



The Golfo de Fonseca is an inlet along the Pacific coast of Central America located in El Salvador, Honduras, and Nicaragua. The gulf covers an estimated total area of 3,200 km² and contains a number of volcanic islands and islets, of which the largest are Isla Zacate Grande and Isla del Tigre. Most of the islands are located in Honduras (dark yellow). Despite widespread deforestation of dry forest habitats, these islands and their surrounding waters support a rather diverse herpetofauna known to include 47 anuran and reptile species, of which 45 are known to occur in Honduran territory. In the following contribution, the authors present the results of recent fieldwork on 15 Honduran islands in the gulf, and present a review of the species known from the Honduran portion of these islands and their surrounding waters.

Map prepared by Alexander Gutsche



The herpetofauna of islands in the Golfo de Fonseca and adjacent waters, Honduras

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ABSTRACT: We provide the results of four trips to various islands in the Golfo de Fonseca, Honduras. We document a total of 45 species of amphibians and reptiles from the islands or nearby waters, including 32 species previously unreported from the area. Herein we provide accounts for all the known species from the islands and adjacent waters, and include their description, brief natural history information, and other pertinent comments. JRM also designates a new infraorder name for the teiids, which is necessary because *Gymnophthalmidae* is an older name than *Teiidae*.

Key Words: Amphibians, Pacific versant islands, reptiles, southern Honduras

RESUMEN: Presentamos los resultados de cuatro viajes a las islas del Golfo de Fonseca, Honduras. Documentamos un total de 45 especies de anfibios y reptiles en las islas o las aguas cercanas, incluyendo 32 especies previamente no registradas en la zona. En este documento proporcionamos cuentas para todas las especies conocidas de las islas y las aguas cercanas, incluyendo su descripción, breve información sobre su historia natural y otros comentarios pertinentes. JRM también designa un nuevo nombre de infraorden para los teidos, que es necesario porque *Gymnophthalmidae* es un nombre más viejo que *Teiidae*.

Palabras Claves: Anfibios, islas del vertiente Pacífico, reptiles, sur de Honduras

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INTRODUCTION

The herpetofauna of the Pacific islands and adjacent waters in the Golfo de Fonseca, Departamento de Valle, in extreme southern Honduras is one of the most poorly-known in the country. McCranie and Wilson (2002) and McCranie and Castañeda (2007) reported only two amphibian species from this area, but we believe the salamander

they included does not occur on the island from where it was reported (see Species Deleted from the Fonseca Island Herpetofauna). McCranie (2011) reported only seven snake species from the islands that we did not collect on our first trip for this project. Also, the single anole reported from these islands by McCranie and Köhler (2015) was based on our collections. Regarding the remaining lizards, crocodiles, and turtles, only four species were collected before 2006 (JRM, unpublished). Regarding all of the herpetofauna, only one snake species was not collected either on Isla del Tigre or Isla Zacate Grande (a *Boa imperator* from Isla Exposición). No species were reported from any of the remaining Honduran Fonseca islands. Lovich et al. (2006, 2010) reported on a few species they collected on Isla del Tigre and/or Isla Zacate Grande. Herein, we compile the results of our herpetofaunal fieldwork from 15 islands in the Golfo de Fonseca, and present a review of the species known from the Honduran portion of those islands and their surrounding waters.

MATERIALS AND METHODS

We conducted four surveys that included at least one visit to 15 islands. Three of the trips were made during the rainy season (14–15 July 2010; 29 June–12 July 2011; and 26 June–2 July 2013), and one during the dry season (26–30 March 2012). Our trips were conducted on 27 days within a four-year period, with a total sampling effort of 522 person-hours that ranged from 3 to 123 person-hours depending on the size of the island (Table 1). On the final trip we did not find any species previously unknown from the islands, suggesting that all the species occurring on one or more islands are close to being recorded.

Table 1. Sampling effort over four years in person-hours for the 15 islands in the Golfo de Fonseca (see Table 3 for names of the islands).

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
2010					21						27					48
2011	3	5	10	15	59	38	52		5	11	80		8	6	18	310
2012					15			20		6	12	10		22	11	96
2013					27	8	3				4				26	68
Totals	3	5	10	15	122	46	55	20	5	17	123	10	8	28	55	522

We searched for amphibians and reptiles during the day and night on nine islands, but during the daytime only on: Isla de Las Almejas, because of its small size; Isla Comandante, because it is privately owned and the owner was not present at the time; Isla Conejo, because it is a Honduran Naval Base and permission was not available for night work; and Isla Sirena, because of risky access by boat during the night, as well as having to climb a steep rocky cliff that was dangerous to climb during the day (one of our group of four would not make the climb during the day). We list the localities, coordinates, and elevations of the sites we worked in Table 2.

Our survey techniques included daytime visual searches of all the available habitats, including potential hiding places (e.g., under rocks, logs, burrows, leaf litter, and other types of ground debris, and in tree holes), and nighttime visual searches that also included listening for frogs vocalizing. Three to five people, in one or two groups, searched the habitat at the same time. We collected most of the species at elevations from near sea level to about 30 m. One caecilian, however, was found under a rock at an elevation of 500 m, and several reptile species were collected on the ground at an elevation of 873 m at the summit of Isla del Tigre in the vicinity of the communications tower and associated buildings, as well as in stacked or scattered debris.

We euthanized all voucher specimens with a chlorotone solution, after which they were preserved in formalin and later transferred into 70% ethanol. We deposited the voucher specimens in the collections of the Universidad Nacional Autónoma de Honduras (UNAH), and the National Museum of Natural History, Washington, D.C. (USNM). Many of the animals encountered were not collected or were released where found, particularly if a voucher for that species already was available from the island. In Table 3 we list every species collected and the islands where they were found. In Table 4 we also include every species, but provide more precise locality data for some species on some of the larger islands, and the museum voucher numbers where known. In Table 4 we also indicate the higher-level taxonomy followed herein, including the order in which each species appears in our Taxonomic Section.

Table 2. Coordinates (in datum WGS 84) and elevations of various islands where collections were made.

Island	Coordinates	Comments
Isla de las Almejas	13°18.195'N, 87°35.983'W	center of island, near sea level
Isla Comandante	13°17.861'N, 87°37.845'W	highest point, elev. 10 m, center of island
Isla Comandante	13°17.847'N, 87°37.815'W	landing place of boat on beach
Isla Conejo	13°20.911'N, 87°44.598'W	beach
Isla Conejo	13°20.884'N, 87°44.585'W	elev. 33 m, at Honduran flag of Naval Base
Isla El Coyote	13°19.513'N, 87°43.269'W	elev. 37 m, highest point of ridge and island
Isla El Coyote	13°19.613'N, 87°43.257'W	beach
Isla Exposición	13°18.891'N, 87°40.447'W	Playona de Exposición, close to SE side of island
Isla Exposición	13°18.762'N, 87°40.845'W	elev. 95 m, ridge on SW part of island
Isla Exposición	13°18.673'N, 87°40.930'W	beach site on SW part of island
Isla Exposición	13°19.446'N, 87°40.396'W	elev. 90 m, ridge on N part, small dry streambed
Isla Exposición	13°19.826'N, 87°40.485'W	Punta El Molino, beach on N point of island
Isla Exposición	13°18.904'N, 87°40.449'W	elev. 3 m, and of trail from Playona de Exposición
Isla Garrobo	13°19.841'N, 87°42.452'W	elev. 170 m, highest cemetery, SW part of island
Isla Garrobo	13°19.986'N, 87°42.567'W	San Carlos, main dock of town
Isla Garrobo	13°20.002'N, 87°42.795'W	elev. 30 m, northern ridge
Isla Inglesera	13°18.853'N, 87°42.286'W	elev. 53 m, top of island
Isla Inglesera	13°18.893'N, 87°42.118'W	beach at dock of main campsite
Isla El Pacar	13°16.611'N, 87°39.875'W	beach on NE part of island
Isla El Pacar	13°16.603'N, 87°39.920'W	elev. 10 m, highest central point of island
Isla de Pájaros	13°18.180'N, 87°35.298'W	elev. 20 m, highest point of island
Isla Sirena	13°18.491'N, 87°42.050'W	elev. 25 m, highest point of island
Isla del Tigre	13°17.657'N, 87°38.827'W	Amapala, Hotel Mirador dock
Isla del Tigre	13°16.438'N, 87°38.283'W	elev. 783 m, summit of island
Isla del Tigre	13°15.328'N, 87°39.162'W	elev. 10 m, Playa Negra, SW part of island
Isla del Tigre	13°16.955'N, 87°39.353'W	elev. 10 m, Laguna de Agua
Isla Tigrino	13°21.272'N, 87°39.527'W	elev. 20 m, center of island
Isla de La Vaca	13°18.032'N, 87°35.804'W	elev. 20 m, cemetery at top of island
Isla de La Vaca	13°18.087'N, 87°35.823'W	beach at entrance of trail to cemetery
Isla Violín	13°19.339'N, 87°42.814'W	elev. 20 m, high central point of island
Isla Violín	13°19.388'N, 87°42.768'W	beach at NW point of island
Isla Zacate Grande	13°19.946'N, 87°39.393'W	near Punta Novillo
Isla Zacate Grande	13°19.315'N, 87°38.601'W	elev. 120 m, dry streambed
Isla Zacate Grande	13°18.854'N, 87°37.653'W	near sea level, Coyolitos

The capitalized color names and color codes (in parentheses) used for a few living reptile specimens are from Smithe (1975–1981). The abbreviations used are as follows: CL = carapace length; DOR = dead-on-road; SVL = snout–vent length; TAL = tail length; and TOL = total length. The common (or vernacular) names (in Spanish) used for the amphibians are from McCranie and Castañeda (2007), and those for the reptiles are used by people living on the islands or were adapted from Liner and Casas-Andreu (2008). We made exceptions to these names based on our experiences from years of fieldwork on the islands and on the Honduran mainland.

The ventral and subcaudal counts and TAL, TOL, and CL measurements are based on data of Honduran specimens taken by JRM, except for the data on the crocodile and marine turtles, for which we relied largely on the literature. JRM also wrote all the species descriptions, and is responsible for any errors therein.

Table 3. List of amphibians and reptiles currently known from each island included in this study. 1 = Isla de Las Almejas; 2 = Isla Comandante; 3 = Isla Conejo; 4 = Isla El Coyote; 5 = Isla Exposición; 6 = Isla Garrobo; 7 = Isla Inglesera; 8 = Isla El Pacar; 9 = Isla de Pájaros; 10 = Isla Sirena; 11 = Isla del Tigre; 12 = Isla Tigrito; 13 = Isla de La Vaca; 14 = Isla Violín; and 15 = Isla Zacate Grande. Species are listed in the order of appearance in the text (also see Table 4).

Species (45)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Class Amphibia (10)																
Caecilians (1)																
<i>Dermophis mexicanus</i>	—	—	—	—	X	—	X	—	—	—	X	—	—	—	—	3
Subtotals	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	3
Order Anura (9)																
<i>Incilius coccifer</i>	—	—	—	—	X	—	—	—	—	—	X	—	—	—	—	2
<i>Incilius luetkenii</i>	—	—	—	—	X	—	—	—	—	—	X	—	—	—	X	3
<i>Rhinella horribilis</i>	—	—	—	—	X	—	—	—	—	—	X	—	—	—	—	2
<i>Smilisca baudinii</i>	—	—	—	—	X	—	X	—	—	—	X	—	—	—	X	4
<i>Trachycephalus typhonius</i>	—	—	—	X	—	X	—	—	—	—	—	—	—	—	—	2
<i>Scinax staufferi</i>	—	—	—	—	X	—	—	—	—	—	X	—	—	—	X	3
<i>Engystomops pustulosus</i>	—	—	—	—	X	—	—	—	—	—	X	—	—	—	X	3
<i>Leptodactylus fragilis</i>	—	X	—	—	X	—	—	—	—	—	X	—	—	—	X	4
<i>Leptodactylus melanonotus</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	1
Subtotals	0	1	0	1	7	1	1	0	0	0	8	0	0	0	5	24
Class Reptilia (35)																
Lizards (14)																
<i>Coleonyx mitratus</i>	—	—	—	—	X	X	—	—	—	—	X	—	—	—	X	4
<i>Hemidactylus frenatus</i>	X	X	X	—	X	X	X	X	—	—	X	X	—	—	X	10
<i>Phyllodactylus tuberculatus</i>	X	X	X	X	X	X	X	X	X	—	X	X	X	X	X	14
<i>Gonatodes albogularis</i>	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	2
<i>Gymnophthalmus speciosus</i>	—	—	—	—	X	—	S	—	—	—	—	—	—	—	X	3
<i>Aspidoscelis deppii</i>	—	—	—	—	—	—	X	—	—	—	—	—	—	X	—	2
<i>Holcosus undulatus</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	X	2
<i>Norops wellbornae</i>	—	—	—	—	X	X	X	X	—	—	X	—	—	X	X	7
<i>Ctenosaura similis</i>	X	X	X	—	X	—	X	—	X	X	X	—	—	S	X	10
<i>Iguana iguana</i>	—	—	—	—	—	—	—	—	—	—	X	—	X	—	X	3
<i>Sceloporus squamosus</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	X	2
<i>Sceloporus variabilis</i>	—	—	—	—	—	—	—	—	—	—	X	X	—	—	X	3
<i>Marisora brachypoda</i>	—	—	—	—	X	X	X	—	X	—	X	—	—	—	X	6
<i>Mesoscincus managuae</i>	—	—	—	—	X	—	—	—	—	—	X	—	—	—	X	3
Subtotals	3	4	3	1	8	5	7	3	3	1	12	3	2	4	12	71
Snakes (15)																
<i>Drymarchon melanurus</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	1
<i>Leptodymus pulcherrimus</i>	—	X	—	—	—	—	—	—	—	—	—	—	—	—	X	2
<i>Oxybelis aeneus</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	X	2
<i>Stenorrhina freminvillii</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	1
<i>Tantilla armillata</i>	—	—	—	—	—	—	—	X	—	—	X	—	—	—	—	1
<i>Tantilla vermiformis</i>	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	1

<i>Trimorphodon quadruplex</i>	—	—	—	—	X	—	X	X	—	—	—	—	X	X	—	5
<i>Conophis lineatus</i>	—	—	—	—	X	—	—	—	—	—	—	—	—	—	X	2
<i>Enulius flavitorques</i>	—	—	—	—	X	—	X	—	—	—	—	—	—	—	—	2
<i>Leptodeira rhombifera</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	1
<i>Hydrophis platurus</i>	—	—	—	—	—	—	—	—	—	S	S	—	—	—	—	2
<i>Micrurus nigrocinctus</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	X	1
<i>Agkistrodon howardgloydi</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	X	1
<i>Boa imperator</i>	—	—	—	—	X	X	X	X	—	X	X	—	—	—	X	7
<i>Epictia ater</i>	—	—	X	—	—	—	X	—	—	—	—	—	—	—	X	3
Subtotals	0	1	1	0	5	1	4	3	0	2	7	0	1	1	7	33
Crocodylians (1)																
<i>Crocodylus acutus</i>	—	—	S	—	—	—	—	—	—	—	S	—	—	—	—	2
Subtotals	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
Turtles (5)																
<i>Chelonia mydas</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0
<i>Eretmochelys imbricata</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0
<i>Lepidochelys olivacea</i>	—	—	—	—	—	X	S	—	—	S	—	—	—	—	—	3
<i>Trachemys emolli</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	1
<i>Rhinoclemmys pulcherrima</i>	—	X	—	—	X	X	X	—	—	—	X	—	—	—	X	6
Subtotals	0	1	0	0	1	2	2	0	0	1	2	0	0	0	1	10
Totals	3	7	5	2	22	9	15	6	3	4	31	3	3	5	25	143

Table 4. Locality records for taxa in the Golfo de Fonseca islands in the same order of appearance as in the text. Upper-level taxonomy, superfamily, family, subfamily, genera, and species names are provided in this table to help the reader locate a category of interest.

Class Amphibia (10)

Order Gymnophiona (1)

Family Dermophiidae

Genus *Dermophis*

Dermophis mexicanus.—Isla Exposición, opposite of Isla Inglesera, UNAH (1); Isla Inglesera, USNM 580062–64; Isla del Tigre, Amapala, UNAH (2), USNM 51380; Isla del Tigre, Laguna de Agua, USNM 580731.

Order Anura (9)

Superfamily Hyloidea

Family Bufonidae

Genus *Incilius*

Incilius coccifer.—Isla Exposición, Punta El Molino, USNM 589208; Isla del Tigre, Laguna de Agua, UNAH 5235, USNM 589209–10.

Incilius luetkenii.—Isla Exposición, Playona Exposición, UNAH (3), USNM 581243–44; Isla Exposición, Punta Copalillo, USNM 589211; Isla Exposición, Punta El Molino, UNAH (2), USNM 580236 (tadpoles), 589212–13; Isla del Tigre, Amapala, MCZ A-26447–49, 28500 (skeleton); Isla del Tigre, at summit, UNAH (1); Isla del Tigre, near Playa Negra, UNAH (1), USNM 581241–42; Isla Zacate Grande, vicinity of Coyolitos, UNAH (2); Isla Zacate Grande, Punta Novillo, UNAH (1), USNM 589214–15.

