiago	
Huimbicito, Río (ESMERALDAS)	1°02' N, 78°49' W
afluente del Río Santiago, desemboca en Concepción	
Isla de Silva (GUAYAS)	1°55' S, 79°42' W (1)
sitio 5 kms. al NE de Samborondón	
La Boca (ESMERALDAS)	1°08' N, 78°46' W
población en la confluencia de los Ríos Bogotá y Tululí	
La Chiquita (ESMERALDAS)	1°13' N, 78°45' W
campamento forestal del Ministerio de Agricultura y Ganadería al E de San Lorenzo; a km 12 en la vía San Lorenzo-Ricaute; 60 m.	
La Tola (ESMERALDAS)	1°12' N, 79°02' W
población en la margen Izquierda de la desembocadura del Río Cayapas	
Luis Vargas Torres (ESMERALDAS)	0°52' N, 78°47' W (1)
población en la margen izquierda del Río Santiago; 200 m.	
Manta (MANABÍ)	0°56' S, 80°43' W (1)
ciudad en la costa Pacífica	

Mataje, Río (ESMERALDAS) 1°21' N, 78°44' W (1)
 en la frontera con Colombia; desemboca en el Océano Pacífico
 Mira, Río (CARCHI, ESMERALDAS, IMBABURA) 1°36' N, 79°01' N (2)
 río del noroccidente ecuatoriano y que desemboca en Colombia
 Molinita (ESMERALDAS) 1°09' N, 79°05' W
 población al SO de La Tola cerca el Océano Pacífico
 Nanegal (PICHINCHA) 0°08' N, 78°40' W (1)
 población en el Río Nanegal 35 kms. al NO de Quito; ca. 1400 m. (2)
 Paramba - see Hacienda Paramba
 Pascuales (GUAYAS) 2°03' S, 79°55' W (1)
 población en la margen derecha del Río Daule
 Playa del Oro [= Luis Vargas Torres]
 Playa Grande (ESMERALDAS) 0°54' N, 78°58' W
 población en la margen Izquierda del Río Cayapas
 Puente del Chimbo (GUAYAS) 2°10' S, 79°10' W (2)
 cerca a Bucay; 345 m (2)
 Puerto de Ila - see next entry
 Puerto Ila (PICHINCHA) 0°33' S, 79°22' W (2)
 población al lado del Río Baba
 Pulún [= San Francisco]
 Quevedo (LOS RIOS) 1°01' S, 79°27' W (1)
 ciudad de la Prov. de Los Ríos
 Ramsey Farm (PICHINCHA) 0°16' S, 79°20' W (3)
 "km 19, Chone Road, 18 km W of Santo Domingo de los Colorados"
 Ricaurte (ESMERALDAS) 1°11' N, 78°44' W
 población cerca a la confluencia de los Ríos Tulubí y Palabí
 Salto del Bravo - see Río Bravo
 San Francisco (ESMERALDAS) 1°05' N, 78°42' W
 población en la margen derecha del Río Bogotá; antes llamada Pulún
 San Javier (de Cachaví) (ESMERALDAS) 1°04' N, 78°46' W
 población en la margen derecha del Río Cachaví, y en la línea de ferrocarril
 entre Ibarra y San Lorenzo
 San José (de) Cachaví (ESMERALDAS) 0°57' N, 78°39' W (3)
 población del alto Río Cachaví
 San José de Tagua (ESMERALDAS) 1°01' N, 78°50' W
 población en la margen Izquierda del Río Santiago
 San Lorenzo (ESMERALDAS) 1°17' N, 78°50' W
 ciudad costera del noroccidente ecuatoriano
 San Miguel de los Colorados (PICHINCHA) 0°20' S, 79°15' W
 cerca a Santo Domingo de los Colorados, en la vía a Quevedo
 Santiago, Río (ESMERALDAS) 1°05' N, 78°59' W
 desemboca en Borbón
 Santa Rita (ESMERALDAS) 1°06' N, 78°43' W
 población en la margen Izquierda del alto Río Bogotá
 Santo Domingo - see Santo Domingo de los Colorados
 Santo Domingo de los Colorados (PICHINCHA) 0°15' S, 79°09' W (2)
 ciudad on the main highway from the Pacific lowlands to Quito
 Sarria (ESMERALDAS) 1°06' N, 78°48' W
 localidad cerca del Río Bogotá al SO de La Boca
 St. Javier - see San Javier
 Sucre (ESMERALDAS) 1°00' N, 78°48' W
 población en la margen derecha del Río Huimbi
 Urbina (ESMERALDAS) 1°02' N, 78°46' W
 población en la margen Izquierda del Río Cachaví, y en la línea de ferrocarril
 entre Ibarra y San Lorenzo; antes era llamada Cachaví o Cachabí
 Vinces (LOS RIOS) 1°32' S, 79°45' W (2)
 población en la margen Izquierda del Río Vinces