Genus *Rhinella*

Rhinella horribilis.—Isla Exposición, Punta El Molino, USNM 580812; Isla del Tigre, Laguna de Agua, UNAH 5262.

Family Hylidae

Subfamily Hylinae

Genus *Smilisca*

Smilisca baudinii.—Isla Exposición, Playona Exposición, UNAH (1), USNM 580138–39, 580242 (tadpoles); Isla Exposición, Punta El Molino, UNAH (4), USNM 580243 (tadpoles), 580755; Isla Inglesera, UNAH (1); Isla del Tigre, Amapala, UNAH (1); Isla del Tigre, near Playa Negra, UNAH (1); Isla Zacate Grande, Punta Novillo, UNAH (2), USNM 580755.

Subfamily Lophyohylinae

Genus *Trachycephalus*

Trachycephalus typhonius.—Isla El Coyote, USNM 580151; Isla Garrobo, near San Carlos, USNM 579695.

Subfamily Scinaxinae

Genus *Scinax*

Scinax staufferi.—Isla Exposición, Punta El Molino, UNAH (4), USNM 580124–26; Isla del Tigre, UNAH (1); Isla Zacate Grande, Punta Novillo, UNAH (1).

Family Leptodactylidae

Subfamily Leiuperinae

Genus *Engystomops*

Engystomops pustulosus.—Isla Exposición, Punta El Molino, UNAH (1), USNM 580219–22; Isla Exposición, W side, UNAH (1); Isla del Tigre, Laguna de Agua, SDSNH 72877–78; Isla del Tigre, near Playa Negra, USNM 580215–16; Isla Zacate Grande, Punta Novillo, USNM 580217–18.

Subfamily Leptodactylinae

Genus *Leptodactylus*

Leptodactylus fragilis.—Isla Comandante, USNM 580224; Isla Exposición, Punta El Molino, UNAH (1), USNM 580225; Isla del Tigre, Laguna de Agua, UNAH (2), USNM 580743–44; Isla Zacate Grande, Punta Novillo, UNAH (1).

Leptodactylus melanonotus.—Isla del Tigre, Laguna de Agua, SDSNH 72868–69, UNAH (5), USNM 580230, 580749–52; Isla del Tigre, near Playa Negra, USNM 580229.

Class Reptilia (35)

Order Squamata (29)

Lizards (14)

Infraorder Gekkomorpha

Superfamily Eublepharoidea

Family Eublepharidae

Genus *Coleonyx*

Coleonyx mitratus.—Isla Exposición, Playona Exposición, USNM 579581; Isla Exposición, Punta Copalillo, UNAH (1); Isla Garrobo, near San Carlos, UNAH (1), USNM 580245; Isla del Tigre, near Amapala, UNAH (1); Isla Zacate Grande, Punta Novillo, UNAH (2), USNM 580246.

Superfamily Gekkonoidea

Family Gekkonidae

Genus *Hemidactylus*

Hemidactylus frenatus.—Isla de Las Almejas, USNM 580256–58; Isla Comandante, UNAH (1), USNM 580259–61; Isla Conejo, UNAH (1); Isla Exposición, Playona Exposición, UNAH (6), USNM 565828–29, 580248–49; Isla Garrobo, San Carlos, UNAH (6), USNM 580251–55; Isla Inglesera, UNAH (1), USNM 580247, 580250; Isla El Pacar, USNM 580767–68; Isla del Tigre, Amapala, USNM 565827; Isla Tigrito, USNM 580769–70; Isla Zacate Grande, vicinity of Coyolitos, UNAH (1); Isla Zacate Grande, Punta Novillo, UNAH (2), USNM 580262–63.

Family Phyllodactylidae

Genus *Phyllodactylus*

Phyllodactylus tuberculatus.—Isla de Las Almejas, USNM 580286; Isla Comandante, UNAH (1); Isla Conejo, UNAH (3), USNM 580267–69; Isla El Coyote, UNAH (3), USNM 580279–82; Isla Exposición, Playona Exposición, UNAH (2), USNM 579601–02; Isla Exposición, Punta El Molino, UNAH (3), USNM 580937; Isla Garrobo, San Carlos, UNAH (1), USNM 580283–84; Isla Inglesera, USNM 580273–77; Isla El Pacar, UNAH (1), USNM 580935–36; Isla de Pájaros, UNAH (2); Isla del Tigre, near Amapala, UNAH (2), USNM 580270–72; Isla del Tigre, Amapala, MCZ R-49748–50, ZMH (no number given) (Dixon, 1964); Isla del Tigre, Laguna de Agua, SDSNH 72762–64, UNAH (1), USNM 580278; Isla Tigrito, UNAH (1), USNM 580938; Isla de La Vaca, UNAH (5), USNM 580285; Isla Violín, UNAH (4), USNM 580934; Isla Zacate Grande, Punta Novillo, UNAH (5); Isla Zacate Grande, KU 194256–57, LSUMZ 36580–81.

Family Sphaerodactylidae

Genus *Gonatodes*

Gonatodes albogularis.—Isla Comandante, UNAH (1), USNM 580292–93; Isla del Tigre, near Amapala, USNM 579588–89; Isla del Tigre, Amapala, MCZ R-49945–47, 163583–600, UNAH (1), USNM 580291.

Infraorder Gymniformata **McCranie, new Infraorder name proposed herein**

Superfamily Gymnophthalmoidea

Family Gymnophthalmidae

Genus *Gymnophthalmus*

Gymnophthalmus speciosus.—Isla Exposición, Playona Exposición, UNAH (1), USNM 589159; Isla Inglesera (sight record); Isla Zacate Grande, Punta El Molino, USNM 589160; Isla Zacate Grande, LSUMZ 36579.

Family Teiidae

Genus *Aspidoscelis*

Aspidoscelis deppii.—Isla Inglesera, UNAH (2), USNM 580384–85; Isla Violín, USNM 580918.

Genus *Holcosus*

Holcosus undulatus.—Isla del Tigre, at summit, USNM 579690; Isla Zacate Grande, vicinity of Coyolitos, UNAH (2).

Infraorder Neoiguania

Superfamily Iguanoidea

Family Dactyloidae

Genus *Norops*

Norops wellbornae.—Isla Exposición, opposite side of Isla Inglesera, UNAH (2); Isla Exposición, Playona Exposición, SMF 91732, USNM 580720; Isla Exposición, Punta El Molino, UNAH (1), USNM 580718–19, 580299; Isla Garrobo, near San Carlos, UNAH (1), USNM 580296–98; Isla Inglesera, UNAH (2), USNM 580295; Isla El Pacar, USNM 580713–17; Isla del Tigre, near Amapala, UNAH (2); Isla del Tigre, at summit, USNM 580294; Isla del Tigre, SDSNH 72751; Isla Violín, USNM 580710–12; Isla Zacate Grande, vicinity of Coyolitos, UNAH (4); Isla Zacate Grande, Punta Novillo, UNAH (1); Isla Zacate Grande, KU 194287.

Family Iguanidae

Genus *Ctenosaura*

Ctenosaura similis.—Isla de Las Almejas, USNM 580371; Isla Comandante, UNAH (1), USNM 580372; Isla Conejo, USNM 580369–70; Isla Exposición, Playona Exposición, UNAH (1), USNM 579556–57, 580813; Isla Inglesera, USNM 580368; Isla de Pájaros, USNM 580390; Isla Sirena, UNAH (2), USNM 580391, 581892; Isla del Tigre, near Amapala, USNM 579558–59; Isla del Tigre, Amapala, ZMH 3546 (Bailey, 1928); Isla del Tigre, Laguna de Agua, SDSNH 72724; Isla de Violín (sight record); Isla Zacate Grande, MSUM 4654–55, 4657–59, USNM 243391 (formerly MSUM 4656); Isla Zacate Grande, vicinity of Coyolitos, UNAH (3); Isla Zacate Grande, Punta Novillo, UNAH (1), USNM 580373.

Genus *Iguana*

Iguana iguana.—Isla del Tigre (Lovich et al. 2006); Isla de La Vaca, UNAH 5653; Isla Zacate Grande, vicinity of Coyolitos, UNAH (1).

Family Phrynosomatidae

Genus *Sceloporus*

Sceloporus squamosus.—Isla del Tigre, at summit, UNAH (3), USNM 580374–75; Isla del Tigre, SDSNH 72775–78; Isla Zacate Grande, KU 194329, LSUMZ 36583.

Sceloporus variabilis.—Isla del Tigre, at summit, USNM 580376–77; Isla del Tigre, Playa Negra, SDSNH 72794; Isla Tigrito, UNAH (1), USNM 580777–78; Isla Zacate Grande, Punta Novillo, UNAH (1), USNM 580378; Isla Zacate Grande, vicinity of Coyolitos, UNAH (4); Isla Zacate Grande, KU 194334, LSUMZ 36582.

Infraorder Scincomorpha

Superfamily Lygosomoidea

Family Mabuyidae

Genus *Marisora*

Marisora brachypoda.—Isla Exposición, Playona Exposición, USNM 589196; Isla Exposición, Punta El Molino, UNAH (1), USNM 589197; Isla Garrobo, USNM 589194–95; Isla Inglesera, UNAH (1); Isla de Pájaros, USNM 589192; Isla del Tigre, near Amapala, UNAH (1); Isla del Tigre, at summit, UNAH (1), USNM 589193; Isla del Tigre, Playa Negra, SDSNH 72727; Isla Zacate Grande, Punta Novillo, UNAH (1), USNM 589198; Isla Zacate Grande, KU 194267, LSUMZ 36578.

Superfamily Scincoidea

Family Scincidae

Genus *Mesoscincus*

Mesoscincus managuae.—Isla Exposición, Playona Exposición, USNM 565830–31; Isla Exposición, Punta Copalillo, UNAH (1), USNM 580381; Isla del Tigre, near Amapala, UNAH (1); Isla del Tigre, at summit, USNM 580379–80; Isla Zacate Grande, Punta Novillo, UNAH (6), USNM 580382–83.

Snakes (15)

Infraorder Alethinophidia (Caenophidia)

Family Colubridae

Genus *Drymarchon*

Drymarchon melanurus.—Isla del Tigre, near Amapala, USNM 565805.

Genus *Leptodrymus*

Leptodrymus pulcherrimus.—Isla Comandante, USNM 579687; Isla Zacate Grande, vicinity of Coyolitos, UNAH (1).

Genus *Oxybelis*

Oxybelis aeneus.—Isla del Tigre, Playa Negra, UNAH 5267; Isla Zacate Grande, vicinity of Coyolitos, UNAH (1); Isla Zacate Grande, near Punta Novillo, UNAH (1); Isla Zacate Grande, LSUMZ 36586.

Genus *Stenorrhina*

Stenorrhina freminvillii.—Isla del Tigre, Amapala, USNM 580344.

Genus *Tantilla*

Tantilla armillata.—Isla El Pacar, USNM 580809; Isla del Tigre, CM 158367.

Tantilla vermiformis.—Isla Exposición, Punta Copalillo, USNM 579681.

Genus *Trimorphodon*

Trimorphodon quadruplex.—Isla Exposición, opposite side of Isla Inglesera, UNAH (3); Isla Exposición, Playona Exposición, UNAH (1); Isla Exposición, Punta El Molino, UNAH (1), USNM 580695–96; Isla Inglesera, UNAH (1), USNM 580348–49; Isla El Pacar, USNM 580694; Isla de La Vaca, UNAH (1), USNM 580350; Isla Violín, UNAH (1), USNM 580693.

Family Dipsadidae

Genus *Conophis*

Conophis lineatus.—Isla Exposición, Punta Molina, UNAH (1); Isla Exposición, W side, USNM 580329; Isla Zacate Grande, near Coyolito (Lovich et al., 2006); Isla Zacate Grande, Punta Novillo, USNM 580328; Isla Zacate Grande, LSUMZ 36595, 36598.

Genus *Enulius*

Enulius flavitorques.—Isla Exposición, Punta Copalillo, UNAH (1), USNM 579683; Isla Inglesera, UNAH (1), USNM 579684–86.

Genus *Leptodeira*

Leptodeira rhombifera.—Isla del Tigre, Laguna de Agua, UNAH 5279 + 1 untagged, USNM 580800–01.

Family Elapidae

Genus *Hydrophis*

Hydrophis platurus.—Isla Sirena, offshore sight record (JRM, pers. observ.); Isla del Tigre, live specimen at UNAH from waters near island.

Genus *Micrurus*

Micrurus nigrocinctus.—Isla Zacate Grande, on road N of Coyolito, USNM 561079.

Family Viperidae

Genus *Agkistrodon*

Agkistrodon howardgloydi.—Isla Zacate Grande, UNAH 5516 + two unnumbered.

Infraorder Alethinophidia (Henophidia)

Family Boidae

Genus *Boa*

Boa imperator.—Isla Exposición, Playona Exposición, UNAH 5587; Isla Garrobo, San Carlos, UNAH (1); Isla Inglesera, UNAH (1); Isla El Pacar, UNAH (1); Isla Sirena, UNAH (1); Isla del Tigre, Amapala, UNAH (1); Isla del Tigre, near summit, UNAH (1); Isla del Tigre, Laguna de Agua, UNAH 5273; Isla Zacate Grande, near Coyolitos (Lovich et al., 2006).

Infraorder Scolecophidia

Family Leptotyphlopidae

Genus *Epictia*

Epictia ater.—Isla Conejo, UNAH (1), USNM 580323; Isla Inglesera, USNM 580322; Isla Zacate Grande, KU 194335, LSUMZ 36328.

Order Crocodylia (1)

Superfamily Crocodyloidea

Family Crocodylidae

Genus *Crocodylus*

Crocodylus acutus.—Isla Conejo, pers. comm. of Naval Officer at Base 6 July 2011; Isla del Tigre, Laguna de Agua (Lovich, 2006; as *Caiman crocodilus*), also pers. comm. from Naval Officer at Base, 27 March 2012.

Order Testudinata (5)

Infraorder Cryptodira

Superfamily Chelonioidea

Family Cheloniidae

Genus *Chelonia*

Chelonia mydas.—Golfo de Fonseca near San Lorenzo, MCZ R-49401–05, 145747–49 (all heads only).

Genus *Eretmochelys*

Eretmochelys imbricata.—Golfo de Fonseca near San Lorenzo, MCZ R-49406–09 (all heads only).

Genus *Lepidochelys*

Lepidochelys olivacea.—Golfo de Fonseca near Isla Inglasera (personal sight record of authors); Golfo de Fonseca near Isla de Sirena (personal sight record of authors); Isla Garrobo, UNAH 5654 (egg shell).

Superfamily Testudinoidea

Family Emydidae

Genus *Trachemys*

Trachemys emolli.—Isla del Tigre, Laguna de Agua, UNAH (1), USNM 581903 (both shells only).

Family Geoemydidae

Genus *Rhinoclemmys*

Rhinoclemmys pulcherrima.—Isla Comandante, USNM 580358; Isla Exposición, Playona Exposición, USNM 579655; Isla Exposición, Punta El Molino, UNAH (1), USNM 580359, 580362; Isla Exposición, W side, USNM 580359; Isla Garrobo, near San Carlos, USNM 580360; Isla Inglesera, USNM 580762; Isla del Tigre, Amapala, USNM 580761; Isla Zacate Grande, Punta Novillo, USNM 580361; Isla Zacate Grande, LSUMZ 36599.

THE ENVIRONMENT

The islands in the Golfo de Fonseca are located on the Pacific versant of southern Honduras (Map 1), where adjacent projections of land in El Salvador and Nicaragua combine to form a gulf. Pineda Portillo (1997) provided the total area for four of the islands where we worked, as follows: Isla Exposición = 2.5 km²; Isla Garrobo = 0.8 km²; Isla del Tigre = 23.7 km²; and Isla Zacate Grande = 54.3 km². The remaining islands where we worked are much smaller, and Pineda Portillo (1997) did not indicate their sizes. ICF (2010), however, indicated the total land areas of three smaller islands as: Isla Inglesera 0.17 km²; Isla Comandante 0.31 km²; and Isla El Pacar 0.29 km².

Climate: “The two most important elements affecting climate in the tropics are air temperature and amount of precipitation. Surface air temperature in the tropics is largely correlated with altitude” (McCranie, 2011: 15 and references therein). Because the islands in the Golfo de Fonseca lie almost entirely at low elevations (the highest elevation is 783 m, on the cone-shaped summit of Isla del Tigre), the temperatures are hot; this region might be the warmest in Honduras. The mean annual temperature is about 28°C along the Pacific coast, with the maximum high temperature about 40°C in the southern lowlands of the department of Valle. The mean annual precipitation is 1,400–1,600 mm, with June and September the rainiest months. The dry season is long and generally lasts from December through May, and during this time there is little precipitation (94% of the rainfall occurs during the rainy season; see McCranie, 2011: 16 and references therein).

Forest types: Holdridge (1967) called the general forest formation on these islands Lowland Dry Forest, but substantial variation is evident in the vegetation largely as a result of deforestation. Carr (1950) classified the forests of the Fonseca islands as Sea-Breeze Scrub Forest, but little or none of that forest remains today. The two largest islands are extinct volcanoes (Isla del Tigre and Isla Zacate Grande; McCranie, 2011: 10, and references therein; Figs. 1, 2), where much, if not all, of the original forest has been destroyed. The slopes on Isla del Tigre (Fig. 3) and Isla Zacate Grande contain some old secondary growth forest, and a small portion of Isla Exposición contains some altered old forest (Fig. 4). Several of the smaller islands have been burned periodically over the years (see *Ctenosaura* section) and no trees remain, only the regrowth of tall grass with saw-like edges (Fig. 5). Parts of Isla Exposición contain an abundance of stinging nettle plants, and despite our efforts to avoid them while walking in those areas, they left us itching and with painful rashes for days. Relatively large areas of some islands have been converted to crop fields and pastureland. In any given locality, dramatic changes in the vegetation are evident between the rainy and dry seasons (Figs. 6–9).

The Fonseca islands are considered a National Park (Parque Nacional Marino Golfo de Fonseca), and Isla del Tigre an area of Multiple Use (Área de Uso Múltiple), in which the upper 200 m of the summit (783 m) have been recommended as a refuge (Cruz, 2008). Isla Exposición was noted as a National Park (Anonymous, 2006), but not included in Cruz (2008); nonetheless, people we spoke with on that and the surrounding islands were unaware that

a park even existed. In addition, personnel at the ICF (Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre, Tegucigalpa, Honduras) apparently are not interested in enforcing laws dictated for protected areas, despite the report they prepared on these islands (ICF, 2010).



Fig. 1. A view of the volcanic Isla del Tigre during the rainy season. Photograph taken on 29 June 2011.

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Fig. 2. A view of the volcanic Isla Zacate Grande during the rainy season. Photograph taken on 28 June 2013.

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Fig. 3. Old second growth forest on Isla del Tigre during the rainy season. Photograph taken on 30 June 2011.  © Alexander Gutsche




Fig. 4. Old second growth forest on Isla Exposición during the rainy season. Photograph taken on 3 July 2011.  © Alexander Gutsche




Fig. 5. Regularly burned dry forest on Isla Violín during the dry season. Photograph taken on 26 March 2012.  © Alexander Gutsche




Fig. 6. A view of Isla Sirena during the rainy season. Photograph taken on 2 July 2011.  © Alexander Gutsche



Fig. 7. A similar view of Isla Sirena during the dry season. Photograph taken on 28 March 2012.


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Fig. 8. A rain-filled pond during the rainy season on the north point of Isla Exposición, the site of breeding colonies of *Incilius luetkenii*, *Smilisca baudinii*, *Scinax staufferi*, and *Leptodactylus fragilis*. Photograph taken on 12 July 2011.

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Fig. 9. The same view as in Fig. 8 on the north point of Isla Exposición during the dry season, when no anurans were found. Photograph taken on 30 March 2012.  © Alexander Gutsche

TAXONOMIC SECTION

Class Amphibia Macleay (1821: 263)

Herpetologists study members of the classes Amphibia and Reptilia. Both groups are tetrapod vertebrates, animals with a vertebral column and lateral appendages for locomotion on land and in water (except for caecilians, amphisbaenians, snakes, and some lizards in the case of lateral appendages). Also, except for the caecilian, all amphibians on the Fonseca islands are four-limbed. Amphibians represent a transitional group in the evolution of vertebrate life from water onto land. Amphibians are tetrapods, but not amniotes, and as adults they can live on land (at least in moist conditions), but plesiomorphically return to water to reproduce. In many instances they undergo a biphasic life cycle, in which the stage hatching from the egg is a larva, a non-sexual feeding stage typically living in water, which then metamorphoses into a small replica of the adult. The metamorphosed amphibian typically lives on land or is semi-aquatic.

Three orders of living amphibians are recognized: the caecilians (Order Gymnophiona), the salamanders (Order Caudata), and the anurans (Order Anura). Salamanders are not present on the Fonseca islands (see Species Deleted from the Fonseca Island Herpetofauna), but are well represented on the Honduran mainland.

Order Gymnophiona Müller (1832: 198)

A single species of caecilian is known from the Fonseca islands; two species in two genera have been recorded in all of Honduras (McCranie, 2015: 363). Caecilians are legless, worm-like burrowing (Fonseca island and Honduran species) or aquatic amphibians, whose bodies are encircled by a series of folds and annuli delimited by grooves or furrows. Casually observed, these amphibians could be mistaken for large earthworms, although a closer examination will reveal a jawed mouth, evidence of an eye (covered with skin in Fonseca island and Honduran species), and the lack of a clitellum (swollen region) typical of earthworms.

Family Dermophiidae Taylor (1969: 303)

Only one of the two genera of Honduran caecilians in this family (McCranie, 2015: 363) is known from the Fonseca islands. These fossorial or semi-fossorial caecilians lack limbs and a tail, and their mouth is recessed beneath the snout.

Genus *Dermophis* Peters (1880: 937)

Dermophis mexicanus (A. M. C. Duméril and Bibron, 1841: 284)

Common name: Culebra de Dos Cabezas.

Description: *Dermophis mexicanus* is an elongate caecilian that reaches a maximum TOL of 600 mm (the longest Honduran specimen is 545 mm). The body is encircled by a series of folds, separated by 94–112 primary annular grooves that extend from the posterior of the head to the posterior end of the body; 35–88 secondary grooves are present, beginning on primary folds 25–63, with the 2nd to 6th nearest the cloaca completely encircling the body; 5–8 postcloacal annuli are present on each side; the head is the same diameter as the body, but distinguishable from the posterior end by the presence of a distinct, recessed mouth supported by jaws with teeth; the snout projects well beyond the mouth and lower jaw; the eye lies within a circular socket covered with skin, but is clearly visible; the nostril is situated just posterior to the anterior end of the head; a sensory tentacle is located within the tentacular aperture, situated between the nostril and eye; and the tentacular aperture is slightly closer to the eye socket than the nostril, just below the lower level of the nostril. The general color in life is dark gray dorsally and lavender ventrally, and the annuli are dark gray.

Similar species: *Dermophis mexicanus* is unique among amphibians on the Fonseca islands, because it lacks limbs and contains body grooves and annuli.

General geographic distribution: *Dermophis mexicanus* occurs at low and moderate elevations on the Atlantic versant from south-central Veracruz, Mexico, to northwestern Honduras, and on the Pacific versant from the Isthmus of Tehuantepec region, Oaxaca, Mexico, to western Nicaragua. It also occurs on the Atlantic versant in southwestern Nicaragua.

Natural history comments: *Dermophis mexicanus* is a fossorial or semi-fossorial amphibian that is nocturnal when it surfaces. We found some individuals in moist conditions under logs, rocks, and other ground debris. One was lying fully exposed at night in serpentine fashion on a group of tree limbs above the water line in a concrete pit at Laguna de Agua on Isla del Tigre; apparently it had become trapped in the pit. We rescued two others from an open well with brackish water on Isla Inglesera, and released them about 10 m from the well. We also found this species under rocks located surprisingly close to the sea, barely above the high-tide mark.

Order Anura Fischer (1813: 58)

Nine named species of anurans included in one superfamily, three families, five subfamilies, and seven genera are known from the Golfo de Fonseca islands. In contrast, 97 named species in four superfamilies and nine families, 13 subfamilies, and 34 genera are known from all of Honduras (McCranie, 2015: 354; Duellman et al., 2016). Anurans are four-limbed, with the hind limbs longer and larger than the forelimbs, a specialization for a jumping or saltational mode of locomotion. Adult anurans lack a tail. Many anurans, including all the species on the Fonseca islands, undergo a larval stage known as a tadpole. Some families on the Honduran mainland, however, undergo direct development and consequently hatch from eggs as miniatures of the adults.

Superfamily Hyloidea Rafinesque (1815: 78)

Twenty-six genera, 57 named species, in five families, and eight subfamilies are known from all of Honduras (McCranie, 2015: 356; Duellman et al., 2016), with three families, three subfamilies, seven genera, and nine named species occurring on these islands. All anurans on the Golfo de Fonseca islands are classified in this superfamily (McCranie, 2015: 356; Duellman et al., 2016).

Family Bufonidae Gray (1825: 214)

Members of this family from the Fonseca islands are the only known anurans in the entire country characterized by the presence of well-developed parotoid glands and cranial crests, and the absence of maxillary teeth. Two genera containing three named species occur on the Fonseca islands, with four genera and 10 named species occurring in all of Honduras (McCranie, 2015: 356).

Genus *Incilius* Cope (1863: 50)

Two named species in this genus are known from the Fonseca islands, with seven named species occurring in all of Honduras (McCranie, 2015: 356).

Incilius coccifer (Cope, 1866b: 130)

Common name: Sapo de Parótidas Ovaladas.

Description: *Incilius coccifer* is a large toad (SVL to 69 mm in males, and to 99 mm in females in Honduran specimens, although the maximum size rangewide provided in a recent revision was given as 62 and 64 [on different pages of the same publication] mm in males, and 82 mm in females) with well-developed cranial crests (including parietal crests) and round to ovoid parotoid glands. The parotoid glands are similar in size or larger than the upper eyelids, and do not extend posterior to the level of the axilla; a unilateral vocal slit and a single, median, subgular vocal sac usually are present in males; the tympanum is distinct to prominent; maxillary teeth are absent; a row of distinctly enlarged dorsolateral tubercles is absent, and all the dorsolateral tubercles are subequal in size; the toe tips are not expanded and lack a digital groove; an inner tarsal fold is absent, but numerous, distinct supernumerary tubercles are present; finger webbing is absent; the toes are moderately webbed (the modal webbing formula is I 1–2 II 1–3 III 2–3½ IV 3½–2 V); the 1st finger is longer than the 2nd; the dorsal and ventral surfaces are strongly tuberculate, with many of the tubercles spiculate. The general dorsal ground color is dark brown to black; a cream to pale yellow middorsal stripe extends from the tip of snout to the cloaca; a pale brown interocular bar is present, bordered anteriorly and posteriorly by dark brown to black; the parotoid glands are yellowish brown to grayish brown; and the darkly pigmented *m. interhyoideus* is visible through the skin on the throat of breeding males.

Similar species: On the Fonseca islands, only *Incilius luetkenii* and possibly juvenile *Rhinella horribilis* could be confused with *I. coccifer*. In *I. luetkenii*, the parotoid glands are much smaller than the upper eyelids, the parietal crests are weakly to moderately developed, the interocular region usually is unicolor, and the species attains a slightly larger size (SVL to 96 mm in males, and to 107 mm in females). Also, the dorsal surface of male *I. luetkenii* tends to be yellowish green in life. In *Rhinella horribilis*, very large parotoid glands extend posteriorly well onto the body, an inner tarsal fold is present, and the species attains a large to very large size (SVL to 144 mm in Honduran males, and to at least 200 mm in females). The only remaining anuran on the islands with parotoid glands is *Engystomops pustulosus*, a species with a short and somewhat pointed narrow snout, a distinct inner tarsal tubercle, and attains a maximum SVL of only 35 mm.

General geographic distribution: *Incilius coccifer* occurs at low, moderate, and intermediate elevations on the Pacific versant from Michoacán, Mexico, to central Panama; it also is found on the Atlantic versant in northeastern Honduras, and in several interior valleys and their surrounding mountains in Honduras and Guatemala.

Natural history comments: During the rainy season, *Incilius coccifer* breeds at night around temporary ponds, including in edificarian situations. This species is uncommon on the Fonseca islands, in stark contrast to the many localities with robust populations on the mainland. We found a lone adult *I. coccifer* active at night on the ground among more than 100 *I. luetkenii* near a temporary pond being used as a breeding site. We also found a few individuals around a permanent lagoon on a rainy night. JRM believes that *I. luetkenii* is cross-breeding with *I. coccifer* on these islands, and thus replacing the latter.

Remarks: McCranie (2015: 356–357) discussed a confusing and contradictory taxonomy proposed several times for the *Incilius coccifer* species complex, and presented a brief discussion of some major flaws in those studies. The most outstanding problem in those studies (Mendelson et al., 2005, 2011) is that their diagnoses of *I. coccifer* and *I. porteri* do not agree with the characters found in Honduran populations the authors assigned to those species. Lovich et al. (2010: 113) reported *I. coccifer* from Isla del Tigre, at Laguna de Agua on the Naval Base.

***Incilius luetkenii* (Boulenger, 1891: 455)**

Common name: Sapo de Parótidas Pequeñas.

Description: *Incilius luetkenii* is a large toad (SVL to 96 mm in males, and to 107 mm in females rangewide; SVL to 85 mm in Honduran males, and to 91 mm in females) with well-developed cranial crests (except for weakly to moderately developed parietal crests), and usually elongately ovoid or ovoid (occasionally subtriangular) parotoid glands. The parotoid glands are much smaller than the upper eyelids, and do not extend posterior to the level of the axilla; a unilateral vocal slit usually is present in males, in addition to a single, median, subgular vocal sac; the tympanum is prominent; maxillary teeth are absent; a row of distinctly enlarged dorsolateral tubercles is absent; the toe tips are not expanded, and lack a digital groove; an inner tarsal fold is absent; numerous distinct supernumerary tubercles are present; finger webbing is absent; the toes are moderately webbed (the modal webbing formula is I 1–2 II 1–3 III 2–3½ IV 3½–2 V); the 1st finger is longer than the 2nd, and the dorsal and ventral surfaces are strongly tuberculate, with many of the tubercles spiculate. The general dorsal ground color is yellowish green in males, and brown with some red-tipped tubercles in females; a pale yellow, irregular, middorsal stripe is present in some females; the interorbital region usually is unicolor, but a thin or weakly-developed dark brown interorbital bar or spot is present in some females; a heavy layer of keratin usually is present on the dorsal surfaces of the cranial crests; and the *m. interhyoideus* usually is pigmented in breeding males.

Similar species: On the Fonseca islands, only *Incilius coccifer* and possibly juvenile *Rhinella horribilis* could be confused with *I. luetkenii*. In *I. coccifer*, the parotoid glands are larger than or equal in size to the upper eyelids, a distinct pale interorbital bar and a distinct parietal crest are present, and the species is smaller in size (SVL to 69 mm in males, and to 99 mm in females). The parotoid glands in *R. horribilis* are very large and extend posteriorly well onto the body, an inner tarsal fold is present, and the species attains a large to very large size (SVL to 144 mm in Honduran males, and to at least 200 mm in females). See “Similar species” in *I. coccifer* account for comments on *Engystomops pustulosus*.

General geographic distribution: *Incilius luetkenii* occurs at low and moderate elevations on the Pacific versant from southeastern Guatemala to northwestern Costa Rica, and on the Atlantic versant in several interior valleys in Honduras and Guatemala.

Natural history comments: During the rainy season, *Incilius luetkenii* is a nocturnal, explosive breeder around temporary ponds and inundated areas, and on the islands can be a common species in some edificarian situations. We saw numerous individuals on the ground on rainy nights near breeding sites, including males calling from along the edges of temporary rain-filled ponds and inundated areas. This species is much more abundant on the islands than *I. coccifer*, but is difficult to find during the height of the dry season.

Remarks: Gutsche et al. (2015a) recorded the presence of the chytrid fungus, *Batrachochytrium dendrobatidis*, in one of three specimens of *Incilius luetkenii* from Isla del Tigre they tested for the infection (also see Gutsche et al., 2015b).

Genus *Rhinella* Fitzinger (1826: 39)

A single genus with one named species occurs on the Fonseca islands, and in all of Honduras (McCranie, 2015: 357; as *R. marina* [Linnaeus, 1758: 211]). In Honduras, this species is defined by the presence of very large parotoid glands, the very large size of adults, and the presence of a distinct inner tarsal fold.

***Rhinella horribilis* (Wiegmann, 1833: col. 654)**

Common names: Sapo Grande, Sapo de Servicio.

Description: *Rhinella horribilis* is a very large toad (SVL to 144 mm in Honduran males, and to at least 200 mm in females; rangewide, it reaches a larger size) with cranial crests and very large, swollen, somewhat subtriangular parotoid glands that extend well onto the body. The tympanum is prominent; maxillary teeth are absent; paired vocal slits and a single, median, subgular vocal sac are present in males; a row of enlarged dorsolateral tubercles is absent; a distinct inner tarsal fold is present; distinct supernumerary tubercles are present; the toe tips are not expanded and lack digital grooves; finger webbing is absent; the toes are moderately webbed (the modal webbing formula is I 1–2⁺ II 1–3 III 2–3½ IV 3½–2 V); the 1st finger is longer than the 2nd; and numerous tubercles with dark

brown to black keratinized tips are present on the dorsal surfaces. The general dorsal ground color ranges from pale olive green to dark brown; and adults lack a pale yellow or cream middorsal stripe, and a conspicuous interorbital bar (a pale yellow middorsal stripe can be present in juveniles and subadults).

Similar species: Adults of *Rhinella horribilis* on the Fonseca islands cannot be confused with any other anuran. Juveniles, subadults, and adults of *R. horribilis* differ from *Incilius* on the islands by the presence of a distinct inner tarsal fold, very large parotoid glands extending onto the body of adults, and reaching a very large size.

General geographic distribution: *Rhinella horribilis* occurs at low, moderate, and intermediate elevations on the Atlantic versant from extreme southern Texas, in the United States, to Venezuela, and on the Pacific versant from Sinaloa, Mexico, to southern Ecuador. This species also occurs naturally on the Caribbean islands of Trinidad and Tobago, and either *R. horribilis* or *R. marina* (see Remarks) has been introduced widely in both the Eastern and Western Hemispheres.

Natural history comments: *Rhinella horribilis* primarily is a human commensal that occurs in highly disturbed edificarian situations. We found one of the two island specimens on the ground at night, next to a small boat that recently had arrived from the mainland. This species is known only from two Fonseca islands, a single specimen from each. We believe these toads were introduced recently through human agency and have not established breeding colonies on these islands, but consider this only a matter of time.

Remarks: Based on morphological and molecular data, Acevedo et al. (2016) divided the former *Rhinella marina* into two species. The species occurring in Honduras now is called *R. horribilis*.

Family Hylidae Rafinesque (1815: 78)

Subfamily Hylinae Rafinesque (1815: 78)

Duellman et al. (2016: 7) coined the unranked name Arboranae, containing three subfamilies that occur on the Fonseca islands, including the Hylinae. We use this classification herein. The Arboranae are characterized by the presence of claw-shaped terminal phalanges, well-developed finger and toe discs, finger and toe webbing, at least on digits II–III–IV on the forelimbs, and by being arboreal. Three named species in three genera among these subfamilies of the Hylidae are known from the Fonseca islands, with 10 genera and 24 named species occurring in all of Honduras. A single genus (*Smilisca*) and species of this subfamily is found on the islands, and 10 genera with 24 named species occur in all of Honduras (McCranie, 2015: 358).

Genus *Smilisca* Cope (1866a: 194)

Smilisca baudinii (A. M. C. Duméril and Bibron, 1841: 564)

Common name: Rana Trepadora Común.

Description: *Smilisca baudinii* is a moderately large frog (SVL to 76 mm in Honduran males, and to 90 mm in females; also rangewide) with paired subgular vocal sacs and paired vocal slits in males. The pupil is horizontally elliptical; an axillary membrane is absent; the snout is rounded in lateral profile; the dorsal surface of the body is smooth to weakly granular; Finger I is longer than Finger II; the fingers are moderately webbed (basal between fingers I–II, and the remaining modal webbing formula is II $1\frac{2}{3}$ – $2\frac{2}{3}$ III $2\frac{1}{3}$ –2 IV); the toes are extensively webbed (the modal webbing formula is I 1–2 II $\frac{3}{4}$ – 2^+ III 1–2 IV $2-\frac{3}{4}$ V); the fingers and toes contain large disc pads and rounded disc covers; a row of low, distinct tubercles usually is present along the posterior ventrolateral edge of the forearm; and tiny nuptial excrescences usually are present on the thumb pad of breeding males. The dorsal surfaces generally range from some shade of brown to green; a brown interorbital bar and brown dorsal body blotches usually are present; a distinct dark brown to black postorbital bar or broad stripe extends from above the tympanum onto the dorsolateral portion of the body, to at least the level of the axilla; contrasting dark brown vertical lip bars are present; the flanks are mottled with brown and white; and the iris is bronze or pale brown, with darker brown reticulations.

Similar species: *Smilisca baudinii* is unique among the hylids on the Fonseca islands, because of the presence of a paired, subgular, vocal sac in males. *Scinax staufferi* also is a much smaller hylid (SVL to 29 mm in males, and to 32 mm in females) with an elongated snout, a single subgular vocal sac, and the webbing between toes I–II noticeably reduced, relative to the other toes. *Trachycephalus typhonius* also has thick glandular skin in the occipital

and frontal areas that secretes milky substances when handled, and paired vocal sacs in males located posterior to the angles of the lower jaw.

General geographic distribution: *Smilisca baudinii* occurs at low, moderate, and intermediate elevations on the Atlantic versant from extreme southern Texas, in the United States, to southern Costa Rica, and on the Pacific versant from southern Sonora and southwestern Chihuahua, Mexico, to southeastern Costa Rica (including Las Islas Mariás, Mexico).

Natural history comments: We encountered the majority individuals on the Fonseca islands at night after heavy rains, mostly in breeding colonies around inundated areas and temporary ponds. We heard males calling from low emergent vegetation above the water. We also found eggs and tadpoles on Isla Exposición, in a water-filled, concrete, cattle drinking tank. We did not encounter any *Smilisca* during the dry season.

Subfamily Lophohylinae Miranda-Ribeiro (1926: 65; as Lophiohylinae)

One genus (*Trachycephalus*) and named species occurs on the Fonseca islands, and also on the Honduran mainland (McCranie, 2015: 359).

Genus *Trachycephalus* Tschudi (1838: 74)

Trachycephalus typhonius (Linnaeus, 1758: 211)

Common name: Rana Trepadora Lechosa.

Identification: This large frog (SVL to 101 mm in males, and to 114 mm in females, rangewide; Honduran specimens are smaller, with SVL to 83 mm in males, and to 87 mm in females) is characterized by the presence of thick, glandular skin in the occipital and frontal regions, through which a milky substance is secreted when handled. The pupil is horizontally elliptical; the snout is rounded to nearly vertical in lateral profile; Finger I is longer than Finger II; the webbing is basal between fingers I–II, and the remaining modal webbing formula is II $1\frac{1}{2}$ – $2\frac{1}{2}$ III 2^+ –2 IV); extensive webbing is present on the toes (the modal webbing formula is I 1^+ –2 II $\frac{3}{4}$ –2 III $\frac{3}{4}$ –2 IV 2^+ – $\frac{3}{4}$ V); the fingers and toes contain large disc pads with rounded disc covers, with those on the toes relatively smaller than on the fingers; paired vocal slits and paired lateral vocal sacs are located posterior to angles of the jaws in males; an inner tarsal fold is present; and dark brown, tiny nuptial excrescences are present on the prepollex and lateral thumb regions in breeding males. The dorsal surfaces generally are olive-green, pale gray, or some shade of brown, with or without a large darker brown blotch; the vocal sacs are grayish brown to dark gray in breeding males; and the iris is gold with black reticulations.

Similar species: *Trachycephalus typhonius* is unique among the amphibians on the Fonseca islands, owing to the presence of thick, glandular skin in the occipital and frontal regions that secretes a milky substance, and the presence of paired, lateral vocal sacs posterior to the angles of the jaws in males.

General geographic distribution: *Trachycephalus typhonius* is found at low, moderate, and intermediate elevations on the Atlantic versant from central Tamaulipas, Mexico, to Nicaragua and northern Costa Rica, and on the Pacific versant from southern Sinaloa, Mexico, to eastern Panama. This species also is widespread on the Atlantic versant in northern South America eastward to the Guianas, including the Caribbean islands of Trinidad and Tobago (see Remarks).

Natural history comments: The two specimens of *Trachycephalus typhonius* from the Fonseca islands were in trees about 3–5 m above the ground. On the Honduran mainland, this species is an explosive breeder in temporary ponds and areas inundated by heavy rains, where males form large choruses that can be heard for long distances. The choruses sometimes begin in late afternoon, two or three hours before nightfall. Males call while floating on the water surface or while sitting in shallow water, usually in association with dense grasses and low vegetation. Males sometimes call, in surprisingly high numbers, from trees that apparently contain holes for hiding (and for waiting out the dry season), in anticipation of a heavy rain before the actual rains begin. The eggs and tadpoles develop in lentic bodies of water. We are unaware where this species breeds on the two Fonseca islands; we found no surface water on either island, even though most of our trips were made at the height of the rainy season. Isla El Coyote is an especially hilly, cone-shape island, on which we did not find an area where rainwater could accumulate. We saw only one brick lined, deep well on a steep hillside on the island, but perhaps the well is used for breeding given that *Smilisca* uses a brick cattle tank for breeding on Isla Exposición.

Remarks: Duellman et al. (2016) and Ron et al. (2016) recovered a paraphyletic *Trachycephalus typhonius* in their phylogenetic analyses based on molecular data, largely from South American populations. Ron et al (2016) resurrected one nominal form from the synonymy of *T. typhonius* for the Amazonian populations previously assigned to this species, but left some questions regarding the overall distribution of *T. typhonius* in South America; they also did not address the taxonomy of the more northern populations. Thus, it would not be surprising if *T. venulosus* (Laurenti, 1768: 31), or another nominal form currently in the synonymy of *T. typhonius*, were resurrected for some northern populations in the future should a molecular and morphological study of Mexican and Central American populations be undertaken.

Subfamily Scinaxinae Duellman, Marion, and Hedges (2016: 25)

A single genus (*Scinax*) and one named species of this newly proposed subfamily occurs on the Fonseca islands, and one genus with two named species occurs in all of Honduras (McCranie, 2015: 359).

Genus *Scinax* Wagler (1830: 201)

Scinax staufferi (Cope, 1866a: 195)

Common name: Rana Trepadora Nariguda.

Description: *Scinax staufferi* is a small frog (SVL to 29 mm in males, and to 32 mm in females, rangewide; SVL in Honduran males and females to 28 mm) with a protruding snout in lateral profile. The pupil is horizontally elliptical; Finger I is longer than Finger II; webbing is absent between fingers I–II, and basal between fingers II–III–IV; the webbing between toes I–II is noticeably reduced relative to the remaining extensively webbed toes (the modal webbing formula is I 2–2³/₄ II 1–3· III 1⁺–3· IV 2 ½–1 V); an inner tarsal fold is absent; the fingers and toes contain large disc pads with somewhat truncated disc covers, with the discs relatively smaller on the toes than on the fingers; paired vocal slits and a single, median, subgular vocal sac are present in males; a raised pad and occasionally a patch of tiny, pale nuptial excrescences are present on the prepollex of breeding males; and the dorsal and lateral surfaces of the head lack distinct tubercles, although small tubercles occasionally are present. The dorsal surfaces generally are some shade of brown, usually with darker brown, broken, longitudinal lines or stripes; the groin and the anterior and posterior surfaces of the thigh are some shade of brown; the dorsal surface of the thigh is brown with darker brown crossbars; and the iris is gold or golden brown with dark brown reticulations.

Similar species: *Scinax staufferi* is a small hylid (SVL to 29 mm in males, and to 32 mm in females) that should not be confused with any other hylid on the Fonseca islands, as it is the only species with a protruding snout and noticeably reduced webbing between toes I–II, relative to the webbing on the remaining toes.

General geographic distribution: *Scinax staufferi* is found at low, moderate, and intermediate elevations on the Atlantic versant from southern Tamaulipas, Mexico, to extreme northern Costa Rica (including the Islas de la Bahía, Honduras, and Isla del Maíz Grande, Nicaragua), and on the Pacific versant from Guerrero, Mexico, to northwestern Costa Rica.

Natural history comments: We found *Scinax staufferi* around two small, rainfilled, temporary ponds on two islands, and around a permanent lagoon on another island. We did not encounter any individuals while searching around those ponds during the dry season, when they were dry (see Figs. 8 and 9 for contrasting views during the seasons). During the rainy season males called at night, from grasses and other low emergent vegetation. The eggs and tadpoles develop in lentic bodies of water.

Family Leptodactylidae Werner (1896: 357)

Members of this family on the Fonseca islands lack expanded toe tips, cranial crests, and finger webbing, only basal webbing is present between some toes, and smooth skin is present in two of the three species. Three named species in two genera (also in two subfamilies) are known from these islands, and five named species in the same two genera occur in all of Honduras (McCranie, 2015: 360).

Subfamily Leiuperinae Bonaparte (1850: 3)

One genus (*Engystomops*) and one species of this subfamily occur on the Fonseca islands, and in all of Honduras (McCranie, 2015: 360).

Genus *Engystomops* Jiménez de la Espada (1872: 86)

Engystomops pustulosus (Cope, 1865a: 180)

Common name: Sapo Túngara.

Description: *Engystomops pustulosus* is a small frog (SVL to 34 mm in males, and to 35 mm in females, rangewide; SVL to 28 mm in Honduran males, and to 31 mm in females) that lacks expanded finger and toe tips, as well as digital grooves around tips of the fingers and toes. Finger II is longer than Finger I; the fingers and toes are unwebbed, or basal webbing is present between toes II–III–IV; lateral keels and an inner tarsal fold are absent on the hind limbs; a distinct inner tarsal tubercle is present; a well-developed parotoid gland is present, which is surrounded by numerous tubercles; the pupil is horizontally elliptical; cranial crests and a tympanum are absent; a thumb pad with numerous, tiny nuptial excrescences is present in adult males; paired vocal slits, and a single, large, median subgular vocal sac that when inflated extends well beyond the sides of the head are present in males; maxillary teeth are absent; a conspicuous inner tarsal tubercle is present; the skin on the dorsal surfaces is covered with numerous small to large tubercles, with males being more tuberculate; and dorsolateral ridges are absent. The dorsal surfaces generally are medium brown to dark brown, with varying amounts of darker brown spotting or mottling present in paler specimens; paler brown tips often are present on the dorsal tubercles; the posterior surface of the thigh is cream to tan, heavily flecked, spotted, or mottled with paler brown; a pale longitudinal stripe is absent; and the ventral surfaces are cream to tan, with varying amounts of dark brown spotting, mottling, or solid pigment.

Similar species: The strongly tuberculate dorsal skin, presence of a conspicuous inner tarsal tubercle, presence of a short, narrow snout, absence of maxillary teeth, the lack of a tympanum, and the lack of cranial crests distinguishes *Engystomops pustulosus* from all other anurans on the Fonseca islands.

General geographic distribution: *Engystomops pustulosus* is found at low, moderate, and intermediate elevations on the Atlantic versant from central Veracruz, Mexico, to northern South America, and on the Pacific versant from southern Oaxaca, Mexico, to eastern Panama.

Natural history comments: We captured most individuals of *Engystomops pustulosus* at night during the rainy season, in breeding colonies around temporary ponds, inundated areas, and a permanent lagoon. Males call from the water, and successful breeding events resulted in the construction of foam nests for the eggs and tadpoles. Females also were active on the ground at night around the breeding sites. On 8 July 2011 on Isla Exposición, we found a male calling from a tree hole 10 cm above the ground. The tree hole was filled to a depth of 7 cm with water and contained a foam nest, with the male inside the hole 2 cm above the water.

Subfamily Leptodactylinae Werner (1896: 357)

Two named species placed in one genus (*Leptodactylus*) occur on the Fonseca islands, with four named species in the same genus occurring in all of Honduras (McCranie, 2015: 360).

Genus *Leptodactylus* Fitzinger (1826: 38)

Leptodactylus fragilis (Brocchi, 1877: 182)

Common name: Ranita de Charco.

Description: *Leptodactylus fragilis* is a moderate-sized frog (SVL to 43 mm in males, and to 44 mm in females, both in Honduras and rangewide) that lacks expanded finger and toe tips, as well as digital grooves around their tips. Finger II is longer than Finger I; the fingers are unwebbed, with webbing absent between toes I–II and IV–V, and basal between toes II–III–IV; lateral keels are absent on the toes, or only weakly developed on one or more of toes II–III–IV; lateral fleshy fringes are absent; the tympanum is prominent; the pupil is horizontally elliptical to circular; maxillary teeth are present; male thumb spines are absent; paired vocal slits and paired lateral vocal sacs are present in males; the skin on the dorsal surfaces is smooth to weakly granular; dorsolateral ridges normally are absent, but occasionally are slightly evident; and numerous, prominent dirty white to cream tubercles are present on the ventral surfaces of the tarsal segments. The dorsal surfaces are generally some shade of brown, with darker brown spots or blotches present on the back; a distinct pale yellow longitudinal stripe is present on the posterior surface of the thigh; and the ventral surfaces are white to pale yellow.

Similar species: The smooth skin and usual lack of dorsolateral ridges, a lack of expanded toe discs or pads, a lack of finger webbing, only basal webbing present between toes II–III–IV, and the presence of a distinct yellow line along the posterior surface of the thigh will distinguish *Leptodactylus fragilis* from all other anurans on the Fonseca islands. *Leptodactylus melanonotus* shares some of these features, but differs from *L. fragilis* by the presence of well-developed lateral fleshy fringes on the toes and two thumb spines in adult males, and lacks a pale longitudinal stripe on the posterior surface of the thigh.

General geographic distribution: *Leptodactylus fragilis* occurs at low, moderate, and intermediate elevations on the Atlantic versant from extreme southern Texas, in the United States, to central Colombia and northern Venezuela (disjunct in much of the area from Nicaragua southward), and on the Pacific versant from Colima, Mexico, to central Panama.

Natural history comments: We heard males of *Leptodactylus fragilis* calling at night during the rainy season, from temporary ponds and inundated areas. Males call from concealed places and can be difficult to locate. Females occasionally are seen on the ground at night around breeding sites.

***Leptodactylus melanonotus* (Hallowell, 1861: 485)**

Common name: Ranita de Charco de Dos Espinas.

Description: *Leptodactylus melanonotus* is a moderate-sized frog (SVL to 46 mm in males, and to 50 mm in females, rangewide; SVL to 44 mm in Honduran males, and to 43 mm in females) that lacks expanded finger and toe tips, as well as digital grooves around their tips. Finger II is longer than Finger I, or both are about equal in length; the fingers are unwebbed; basal webbing is present between the toes; well-developed, lateral, fleshy fringes are present on the toes; the tympanum is prominent; two thumb spines are present in adult males; paired vocal slits and an internal vocal sac are present in males; the skin of the dorsal surfaces is smooth to weakly granular and usually contains scattered conical apicalia, but the dorsal surfaces occasionally contain small, scattered tubercles; dorsolateral ridges are absent; and conical apicalia are present on the ventral surfaces of the tarsal segments. The dorsal surfaces generally are brown to gray, with indistinct dark brown to black spots present in paler specimens; the posterior surface of the thigh is brown, mottled with paler brown, and a pale longitudinal stripe is absent; the ventral surfaces are white to cream, with scattered brown flecking; and brown to orange ventrolateral glands usually are evident in adult males.

Similar species: The smooth skin, lateral fleshy fringes present on the toes, a lack of expanded toe pads and finger webbing, only basal webbing present between toes II–III–IV, and the presence of two black thumb spines in adult males distinguishes *Leptodactylus melanonotus* from all other anurans on the Fonseca islands. *Leptodactylus fragilis* shares some of these features, but differs from *L. melanonotus* in lacking well-developed lateral fleshy fringes on the toes, lacking thumb spines in adult males, and by the presence of a distinct pale yellow or cream longitudinal stripe on the posterior surface of the thigh.

General geographic distribution: *Leptodactylus melanonotus* is found at low, moderate, and intermediate elevations on the Atlantic versant from Tamaulipas, Mexico, to central Panama, and on the Pacific versant from Sonora, Mexico, to Ecuador.

Natural history comments: During the rainy season, we heard males of *Leptodactylus melanonotus* calling at night from a temporary pond and a permanent lagoon. Males call from concealed places and can be difficult to locate. Females were active on the ground at night around the two water sources.

Class Reptilia Laurenti (1768: 19)

Members of the class Reptilia are tetrapod vertebrates, but unlike amphibians, reptiles are amniote vertebrates, i.e., they are equipped with an amniotic or cleidoic egg adapted for depositing on land, and cannot be placed in water. Therefore, aquatic reptiles must come on land to deposit their eggs. Reptiles were the first vertebrates to make a complete transition from aquatic environments to terrestrial ones. Reptiles do not undergo a larval stage in their life cycle, as hatchlings or neonates are a miniature replica of the adult. Although most reptiles deposit eggs, giving birth to living young (viviparity) has evolved in many reptilian lineages, including a few of the snakes in the Fonseca island region (*Agkistrodon howardgloydi*, *Boa imperator*, and *Hydrophis platurus*).

Three orders of living reptiles live on the Fonseca islands or in associated marine waters: lizards and snakes (order Squamata), crocodylians (order Crocodylia), and turtles (order Testudinata).

Order Squamata Opper (1811a: 376)

The Order Squamata contains the lizards and snakes, as well as the amphisbaenians (no amphisbaenians occur in Honduras). Typically, a highly kinetic skull is present in squamates, compared to that of turtles and crocodylians, as well as a pair of male copulatory organs called hemipenes, which are outpocketings of the posterior wall of the cloaca inside the base of tail. Recent phylogenetic analyses recovered amphisbaenians and snakes as being derived from within lizards. Thus, the traditional separation of squamate reptiles into two suborders (Lacertilia, Serpentes) is not substantiated on evolutionary grounds. Nonetheless, in the region covered herein lizards can be distinguished by their four well-developed limbs, which are absent in snakes. We present information on the lizards and snakes in separate sections.

Lizards

Fourteen named lizard species, in 13 genera, six superfamilies, 11 families, and four infraorders are recorded from the Fonseca islands. All of Honduras contains 107 named species in six infraorders, eight superfamilies, 18 families, and 30 genera (McCranie, 2015: 364; JRM, unpublished).

Infraorder Gekkomorpha Fürbringer (1900: 607)

The infraorder Gekkomorpha contains two superfamilies in Honduras and on the Fonseca islands: the Eublepharoidea Boulenger (1883: 308) and the Gekkonoidea Gray (1825: 198). The Honduran member of the Eublepharoidea differs from all Honduran Gekkonoidea by the presence of moveable eyelids (vs. no moveable eyelids in the Gekkonoidea).

Superfamily Eublepharoidea Boulenger (1883: 308)

Family Eublepharidae Boulenger (1883: 308)

This superfamily contains only the family Eublepharidae, with one genus (*Coleonyx*) containing one named species occurring on the Fonseca islands and in all of Honduras (McCranie, 2015: 365). Externally, the single Honduran member of this superfamily is distinguished from all remaining Honduran lizards by a combination of the presence of moveable eyelids, granular dorsal scales, and numerous tubercles covering the dorsal surfaces of the head and body. Members of this superfamily are oviparous.

Genus *Coleonyx* Gray (1845: 162)

***Coleonyx mitratus* (Peters, 1863: 42)**

Common names: Geco, Salamanquesa.

Description: *Coleonyx mitratus* is a moderate-sized gecko (SVL to 97 mm rangewide; SVL of both sexes in Honduras to 80 mm) with a relatively short tail (TAL/SVL 0.78–0.96 in males, 0.63–0.96 in females). The pupil is vertically elliptical; moveable eyelids are present; the dorsal surfaces of the head and body are covered with small, conical, granular scales; the supralabials and infralabials are 6–7 at a level below the mideye; the 1st infralabial is squarish; 18–24 longitudinal, irregular rows of enlarged tubercles are present on the body; the ventral scales are smooth, imbricate, and much larger than the granular dorsals; 41–59 midventrals are present between the levels of the axilla and groin; the subdigital lamellae are single and only slightly expanded, with 11–15 lamellae present on Digit IV of the forelimb, and 14–19 on Digit IV of the hind limb; the claws are partially hidden by two laterally compressed terminal digital lamellae; femoral pores are absent in both sexes; 4–8 preloacal pores are present in males, but in females analogous indentations are present on those scales. In juveniles and some adults the dorsal surface of the body generally is brown with three cream, chevron-shaped, crossbars; the body is cream in other adults, with dark brown linear blotches on each side of the vertebral area, which sometimes are joined; the lateral surface of the body of adults is cream with dark brown spots or mottling; and the dorsal surface of the head is pale brown with brown linear spots.

Similar species: *Coleonyx mitratus* is the only member of the Gekkomorpha on the Fonseca islands with moveable eyelids.

General geographic distribution: *Coleonyx mitratus* occurs at low and moderate elevations on the Atlantic versant from extreme eastern Guatemala to Costa Rica, and on the Pacific versant from southeastern Guatemala to south-central Costa Rica.

Natural history comments: We found *Coleonyx mitratus* active at night on the ground and on large rocks. This species is strictly nocturnal and terrestrial, and appears to be localized on some of the larger islands.

Superfamily Gekkonoidea Gray (1825: 198)

Family Gekkonidae Gray (1825: 198)

The superfamily Gekkonoidea contains three families, six genera, and 20 named species in all of Honduras (McCranie, 2015: 365), with one family (Gekkonidae), one genus (*Hemidactylus*), and three named species (the three *Hemidactylus*) introduced in Honduras. All three families inhabit the Fonseca islands, each with a single named species. Members of this family are the only Honduran Gekkomorpha in which all of the subdigital lamellae are divided (except that the basal most and distal most can be single), with none separated by skin.

Genus *Hemidactylus* Oken (1817: col. 1,182)

In Honduras, this genus of introduced lizards contains, or recently contained, at least three named species (at least one is extirpated) on the mainland, with one species occurring on the Fonseca islands.

Hemidactylus frenatus Schlegel, 1836: 366, In A. M. C. Duméril and Bibron, 1836

Common names: Geco de La Casa, Besucona.

Description: *Hemidactylus frenatus* is a moderate-sized gecko (SVL to 65 mm rangewide; SVL in Honduran males to 60 mm, and in females to 50 mm) with a relatively short tail (TAL/SVL 0.64–1.21 in males, 0.72–1.13 in females). The eyes are large with vertically elliptical pupils; moveable eyelids are absent; the head and dorsal body scales are granular, with some slightly enlarged and weakly keeled tubercles scattered along the granules on the body; the supralabials are 9–13, the infralabials are 8–10 to a level below the mideye; the digits lack basal webbing; 8–10 expanded, medially divided, subdigital lamellae are present on Digit IV of hind limb, with the lamellae reaching the origin of Digit IV; non-retractable claws are visible on the terminal pads of each digit; the femoral-precloacal pores are 18–32 (both sides combined) in males, but are absent in females. The dorsal coloration differs between day and night; the nighttime color generally is buff, pinkish-tan, tan, or brown, with scattered black spots; and the daytime color tends to be a darker shade of brown. The ventral surface of body generally does not vary between night and day, and is uniform creamy white, yellow, or tan.

Similar species: *Hemidactylus frenatus* is the only gekkonid on the islands with a combination of lacking moveable eyelids, the presence of divided subdigital lamellae, and with the distal pair on Digit IV of the hind limb not leaf-like in shape.

General geographic distribution: *Hemidactylus frenatus* is native to the Indoaustralian Archipelago, southern and southeastern Asia, and various islands in the Pacific. It also has been introduced and established in Mexico, Central- and South America (including numerous islands on both versants), Florida, Texas, and the Hawaiian Islands, in the United States, the Galapagos Islands, Cuba, Hispaniola, the Mariana Islands (Guam), East Africa, islands in the Indian and South Pacific oceans, and parts of Australia. In Honduras, this species has become widely introduced into cities, towns, and villages on the mainland, and also is known from Islas de Guanaja, Roatán, and Utila, and on the Cayo Cochinos in the Islas de la Bahía, Isla Grande in the Islas del Cisne, and numerous islands in the Golfo de Fonseca.

Natural history comments: *Hemidactylus frenatus* occurs in edificarian and non-edificarian situations in the Fonseca region, including on uninhabited islands. This species is strictly nocturnal and often is seen moving about on the walls of buildings and other man-made structures, as well as on tree trunks and large rocks on uninhabited islands. This species vocalizes and frequently squeaks while active. *Hemidactylus frenatus* is more frequently seen in edificarian and non-edificarian situations than the similar-sized native gecko *Phyllodactylus tuberculatus*, which it seems to be replacing.

Family Phyllodactylidae Gamble, Bauer, Greenbaum, and Jackman (2008: 359)

Two genera and four named species of this family occur in all of Honduras (McCranie, 2015: 365), with only a single genus (*Phyllodactylus*) and named species found on the Fonseca islands. Members of the Phyllodactylidae are the only Honduran geckonids in which the distal pair of subdigital lamellae are expanded to form leaf-like pads.

Genus *Phyllodactylus* Gray (1828: 3)

Phyllodactylus tuberculosus Wiegmann (1834a: 241)

Common names: Geco, Panza Amarilla, Salamanquesa.

Description: *Phyllodactylus tuberculosus* is a moderate-sized gecko (SVL to 100 mm rangewide; SVL in Honduran males to 66 mm, and in females to 63 mm) with a relatively short tail (TAL/SVL 0.77–0.88 in males, 0.87–1.05 in females). The eyes are large with vertically elliptical pupils; moveable eyelids are absent; the head and dorsal body scales are granular, with many enlarged tubercles, especially on the body; the supralabials are 5–8 and the infralabials 5–6 to the level below the mideye; the ventral scales are smooth, imbricate, and much larger than the dorsal scales, with 55–70 present along the midline from posterior to the throat to the cloaca; the digits lack basal webbing, and 10–13 expanded, single, subdigital lamellae are present on Digit IV of the hind limb; the terminal pair are greatly enlarged to form a leaf-like pad that contains the non-retractable claw; and femoral-precloacal pores are absent. The dorsal ground color generally is gray to grayish brown, with a pattern of black blotches or mottling on the body; most of the dorsal tubercles are pale gray, but those within black markings are black; the ventral surfaces of the head, body, and tail are white to pale gray; and the subcaudal surface usually is marked with dark brown.

Similar species: *Phyllodactylus tuberculosus* is the only lizard on these islands in which the terminal pair of subdigital lamellae on Digit IV of the hind limb are much enlarged, divided, and expanded to form a leaf-like pad.

General geographic distribution: *Phyllodactylus tuberculosus* occurs at low and moderate elevations on the Pacific versant from southern Sonora and Chihuahua, Mexico, to central Costa Rica, and on the Atlantic versant from coastal Quintana Roo, Mexico, and Belize (and a few offshore islands) to Guatemala via the Río Motagua Valley. In Honduras, this species is known from both versants, but only from the central and southern portions of the country. *Phyllodactylus tuberculosus* also occurs on numerous islands in the Golfo de Fonseca.

Natural history comments: *Phyllodactylus tuberculosus* occurs in edificarian and in non-edificarian situations on several islands in the Fonseca region. This species is nocturnal and frequently climbs buildings, tree trunks, rock walls, and other structures. Unfortunately, the introduced *Hemidactylus frenatus* appears to be eliminating the native *P. tuberculosus* from the Fonseca islands, especially in edificarian areas.

Family Sphaerodactylidae Underwood (1954: 476)

Three genera with 13 named species in this family occur in Honduras (McCranie, 2015: 366), with only one genus and named species occurring on the Fonseca islands. The species in this family are unusual among other geckonid families on the Fonseca islands, because they are diurnal and their pupils are circular.

Genus *Gonatodes* Fitzinger (1843: 91)

Gonatodes albogularis (A. M. C. Duméril and Bibron, 1836: 415)

Common names: Geco del Día, Geco Cabeza Amarilla.

Description: *Gonatodes albogularis* is a small gecko (SVL in Honduran males to 42 mm, and in females to 41 mm; these are the maximum lengths recorded rangewide) with a moderately long tail (TAL/SVL 1.19–1.56 in males, 1.07–1.09 in females). The eyes are relatively large with circular pupils; moveable eyelids are absent; the supralabials are 5–6 and the infralabials 3–4 to the level below the mideye; the dorsal surfaces of the head and body are covered with small, conical, granular scales, with those on the body slightly larger; the ventral scales are flat, imbricate, and larger than the dorsal granules, and 40–59 are present along the midline between the axilla and the groin; the digits lack expanded pads, and the claw is articulated between the superior and inferior terminal scale and is non-retractable; the subdigital lamellae are barely enlarged, single, and 17–24 are present per side on Digit

IV of the hind limb; sharp angles are formed between phalanges II–III of the digits; and femoral-precloacal pores are absent. This species is sexually dichromatic; in life, the body of males is uniform black to dark gray or gray-brown, the head and neck are yellow to red-orange, and a blue line is present on the otherwise white supralabials; the ventral surface of the head in males is blackish blue anteriorly and fades to gray posteriorly, with an orange central chin blotch divided by a yellow stripe; females are grayish white to tan, with irregular dark brown to gray mottling or spots dorsally on the body; the color of the head in females is similar to that of the dorsum of the body, and the ventral surface is dirty white to tan. The tail tip in males (if undamaged) usually is white.

Similar species: *Gonatodes albogularis* can be differentiated from all other geckonids on the Fonseca islands by the presence of a circular pupil. The small size (SVL to about 41–42 mm), granular dorsal surfaces, venter of body with larger smooth and imbricate scales, and 17–24 slightly expanded subdigital lamellae on Digit IV of the hind limb also will separate *Gonatodes* from all other lizards on the Fonseca islands.

General geographic distribution: *Gonatodes albogularis* occurs at low and moderate elevations on the Pacific versant from southeastern Chiapas, Mexico, to western Colombia, and on the Atlantic versant from eastern Guatemala to western Venezuela. The species also occurs on the Greater and Lesser Antilles and Curaçao, and has been introduced in Miami and Key West, Florida, in the United States, and in Belize City, Belize; the Florida populations, however, are seriously declining or are extirpated.

Natural history comments: *Gonatodes albogularis* is a strictly diurnal and fast moving geckonid. We saw this gecko moving around in edificarian and non-edificarian situations on several islands. Individuals were on the ground, climbing on rock walls and tree trunks, moving in and out of rock piles, and in other rocky situations. The speed, quick and short movements, and apparently good eyesight of this species make individuals difficult to capture by hand.

Infraorder Gymnoformata McCranie: New Infraorder Proposed Herein

Gymnophthalmidae Fitzinger (1826: 11) is an older name than Teiidae (Gray, 1827: 55; see Goicoechea et al., 2016 and their use of Gymnophthalmoidea), thus the infraorder name Teiformata Vidal and Hedges (2005) becomes invalid. For these reasons, JRM herein designates Gymnoformata as a new infraorder name to replace the invalid Teiformata. The infraorder Gymnoformata includes the superfamily Gymnophthalmoidea and contains three families, with only two, the Gymnophthalmidae and Teiidae occurring in Honduras.

Superfamily Gymnophthalmoidea Fitzinger (1826: 11)

Family Gymnophthalmidae Fitzinger (1826: 11)

One superfamily, the Gymnophthalmoidea, containing two families, five genera, and seven named species occurs in Honduras (McCranie, 2015: 371; as Teiioidea). Combined, both families in this superfamily contain three genera and three named species on the Fonseca islands. The family Gymnophthalmidae contains one genus and one named species in Honduras (McCranie, 2015: 371), and on the Fonseca islands. The combination of cycloid body scales of equal size, only four digits on the forelimbs, and the lack of moveable eyelids distinguishes the Gymnophthalmidae representative from all the remaining lizards on the Fonseca islands.

Genus *Gymnophthalmus* Merrem (1820: 74)

***Gymnophthalmus speciosus* (Hallowell, 1861: 484)**

Common name: Lagartija Dorada.

Description: *Gymnophthalmus speciosus* is a small lizard (SVL to 48 mm in males, and to 47 mm in females in Honduran specimens, and rangewide) with a moderately-long tail (TAL/SVL 1.01–1.67 in males, 0.98–1.49 in females). The dorsal surface of the head is covered with large, smooth, plate-like scales; moveable eyelids are absent; the pupil is circular; the gular scales are cycloid-shaped; the supralabials are 4–5 and the infralabials 3–5 to the levels of the posterior edge of the eye; 13 or 15 cycloid-shaped scales are present around midbody; the ventral body scales are smooth and cycloid; the longitudinal rows of dorsal scales are 31–36 between the interparietal and the level of the posterior margin of the thigh; the limbs are short and small, with only 4 digits on the forelimb; the

total number of femoral-precloacal pores is 8–12 in males, but these pores are absent in females; enlarged brachial and antebrachial scales are present, arranged in a continuous row on the dorsal surface of the forelimb; and the subdigital scales are only slightly enlarged, with 12–16 per side on Digit IV of the hind limb. The dorsal surfaces of the head and body generally are pale brown to dark brown, and usually with a metallic sheen; a pale brown or white longitudinal line usually is present along the upper border of the dark brown lateral surface, but sometimes is absent; the tail, if not regenerated, is bright red in juveniles, and reddish orange in adults; the venter ranges from cream with gray mottling to gray with dark grayish black mottling, to nearly uniform black.

Similar species: The presence of only four digits on the forelimbs is a character unique to *Gymnophthalmus speciosus* on the Fonseca islands.

General geographic distribution: *Gymnophthalmus speciosus* is found at low and moderate elevations on the Atlantic versant from northern Belize to Guyana, and on the Pacific versant from eastern Oaxaca, Mexico, to Panama. This species also occurs on Trinidad and Tobago and the Islas de Guanaja, Roatán, and Utila (and several satellite islands) in the Islas de la Bahía, Honduras.

Natural history comments: *Gymnophthalmus speciosus* is a terrestrial or semi-fossorial diurnal species. On the Fonseca islands, we encountered this lizard under ground debris composed of rocks mixed with leaves, and also found individuals darting into the root systems of small shrubs in an otherwise open pasture.

Family Teiidae Gray (1827: 55)

Four genera containing six named species occur (or occurred) in Honduran territory (McCranie, 2015: 371), with two genera and two named species on the Fonseca islands. The combination of the presence of infralingual plicae, a moveable eyelid, five digits on the forelimb, and enlarged brachial-antebrachial scales on the forelimb distinguishes the Teiidae from all other lizard families on the Fonseca islands.

Genus *Aspidoscelis* Fitzinger (1843: 20)

One of the two named species in Honduras (McCranie, 2015: 371) also occurs on the Fonseca islands.

Aspidoscelis deppii (Wiegmann, 1834b: 28)

Common name: Lagartija Verdeazul.

Description: *Aspidoscelis deppii* is a moderate-sized lizard (SVL in Honduran males to 84 mm, and 80 mm in females; SVL to 93 mm rangewide) with a long tail (TAL/SVL 1.78–2.36 in males, 1.86–2.23 in females). The dorsal surface of the head is covered with large, smooth, plate-like scales; moveable eyelids are present; the pupil is reniform; a midgular patch of much enlarged scales is absent; 2–4 regular to irregular transverse rows of enlarged mesoptychial scales are present; the supralabials are 6 and the infralabials 6–7 to a level below the mideye; the dorsal body scales are granular and somewhat conical, with 226–270 longitudinal middorsals present between the occipitals and the level of the first enlarged caudal scale; 105–127 granules are present around midbody; the ventral scales are large, platelike, smooth, squarish, and juxtaposed, and arranged in 8 transverse rows at midbody; 25–34 longitudinal rows of ventral scales are present between the gular fold and the level of the hind limb; 2–3 rows of enlarged brachial and antebrachial scales are present, which are continuous with each other on the dorsolateral surfaces of the forelimb; the limbs are large, with 5 digits; the total number of femoral-abdominal pores in males is 35–42, and 32–39 in females; and the subdigital scales are 12–16 per side. In general, juveniles and adult females 9–11 have yellowish or creamy white longitudinal stripes on the dorsal and lateral surfaces of the body; adult males are patterned with paired paravertebral stripes that fuse to form a vertebral stripe, which sometimes is obscure; ventrolateral stripes in adult males are broken into bluish white spots; the middorsal ground color between the pale ventrolateral stripes is suffused with green or dark brown; the venter is black in males, and white to bluish white in juveniles and adult females.

Similar species: *Aspidoscelis deppii* and *Holocosus undulatus* are the only island species with granular dorsals and large squarish ventral plate-like scales. A midgular patch of much enlarged scales is present in *H. undulatus*, but absent in *A. deppii*.

General geographic distribution: *Aspidoscelis deppii* is found at low and moderate elevations on the Pacific versant from Michoacán, Mexico, to west-central Costa Rica, and crosses the Isthmus of Tehuantepec to reach northern Veracruz and western Campeche, Mexico, on the Atlantic versant. It also occurs disjunctly on the Atlantic versant from southeastern Campeche, Mexico, to northeastern and southwestern Nicaragua.

Natural history comments: *Aspidoscelis deppii* is a terrestrial, diurnal, and heliothermic species that we collected in open areas on a few islands. This fast-moving lizard is difficult to capture by hand, and is easier to noose. We also found individuals under rocks and other ground debris.

Genus *Holcosus* Cope (1862b: 60)

Two named species of this family occur in Honduras (McCranie, 2015: 371), with one inhabiting the Fonseca islands.

Holcosus undulatus (Wiegmann, 1834b: 27)

Common name: Largartija Metálica.

Description: *Holcosus undulatus* is a moderate-sized lizard (SVL 127 mm in Honduran males, and to 100 mm in females; SVL to 129 mm rangewide) with a long tail (TAL/SVL 1.64–2.31 in males, 1.69–2.24 in females). The dorsal head scales are enlarged, smooth, and plate-like; moveable eyelids are present; the pupil is reniform; a midgular patch of much enlarged scales is present; a transverse row of abruptly enlarged mesoptychial scales is present; the supralabials are 5–7 and the infralabials 5–6 to a level below the mideye; the dorsal body scales are granular, conical, and not keeled, and 220–289 middorsals are present between the occipitals and the level above the first enlarged caudal scale; the ventral body scales are large, platelike, squarish, juxtaposed, and smooth, and are arranged in 8 transverse rows at midbody; 27–32 longitudinal rows are present between the gular fold and the level of the hind limb; a single row of greatly enlarged, continuous, brachial-antebrachial scales are present on the anterior dorsolateral surface of the forelimb; the limbs are large, with 5 digits; 34–45 total femoral-abdominal pores are present in males, and 30–44 in females; and the total number of subdigital scales on Toe IV is 24–36. The middorsal ground color generally ranges from gray-green to leaf green anteriorly, and golden brown to brown posteriorly; a pale vertebral stripe is absent, but a broad, brown middorsal swath confluent with the dorsal color of the head is present; the lateral body pattern consists of bluish white to greenish white vertical stripes that alternate with dark brown to black vertical bars; and the ground color of the venter ranges from bluish gray to nearly black.

Similar species: *Aspidoscelis deppii* and *Holcosus undulatus* are the only lizards on the Fonseca islands with several rows of continuous, enlarged, brachial-antebrachial scales present on the dorsolateral surfaces of the forelimbs and five digits on the forelimbs. Of these lizards, *H. undulatus* is the only one with a distinct patch of enlarged midgular scales.

General geographic distribution: *Holcosus undulatus* is found at low, moderate, and intermediate elevations on the Atlantic versant from southern Tamaulipas, Mexico, to southern Nicaragua, and on the Pacific versant from southern Nayarit, Mexico, to central and west-central Costa Rica. It also occurs on Isla del Maíz Grande, Nicaragua, and a few islands and cays off the coast of Belize and Quintana Roo, Mexico.

Natural history comments: *Holcosus undulatus* is a terrestrial, diurnal, and sun-loving species. We found it active at the absolute summit of Isla del Tigre, as well as under ground debris around buildings associated with the communications tower at the summit. We also found it under rocks on Isla Zacate Grande. This fast-moving lizard is difficult to capture by hand when active, but individuals are rather easy to noose.

Infraorder Neoiguania Vidal and Hedges (2009: 134)

Vidal and Hedges (2009: 134) coined the name Neoiguania as an infraorder equivalent containing the superfamily Iguanoidea (Bell, 1825: 206; as Iguanidae). This infraorder contains one superfamily, six families, 10 genera, and 63 named species occurring in Honduras (McCranie, 2015: 367; JRM, unpublished), with three families, four genera, and five named species inhabiting the Fonseca islands.

Superfamily Iguanoidea Bell (1825: 206)

See the infraorder Neoiguania above for the numbers of taxa. The three families occurring on the Fonseca islands are the Dactyloidae, Iguanidae, and Phrynosomatidae.

Family Dactyloidae Fitzinger (1843: 16)

Characters that distinguish members of the Dactyloidae (anoles) are a partially to completely divided mental scale, a distinct male dewlap (a smaller dewlap also is present in females of some groups), and a pad of enlarged lamellae on phalanges II–IV that are best developed on the hind limbs. Two genera containing 41 named species occur in Honduras, with one genus (*Norops*) and species occurring on the Fonseca islands (but see Species of Probable Occurrence on the Fonseca Islands, Honduras).

Genus *Norops* Wagler (1830: 149)

Norops wellbornae (Ahl, 1939: 246)

Common name: Abanquillo.

Description: *Norops wellbornae* is a moderately-small anole (SVL in Honduran males to 54 mm SVL, and to 49 mm in females [rangewide as well]), with a long tail (TAL/SVL 1.54–2.28 in males, 1.15–2.23 in females). The ear opening is small, and vertically oval or rounded; the scales separating the well-defined supraorbital semicircles are 1–3 at the narrowest point; the suboculars are in broad contact with 2–4 supralabials; the anterior nasal scale usually is single, and if so, usually contacts the rostral and 1st supralabial; a single, long, superciliary scale is present; the postmentals are 6; the lateral head scales anterior to the ear opening are slightly larger than those posterior to the ear opening; the dorsal body scales are keeled, and about 6–21 median rows are slightly enlarged; the remainder of the dorsals grade into granular and homogeneous laterals; in males, the dorsal scales along the vertebral midline are 50–67 between levels of the axilla and groin, and 46–70 in females; the scales around midbody are 98–134; the ventral body scales are strongly keeled, imbricate, and 34–51 are present along the midventral line between the levels of the axilla and groin; femoral pores are absent; the 4th toe is much longer than the 3rd; phalanges II–IV of Digit IV of the hind limb contain 20–28 enlarged subdigital lamellae, forming a pad; caudal autotomy is present; the male dewlap is moderately large, and extends posteriorly slightly past the level of axillae; the female dewlap is rudimentary; and enlarged postcloacal scales and a tubelike axillary pocket are absent. The dorsal surfaces of the head and body generally are brown to gray to bronze, with a silky sheen; a few indistinct darker brown spots or reticulations sometimes are present on the body; a pale brown middorsal longitudinal stripe often is present in females; the male dewlap is yellow to yellowish orange, with a large blue or purple central spot.

Similar species: *Norops wellbornae* is the only lizard on the Fonseca islands with a large male dewlap, a partially to completely divided mental scale, and enlarged subdigital pads on phalanges II–IV of the hind limbs.

General geographic distribution: *Norops wellbornae* occurs at low and moderate elevations on the Pacific versant from about Mazatenango, Guatemala, to northwestern Nicaragua.

Natural history comments: *Norops wellbornae* is a diurnal and arboreal species that on the Fonseca islands occurs in open and sunny areas with trees and shrubs. We saw it active in trees and low vegetation, as well as sleeping at night in low vegetation, up to about 2 m above the ground.

Family Iguanidae Bell (1825: 206)

Two genera and seven named species in this family occur in Honduras (McCranie, 2015: 369), with both genera and one named species in each genus found on the Fonseca islands. The large size and robust body of these lizards, and their distinctly enlarged middorsal crest, will distinguish them from all other Fonseca island lizards.

Genus *Ctenosaura* Wiegmann (1828: col. 371)

Six species in this genus occur in Honduras (McCranie, 2015: 369), with only a single species inhabiting the Fonseca islands (but see Discussion).

***Ctenosaura similis* (Gray, 1831: 38 In Gray, 1830–1831)**

Common name: Garrobo Negro.

Description: *Ctenosaura similis* is a large and heavy-bodied lizard (SVL in Honduran males [measured] to 302 mm, and in females [measured] to 251 mm; SVL to 489 mm or larger rangewide) with a long tail (TAL/SVL 1.54–2.41 in males, 1.46–2.16 in females). Head crests or casques are absent; the tympanum is distinct, higher than long, and a much enlarged scale ventral to the tympanum is absent; 11–13 supralabials and 10–13 infralabials are present; the 2nd, 3rd, or 4th subocular lies directly below the mideye (the longest one usually is the 2nd); the dorsal body scales on the nape are granular, and become slightly larger and flatter to about the midbody, and are keeled on the posterior half of the body; a distinct middorsal crest with 51–89 enlarged, serrated scales is present, which is much better developed in adult males; the ventral scales are flat, imbricate, not keeled, and larger than the dorsals; the femoral pores are 11–15 in males, and 4–14 in females; the dorsal and anterior surfaces of the shank and thigh lack enlarged, strongly keeled or pointed scales; 29–37 subdigital scales are present on each Toe IV; whorls of enlarged spinous scales and intercalary scales between them are present on the tail; two complete rows of intercalary scales are present between caudal whorls 3–9; and caudal autotomy is absent. The dorsal ground color of adults generally is pale brown, tan, or gray (or various colors in between), with 4–6 brown to black crossbands on the body; and the dorsal surfaces of juveniles generally are green, often with a few, incomplete, brown to black crossbands.

Similar species: *Ctenosaura similis* is the the only known lizard on the Fonseca islands with distinct whorls and spiny scales on the tail, and only *Iguana iguana* reaches such a large size.

General geographic distribution: *Ctenosaura similis* occurs at low and moderate elevations on the Atlantic versant from central Tabasco and the Yucatan Peninsula, Mexico, to northeastern Honduras and in western Nicaragua, eastern Costa Rica, and central Panama (including numerous islands in the Caribbean Sea), and on the Pacific versant from southeastern Oaxaca, Mexico, to west-central Panama; it also has been introduced into southern Florida, in the United States.

Natural history comments: *Ctenosaura similis* is a diurnal, terrestrial to arboreal species that occurs in open habitats on the Fonseca islands. We saw several adults on trees with hollows in them. On sunny mornings, we also saw numerous adults and subadults on the rocky cliffs surrounding Isla Sirena. Unfortunately, in 2013 a group of *Ctenosaura* hunters from El Salvador burned all the vegetation on Isla Sirena to drive the ctenosaurs to a place where they could be captured or shot and taken for food. A similar situation has occurred on other small islands in the Golfo de Fonseca.

Genus *Iguana* Laurent (1768: 47)

One species of *Iguana* occurs in all of Honduras (McCranie, 2015: 369), with the same species found on the Fonseca islands.

***Iguana iguana* (Linnaeus, 1758: 206)**

Common name: Iguana.

Description: *Iguana iguana* is a large and heavy-bodied lizard (SVL in Honduran males [measured] to 381 mm, and in females [measured] to 267 mm; SVL to 580 mm or more in males, and 411 mm or more in females rangewide) with a long tail (TAL/SVL 1.77–2.87 in males, 2.28–2.75 in females). Two or three strongly raised, large scales are present on top of the snout; head crests or casques are absent; the tympanum is distinct and higher than long, with an extremely large, circular scale present ventral to the tympanic region; the supralabials usually are 7 and the infralabials 9 to the level below the mideye; the dorsal body scales are granular, and some are keeled; a distinct middorsal crest composed of 47–58 much enlarged, serrated scales is present between the nuchal and sacral areas, with that crest best developed in adult males; the ventral scales are small, flat, not keeled, and larger than the dorsals; whorls with large spinous scales are absent on the tail; caudal autotomy is absent in adults; and the femoral pores are 12–17 per side in males, and 12–14 in females. The dorsal surfaces of the head and body of most individuals is green in life, often with darker, obscure, wavy crossbands on the body; the dorsal surfaces of large males usually are grayish green, with the middorsal crest scales becoming orange; and the ventral surfaces are pale green in life.

Similar species: No other lizard species on the Fonseca islands has a large scale ventral to tympanic region and reaches such a large size.

General geographic distribution: *Iguana iguana* occurs at low and moderate elevations on the Atlantic versant from northern Veracruz, Mexico, to Paraguay and south-central Brasil (except for most of Yucatan Peninsula), and on the Pacific versant from west-central Sinaloa, Mexico, to extreme northwestern Peru. It also occurs in the Lesser Antilles (some populations apparently are natural, but others are introduced), Trinidad and Tobago, other islands off the north coast of South America, and on numerous other Caribbean islands, including the far offshore Swan Islands of Honduras, and several islands off the Pacific coast. *Iguana iguana* also has been introduced and established in southern Florida and Hawaii, in the United States, Puerto Rico and the Virgin Islands, some of the Bahama Islands, the Dominican Republic, Grand Cayman, St. Croix, the Turks and Caicos, at least some of the Lesser Antilles, Islas Providencia and San Andrés, in Colombia, Fiji, and on the Canary Islands.

Natural history comments: *Iguana iguana* is a diurnal, mostly arboreal species as adults, but juveniles are more terrestrial. The species occurs in coastal areas on the islands, but ventures more inland on some of the larger islands. Adults and their eggs are persecuted as a food source on the Fonseca islands, and thus population numbers have been reduced dramatically.

Family Phrynosomatidae Fitzinger (1843: 17)

Phrynosomatids are morphologically and ecologically diverse lizards. The one genus in Honduras, however, is characterized by the presence of strongly keeled, imbricate, dorsal scales, frequently with mucronate posterior ends, and a dorsally compressed body. Three named species in the genus are known to occur in Honduras (but two new species from the Honduran mainland are being described; JRM, unpublished), with two species occupying the previously named Fonseca islands.

Genus *Sceloporus* Wiegmann (1828: col. 369)

Sceloporus squamosus Bocourt (1874: 212 In A. H. A. Duméril et al., 1870–1909)

Common name: Espinosa.

Description: *Sceloporus squamosus* is a moderately small lizard (SVL in Honduran males and females to 52 mm; SVL to 57 mm rangewide) with a long tail (TAL/SVL 1.70–2.23 in males, 1.44–2.24 in females). Head crests, casques, and raised scales are absent; the ear opening (the tympanum is deeply recessed) is distinct and higher than long, and lacks an enlarged scale ventral to the tympanic region; the 4th supralabial and the 3rd or 4th infralabials are present at a level below the mideye; moveable eyelids are present; the pupil is circular; the dorsal body scales are strongly keeled, imbricate, and mucronate; 27–35 middorsal scales are present between the interparietal and the level above the posterior edge of the hind limb; a middorsal crest is absent; the body is dorsally compressed; the ventral scales are smooth to weakly keeled, imbricate, and with pointed posterior ends; the para-midventrals are 31–41 between the level of the anterior edge of the forelimb and the cloacal scale; the femoral pores are 4–6 per side in males, and 3–6 in females; and a postfemoral dermal pocket is absent. The general dorsal ground color is medium to dark brown; a paler brown longitudinal dorsolateral stripe usually is present on each side of the body; and adults lack ventrolateral patches, or a faint one occasionally is present in males.

Similar species: *Sceloporus squamosus* and *S. variabilis* are the only lizards on the Fonseca islands with strongly keeled and mucronate dorsal body scales and a dorsally compressed body. A postfemoral dermal pocket is present in both sexes and colorful, paired, ventrolateral patches are present in males of *S. variabilis*, but both of these characters are absent in *S. squamosus*.

General geographic distribution: *Sceloporus squamosus* occurs at low and moderate elevations on the Pacific versant from southeastern Chiapas, Mexico, to northwestern Costa Rica, and on the Atlantic versant in southeastern Guatemala and southwestern and north-central Honduras.

Natural history comments: *Sceloporus squamosus* is a diurnal, terrestrial species that usually is seen on the ground. We also found it active on the ground, and saw most individuals in open areas with an abundance of small shrubs. When detected, they remained active but tried to escape by scattering among the shrubs, apparently relying

on camouflage. None of the animals climbed the shrubs in an effort to escape. Also, this species does not sleep exposed at night, like several other diurnal arboreal or semi-arboreal species on the Fonseca islands (i.e., *Norops wellbornae*, *Ctenosaura similis*, *Iguana iguana*).

***Sceloporus variabilis* Wiegmann (1834b: 51)**

Common name: Espinosa.

Description: *Sceloporus variabilis* is a moderately small lizard (SVL in Honduran males to 63 mm, and to 61 mm in females; SVL to 76 mm rangewide) with a moderately-long tail (TAL/SVL 1.20–1.53 in males, 1.00–1.27 in females). Head crests, casques, and raised scales are absent; the ear opening (the tympanum is deeply recessed) is distinct and higher than long; an enlarged scale ventral to the tympanic region is absent; the 3rd or 4th supralabial and usually the 3rd infralabial are present at the level below the mideye; moveable eyelids and a circular pupil are present; the dorsal body scales are strongly keeled, imbricate, and mucronate, with 45–52 present between the interparietal and the level above the posterior edge of the hind limb; a middorsal crest is absent; the body is dorsally compressed; the ventral scales are smooth and imbricate, and most are notched along the posterior edge; the para-midventrals are 56–67 between the level of the anterior edge of the forelimb and the cloacal scale; the femoral pores are 7–11 per side in males, and 8–10 in females; and a postfemoral dermal pocket is present. The general dorsal ground color is medium to dark brown; a paler brown longitudinal dorsolateral body stripe usually is present on each side; and adult males contain paired, pink to rose, ventrolateral patches (in life), with each patch bordered medially by a dark blue or black longitudinal stripe; and, these patches are faint or absent in females.

Similar species: *Sceloporus squamosus* and *S. variabilis* are the only lizards on the Fonseca islands with strongly keeled and mucronate dorsal body scales and a dorsally compressed body. *Sceloporus squamosus* lacks a postfemoral dermal pocket and lacks paired ventrolateral patches, or the patches are faint in occasional males (the dermal pocket is present in both sexes and the ventrolateral patches are distinct in males of *S. variabilis*).

General geographic distribution: *Sceloporus variabilis* occurs at low and moderate elevations on the Atlantic versant from south-central Texas, in the United States, to northeastern and southwestern Nicaragua, and on the Pacific versant from the Isthmus of Tehuantepec region of Mexico to northwestern and marginally in central Costa Rica.

Natural history comments: *Sceloporus variabilis* is a diurnal and frequently terrestrial species that sometimes climbs objects such as rock walls, rock piles, or tree trunks. We usually saw it active on the ground, but occasionally climbing on large rocks. When startled on the ground, this lizard usually runs to climb on the nearest rock pile, rock wall, or tree trunk in an effort to escape. Unlike some diurnal, arboreal, or semi-arboreal lizards on the Fonseca islands, we did not see this species sleeping exposed at night.

Infraorder Scincomorpha Camp (1923: 296)

Skinks are exceedingly variable in their morphology, but most are characterized by their smooth, shiny, cycloid scales underlain by osteoderms comprised of a mosaic of smaller bones, which give their bodies a hard exterior. Two superfamilies, three families, four genera, and seven named species occur in Honduras (McCranie, 2015: 370), with both superfamilies, and two families, genera, and species inhabiting the Fonseca islands.

Superfamily Lygosomoidea Mittleman (1952: 3)

This superfamily contains two families, two genera, and five named species in Honduras (McCranie, 2015: 370), with one family, genus, and species found on the Fonseca islands. The Lygosomoidea is distinguished from the remaining skink on the Fonseca islands by the presence of dorsal scales subequal in size and only a single enlarged primary nuchal scale row (vs. the middorsal row is much enlarged and 7–13 primary nuchal scale rows present in the other island skink).

Family Mabuyidae Mittleman (1952: 5)

Genus *Marisora* Hedges and Conn (2012: 119)

***Marisora brachypoda* Taylor (1956: 308)**

Common name: Escinco.

Description: *Marisora brachypoda* is a medium-sized lizard (SVL of unsexed Honduran specimens to 90 mm; also the maximum reported SVL rangewide) with a relatively long tail (TAL/SVL 1.12–1.94 in a unsexed series). The head is narrow and barely distinct from the attenuate neck; the snout is rather pointed when viewed from above; a lower eyelid window is present; paired internasal and frontoparietal scales are present, with both pairs in contact medially; moveable eyelids are present; the pupil is circular; the tympanum is distinct and deeply recessed; 5 digits are present on the forelimb; the dorsal, lateral, and ventral scales are smooth, cycloid, imbricate, and uniform in size; the paravertebral dorsal scales are arranged in 50–60 longitudinal rows from posterior to the parietal to the level of the cloaca; 1 row of paired primary nuchal scales is present; the scales around midbody are 28 or 30; the ventral scales are arranged in 50–64 longitudinal rows between the mental and the cloacal scale; and femoral-precloacal pores are absent. This shiny lizard has a metallic sheen, generally with gray to brown dorsal surfaces; a broad, dark brown or black lateral stripe extends from the snout and crosses the eye and tympanum to the area of the hind limb; a pale gray, cream, white, or iridescent green ventrolateral stripe extends from the tip of the snout to the groin area; the pale ventrolateral stripe usually involves the adjacent edges or adjacent halves of two scale rows, and rarely courses down the middle of one scale row; and the venter is white or cream, and in the Fonseca island specimens usually lacks gray flecking around the scale edges.

Similar species: *Marisora brachypoda* and *Gymnophthalmus speciosus* are the only lizards on the islands with uniformly-sized, cycloid scales around the body. Five digits are present on the forelimbs of *M. brachypoda* (vs. four digits in *G. speciosus*).

General geographic distribution: *Marisora brachypoda* is found at low, moderate, and rarely intermediate elevations on the Atlantic versant from northeastern Hidalgo, Mexico, to Panama, and on the Pacific versant from southern Jalisco, Mexico, to Panama.

Natural history comments: *Marisora brachypoda* is a diurnal, terrestrial, or arboreal species that is highly adaptable and can be found in a variety of habitats, including edificarian situations. Although frequently active on the ground, it also climbs to bask on tree trunks, fence posts, brush piles, or other elevated objects.

Superfamily Scincoidea Gray (1825: 201)

Family Scincidae Gray (1825: 201)

A single family (Scincidae) is placed in this superfamily, which contains two genera and two named species in Honduras (McCranie, 2015: 370), with one genus and species occurring on the Fonseca islands.

Genus *Mesoscincus* Griffith, Ngo, and Murphy (2000: 10)

***Mesoscincus managuae* (Dunn, 1933: 67)**

Common names: Lincer, Eslaboncillo.

Description: *Mesoscincus managuae* is a medium-sized lizard (SVL to 125 mm rangewide, and to 110 mm in unsexed Honduran specimens) with a moderately long tail (TAL/SVL 0.86–1.63 in unsexed specimens). The head is narrow, and barely distinct from the attenuate neck; the snout is rather pointed when viewed from above; a lower eyelid window is absent; paired internasals and paired frontoparietal scales are present, with the latter pair separated medially; moveable eyelids are present; the pupil is circular; the tympanum is distinct and deeply recessed; 5 digits are present on the forelimb; the dorsal, lateral, and ventral scales are smooth, cycloid, imbricate, and uniform in size, except for the middorsal scale row, which is broadly (transversely) enlarged; the paravertebral dorsal scales are arranged in 50–57 longitudinal rows between the ultimate nuchal row to the level above the posterior margin of the hind limb; 7–13 rows of primary nuchal scales are present; the scales around midbody are 16–18; the ventral scales are arranged in 45–51 rows between the level of the forelimb to the cloacal opening; and femoral-precloacal pores

are absent. The color in life of an adult male (USNM 565830) from Isla Exposición was as follows: the dorsum of the body and tail were Buff (24) with Sepia (119) stripes, except the middorsal stripe was Sepia with Buff mottling; the lateral surface of the tail was paler brown with Sepia stripes; the subcaudal surface was pale brown with dark brown mottling; the side of head was Sepia, except the supralabials were pale brown with Sepia bars; the venter of the head was Buff with a pinkish brown tinge, except the infralabials were pale brown with Sepia bars; and the iris was Sepia.

Similar species: *Mesoscincus managuae* is the only lizard on the Fonseca islands with the middorsal body scale row greatly enlarged transversely, in comparison to the remaining cycloid body scales. It also can be distinguished from the remaining skink on the Fonseca islands by the presence of 7–13 rows of primary nuchal scales (vs. one row in *Marisora*).

General geographic distribution: *Mesoscincus managuae* occurs at low and moderate elevations on the Pacific versant from east-central Guatemala to northwestern Costa Rica, and on the Atlantic versant near Lagos de Managua and Nicaragua in western Nicaragua.

Natural history comments: *Mesoscincus managuae* is a diurnal, terrestrial and semi-arboreal species. We found it on the ground, climbing on boulders or in cracks between boulders. One individual was in a sunny spot on top of a low tree stump, and attempted to escape by running on the ground toward low vegetation. Another was under a large log that took three people to roll over. A rocky slope on Isla del Tigre contained many boulders, and a robust population of *M. managuae* was seen among the loose ledges and cracks between those boulders.

Snakes

The snake fauna of Honduras includes 143 named species placed in two infraorders, two unranked taxa, 12 families, and 68 genera (McCranie, 2015: 371; Wallach, 2016). Of these, 15 species, six families, 14 genera, and both infraorders are known from the Golfo de Fonseca islands.

Infraorder Alethinophidia Nopcsa (1923: 142)

Snakes of the Infraorder Alethinophidia on the Fonseca islands are divided into two unranked subgroups, the Caenophidia and the Henophidia. The former group is for the “advanced” snakes (i.e., the Colubroidea and their closest relatives) and the latter is for the “primitive” snakes (i.e., the boids and their closest relatives). The Alethinophidia on the Fonseca islands consists of two unranked taxa in five families, 13 genera, and 14 named species. In contrast, the Alethinophidia in all of Honduras contains both unranked taxa, nine families, 64 genera, and 134 named species (McCranie, 2015: 371).

Caenophidia Hoffstetter (1939: 4)

Members of the Caenophidia on the Fonseca islands differ most notably from the single island member of the Henophidia by the presence of enlarged ventrals that extend across the entire width of the venter, except for the marine snake *Hydrophis platurus*. In the Caenophidia, the mandible also typically is longer than the skull. In *H. platurus* the ventrals are extremely narrow, and this snake also can be easily distinguished from the remaining Caenophidia by the presence of an oar-like tail associated with its marine lifestyle. The Fonseca island Caenophidia consists of four families, 12 genera, and 13 named species. In contrast, the Caenophidia in all of Honduras contains six families, 60 genera, and 130 named species (McCranie, 2015: 371).

Family Colubridae Opper (1811a: 376)

Six genera comprised of seven named species of the Colubridae are known from the Fonseca islands, with 21 genera containing 43 named species occurring in all of Honduras (McCranie, 2015: 371). Members of this family on the Fonseca islands are characterized by the presence of wide ventrals that extend the entire width of the venter, and the hemipenes are symmetrical or asymmetrical with a simple sulcus spermaticus; the hemipenes usually are noncapitate, with one known exception—that of *Tantilla armillata* apparently is semicapitate. Although a plethora of morphological works on the genus *Tantilla* exist, hemipenial variation in this genus has not been studied and semicapitate hemipenes likely are present in other species.

Genus *Drymarchon* Fitzinger (1843: 26)

One species of *Drymarchon* occurs on the Fonseca islands and in all of Honduras (McCranie, 2015: 372).

Drymarchon melanurus (A. M. C. Duméril, Bibron, and Duméril, 1854a: 224)

Common names: Zumbadora, Palancóatl, Cribo.

Description: *Drymarchon melanurus* is a large snake (TOL to 2,950 mm rangewide; TOL of longest Honduran specimen [a female] 2,896 mm) with a moderately long tail (0.17–0.20 of TOL in males, 0.16–0.20 in females). The head is distinctly wider than the neck; two scales (loreal, preocular) are present between the nasal and the eye; the supralabials are 7–9 (usually 8), with the 4th and 5th bordering the eye; the infralabials are 8–9 (usually 8), with the first pair in contact medially posterior to the mental; two pairs of enlarged, paired chinshields are present; a mental groove is present; the pupil is circular; the ventrals are 192–204 in males, and 184–207 in females; the divided subcaudals are 71–79 in males, and 64–80 in females; the cloacal scute is entire; the dorsal scales are smooth with paired apical pits, and usually arranged in 17-17-15 rows; and the dentition is aglyphous. The coloration shortly after death for the single specimen from the Fonseca islands was as follows: the dorsum was dark brown anteriorly, grading to paler brown on the posterior portion of the body and tail; a diagonal black bar, about 1½ scale rows wide, begins on about the 5th scale row on the neck and extends onto the lateral portion of the ventrals; the anterior ventrals were pale yellow, with a few black markings on the lateral edges of some scales, and ventrals becoming increasingly infused with paler brown near the cloaca and onto the tail; the head was dark brown, with black pigment present on the posterior edges of supralabials 4–7; the chin was cream, save for black posterior edges on infralabials 4–6.

Similar species: *Drymarchon melanurus*, by far, is the largest colubrid on the Fonseca islands and the only snake with a distinct black diagonal bar on each side of the neck.

General geographic distribution: *Drymarchon melanurus* occurs at low, moderate, and occasionally intermediate elevations on the Atlantic versant from south-central Texas, in the United States, to northwestern and north-central Venezuela, and on the Pacific versant from southern Sonora, Mexico, to northwestern Peru. It also occurs on Las Islas Marias, Nayarit, Mexico, and on the Islas de la Bahía, Honduras.

Natural history comments: The single specimen of *Drymarchon melanurus* from Isla del Tigre was killed by a local resident in disturbed second growth forest. This species is diurnal and terrestrial.

Remarks: McCranie (2011: 117) stated that, “it is also quite possible that two species are involved in the Honduran specimens. Specimens from the Atlantic versant have black tails and posterior portions of the body, whereas those from the Pacific versant have those parts brown.” McCranie (2011) also noted some differences in ventral scale counts between specimens from the two versants in Honduras.

Genus *Leptodrymus* Amaral (1927: 28)

This monotypic genus occurs on the Fonseca islands and on the mainland of Honduras.

Leptodrymus pulcherrimus (Cope, 1874: 65)

Common name: Zumbadora.

Description: *Leptodrymus pulcherrimus* is a moderate-sized snake (TOL to 1,600 mm rangewide; TOL of the longest Honduran specimen [a male] 1,095 mm) with a long tail (0.33–0.37 of TOL in males, 0.36–0.37 in females). The head is somewhat wider than the neck; the postnasal contacts the loreal; the supralabials are 9 (rarely 10), with the 4th, 5th, and 6th, or the 5th and 6th bordering the eye; the infralabials are 9–10 (usually 10), with the first pair in contact medially posterior to the mental; two pairs of enlarged, chinshields are present; a mental groove is present; the pupil is circular; the ventrals are 191–203 in males, and 204–207 in females; the divided subcaudals are 142–152 in males, and 142–147 in females; the cloacal scute is divided; the dorsal scales are smooth, with paired apical pits, and arranged in 17-17-15 rows on the body; and the dentition is aglyphous. The coloration in life of a specimen (USNM 565805) from the Fonseca islands was as follows: the middorsum was Sayal Brown (Color 223C), becoming Tawny Olive (223B) on the posterior two-thirds of the body; the middorsum was bordered on both sides by broad, distinct Jet Black (89) paravertebral stripes; the middorsal part of the tail was pale brown with a green tinge basally, quickly becoming greener until Opaline Green (162D) on the posterior two-thirds; the top of head was Shamrock Green

(162B); the supralabials and the chin were cream, with the remainder of the ventral and subcaudal surfaces creamy brown; the tongue was red with *Sepia* (119) tips; and the iris was golden brown dorsally and dark brown elsewhere.

Similar species: *Leptodrymus pulcherrimus* is the only snake on the Fonseca islands with paired, broad, black paravertebral stripes on the body and tail, the vertebral area some shade of orange in life, and the top of the head bright green.

General geographic distribution: *Leptodrymus pulcherrimus* occurs at low and moderate elevations on the Pacific versant from southwestern Guatemala to central Costa Rica, and on the Atlantic versant in several interior valleys of Guatemala and Honduras.

Natural history comments: *Leptodrymus pulcherrimus* is a diurnal, terrestrial or semi-arboreal snake. One individual on the Fonseca islands was active on the ground during late afternoon, and another was sleeping in low vegetation about three hours after dark.

Genus *Oxybelis* Wagler (1830: 183)

One named species of *Oxybelis* occurs on the Fonseca islands, and four named species in all of Honduras (McCranie, 2015: 372).

Oxybelis aeneus (Wagler, 1824: 12)

Common name: Bejuquilla.

Description: *Oxybelis aeneus* is a long (TOL to 1,700 mm rangewide; TOL of longest Honduran specimen [a male] 1,455 mm) and slender snake, with an extremely long and attenuate tail (0.40–0.43 of TOL in males, 0.39–0.42 in females). The head is elongate and distinctly wider than the neck; the snout is somewhat pointed in dorsal and lateral profiles; two scales (a preocular and a lateral extension of each prefrontal) are present between the nasal and eye; the supralabials are 6–10 (usually 8 or 9), with the 4th, 5th, and 6th usually bordering the eye; the infralabials are 6–11 (usually 8 or 9), with the first pair in contact posterior to the mental; two pairs of enlarged, paired chin-shields are present; a mental groove is present; the pupil is circular; the ventrals are 176–194 in males, and 181–198 in females; the subcaudals are divided, 176–194 in males, and 166–198 in females; the cloacal scute usually is divided; the dorsal scales are smooth to weakly keeled and lack apical pits, and usually arranged in 17-(15–17)-13 rows; and the dentition is opisthognathous. The general coloration of the body is brown, flecked with dark brown; the top of the head is reddish brown; the supralabials are pale yellow, edged dorsally by a thin, dark grayish brown stripe; the ventral surfaces of the body and tail are pale pinkish tan; the chin and venter of the neck are white, with mahogany red smudging medially; and the iris is pale iridescent bronze dorsally, and olive green ventrally.

Similar species: *Oxybelis aeneus* is hard to confuse with any other snake on the Fonseca islands. The slender body with an extremely long and attenuate tail (nearly as many subcaudals as ventrals), combined with uniform brown dorsal surfaces and a lateral extension of each prefrontal present between the eye and nasal, distinguishes this snake from all other species on the islands.

General geographic distribution: *Oxybelis aeneus* occurs at low, moderate, and occasionally intermediate elevations on the Atlantic versant from eastern Coahuila, south-central Nuevo León and central Tamaulipas, Mexico, and on the Pacific versant from extreme southern Arizona, in the United States, to eastern Bolivia and southern Brazil east of the Andes and northwestern Peru west of the Andes. It also occurs on the following islands: Las Islas Marías, Nayarit, and Isla Mujeres, Quintana Roo, Mexico; Islas de la Bahía, Honduras; Islas del Maíz, Nicaragua; Islas de Coiba and Perlas, Panama; Trinidad and Tobago; and several smaller islands off the coast of Venezuela.

Natural history comments: *Oxybelis aeneus* is a diurnal and largely arboreal species found in understory vegetation in subhumid habitats on the Fonseca islands. We found this species in disturbed gallery forest and in a semi-natural open forest, but overall it was difficult to locate on the islands. On the mainland and on the Bay Islands, occasional individuals of *O. aeneus* were seen sleeping in vegetation at night, up to about 10 m above the ground.

Remarks: Lovich et al. (2010: 114) first reported this snake from Isla del Tigre.

Genus *Stenorrhina* A. M. C. Duméril (1853: 490)

One named species of *Stenorrhina* occurs on the Fonseca islands and two named species are found on the Honduran mainland (McCranie, 2015: 373; the only two named species in this genus).

Stenorrhina freminvillii A. M. C. Duméril, Bibron, and Duméril (1854b: 868)

Common name: Alacranera.

Description: *Stenorrhina freminvillii* is a moderate-sized snake (TOL to ca. 800 mm rangewide; TOL of longest Honduran specimen [a female] 652 mm), with a relatively short tail (0.14–0.19 of TOL in males, 0.12–0.17 in females). The head is barely distinct from the neck; an enlarged rostral forms a shovel-shaped snout; paired internasals are fused to the anterior section of each nasal; the supralabials are 6–7 (usually 7), with the 3rd and 4th bordering the eye; the infralabials are 6–8 (usually 7), with the first pair in contact medially posterior to the mental; two pairs of enlarged, paired chinshields are present; a mental groove is present; the pupil is circular; the ventrals are 160–169 in males, and 165–173 in females; the subcaudals are divided, 36–42 in males, and 29–36 in females; the cloacal scute is divided; the dorsal scales are smooth and lack apical pits, and usually are arranged in 17 (rarely 15 or 19)-17-17 rows; and the dentition is opistoglyphous (slightly enlarged posterior maxillary teeth). The coloration in life of a juvenile female from the mainland was as follows: the dorsal surface of the body was Clay Color (26) with Jet Black (89) stripes on the adjacent halves of dorsal scale rows 3–4 on each side, scale row 6, adjacent tips of scale rows 5 and 7 on each side, and on the vertebral row and adjacent third of the paravertebral rows; the top of head was Clay Color with Jet Black markings on the frontal, supraoculars, and parietals; and the ventral surfaces of the chin, trunk, and tail were pale pink.

Similar species: The shovel-shaped snout and the paired internasals fused to the anterior section of each nasal are characters unique to *Stenorrhina freminvillii* on the Fonseca islands.

General geographic distribution: *Stenorrhina freminvillii* occurs at low and moderate elevations on the Atlantic versant from central Veracruz, Mexico, to northern Honduras, and on the Pacific versant from southern Michoacán, Mexico, to central Costa Rica. Apparently disjunct populations occur on the Atlantic versant of north-eastern and western Nicaragua, and marginally in northern and central Costa Rica.

Natural history comments: This diurnal and terrestrial species is found in open areas in subhumid habitats. The single specimen from the Fonseca islands was on the ground during mid-morning.

Genus *Tantilla* Baird and Girard (1853: 131)

Two named species of *Tantilla* are found on the Fonseca islands, with nine named species occurring in all of Honduras (McCranie, 2015: 373).

Tantilla armillata Cope (1875: 143)

Common name: Culebrita Lineada.

Description: *Tantilla armillata* is a small snake (TOL to 490 mm rangewide; TOL of longest Honduran specimen [a female] 314 mm) with a short tail (0.19–0.22 of TOL in males, 0.17–0.24 in females). The head is only slightly distinct from the neck; a loreal is absent; a preocular usually contacts the nasal; the supralabials are 7, with the 3rd and 4th bordering the eye; the infralabials are 6, with the first pair separated medially by the mental and the anterior pair of chinshields; the enlarged chinshields are in two pairs; a mental groove is present; the pupil is circular; the ventrals are 157–174 in males, and 161–177 in females; the divided subcaudals are 44–65 in males, and 42–60 in females; the cloacal scute is divided; the dorsal scales are smooth and lack apical pits, and are arranged in 15-15-15 rows; and the dentition is opistoglyphous. The color in life of USNM 580809, from Isla El Pacar was as follows: the dorsal surface of the body was Drab (Color 27) with a Blackish Neutral Gray (82) middorsal line; a Tawny (38) nuchal band was bordered anteriorly by a Dark Brownish Olive (129) head cap; orange-brown supralabial spots were present anterior and posterior to the eye, separated by a brown subocular spot; the chin and throat were Cinnamon (39) with white mottling on the neck; and the ventral surfaces were Cinnamon on the anterior third of the body, becoming Tawny at midbody and posteriorly, including all of the subcaudal surface.

Similar species: *Tantilla armillata* and *T. vermiformis* are the only small (TOL to 490 mm in the former, and to ca. 160 mm in latter), slender snakes on the Fonseca islands with 15-15-15 dorsal scale rows and a lineate dorsal pattern. The tail of *T. vermiformis* is extremely short, with only 22 subcaudals and a TAL/TOL of 0.12 in the single known Honduran specimen.

General geographic distribution: *Tantilla armillata* occurs at low and moderate elevations on the Pacific versant from Guatemala to central Costa Rica, and on the Atlantic versant in disjunct populations in central and northeastern Honduras and in central Costa Rica.

Natural history comments: *Tantilla armillata* is a semifossorial, diurnal species that occurs in open areas in subhumid habitats. It usually is found in moist conditions under ground debris such as logs, rocks, and trash piles, but occasionally is seen crawling on the ground in grassy areas. The specimen from the Fonseca islands was under a moist log during mid-morning in a slightly forested area, and quickly began to dehydrate in the collecting bag and while being photographed, until we provided it with moist debris.

***Tantilla vermiformis* (Hallowell, 1861: 484)**

Common name: Culebrita de la Cola Corta.

Description: *Tantilla vermiformis* is a small snake (TOL to ca. 160 mm rangewide; 73 mm TOL in a specimen from the Fonseca islands) with an extremely short tail (TAL/TOL 0.12 in single Honduran specimen [a female]). The head is barely distinct from the neck; a loreal is absent; the preocular usually contacts the nasal; the supralabials are 7, with the 3rd and 4th bordering the eye; the infralabials are 6–7, with the first pair separated medially by the mental and the anterior pair of chinshields; the enlarged chinshields are in two pairs; a mental groove is present; the pupil is circular; the ventrals are 128; the divided subcaudals are 22; the cloacal scute is divided; the dorsal scales are smooth and lack apical pits, and are arranged in 15-15-15 rows; and the dentition is opisthognathous. The color in life of USNM 579681 from Isla Exposición was as follows: the dorsal surface of the body was Brownish Olive (Color 29) with a Sepia (119) middorsal stripe ending on the posterior portion of the body near the level above the cloaca; the top of the head was Olive Brown (28); a yellowish brown nuchal collar was present; the iris was Olive Brown; the chin and belly were Glaucous (80); and the subcaudal surface was Brownish Olive.

Similar species: *Tantilla vermiformis* and *T. armillata* are the only small, slender snakes on the Fonseca islands with 15-15-15 dorsal scale rows and a lineate dorsal pattern. *Tantilla armillata* is larger, with a maximum known TOL of 490 mm, and a tail with 42–65 subcaudals, and a TAL/TOL of 0.18–0.22. By comparison, *T. vermiformis* is the smallest colubrid on the islands, with a maximum known TOL of ca. 160 mm (73 mm in island specimen), and an extremely short tail, with the single known specimen with only 22 subcaudals and a TAL/TOL of only 0.12.

General geographic distribution: *Tantilla vermiformis* occurs at low elevations on the Pacific versant from Guatemala to central Costa Rica, and on the Atlantic versant from the Motagua Valley in east-central Guatemala.

Natural history comments: *Tantilla vermiformis* is a diurnal, semifossorial species found in moist conditions in subhumid habitats. We found the specimen from the Fonseca islands during mid-morning under small, loose rocks on a steep-sided, slippery hillside in a slightly forested area. This specimen of *T. vermiformis* is the only known insular record for this species.

Genus *Trimorphodon* Cope (1862a: 297)

This genus contains one named species on the Fonseca islands, and on the Honduran mainland (McCranie, 2015: 373).

***Trimorphodon quadruplex* Smith (1941: 157)**

Common names: Culebra de Ojos de Gato, Ilamacoa.

Description: *Trimorphodon quadruplex* is a moderately large snake (TOL to ca. 1,800 mm rangewide; TOL of longest Honduran male 1,564 mm) with a relatively long tail (0.14–0.20 of TOL in males, and 0.15–0.19 in females). The head is distinctly wider than the neck, and generally triangular in shape when in a defensive posture; 2–3 loreals and 3 preoculars are present; the supralabials are 8–10, with the 4th and 5th bordering the eye; the

infralabials are 11–13 (usually 12), with the first pair in contact medially posterior to the mental, with the 3rd to the 5th contacting the anterior pair of chinshields; the posterior chinshields also are paired; a mental groove is present; the pupil is vertically elliptical; the ventrals are 237–265 in males, and 241–262 in females; the divided subcaudals are 77–95 in males, and 70–89 in females; the cloacal scute usually is divided; the dorsal scales are smooth, but a few usually are weakly keeled on the posterior part of the body, with paired apical pits, and arranged in (23–26)-(21–26)-(16–19) rows; and the dentition is opisthogyphous. The dorsal surfaces of the body and tail generally are grayish brown with 18–28 darker brown middorsal blotches on the body; these blotches are outlined with black and contain grayish brown centers; the top of the head is brown, with a darker brown to black chevron-shaped marking extending from near the nuchal area onto the parietals and frontal; the supralabials are pale brown to cream, with dark brown flecking present along most sutures; the ventral surface of the body is pale grayish brown, with dark brown blotches on the lateral edges of most ventrals; the chin and throat regions are pale brown with some brown flecking; the subcaudal surface is pale grayish brown, flecked with darker grayish brown; and the iris usually is pale yellow, but heavily reticulated with pale brown.

Similar species: *Trimorphodon quadruplex* is the only snake on the Fonseca islands with (23–26)-(21–26)-(16–19) dorsal scale rows that are smooth anteriorly on the body, and usually weakly keeled posteriorly. Another distinguishing character is the dark brown chevron-shaped marking on the nuchal region and on top of the head.

General geographic distribution: *Trimorphodon quadruplex* occurs at low and moderate elevations on the Pacific versant from southeastern Guatemala to northwestern Costa Rica, and on the Atlantic versant in isolated populations in eastern Guatemala, northern Honduras, and extreme northeastern Nicaragua. Recently, a specimen of *T. quadruplex* was legally collected in pine savanna in northeastern Honduras, but the specimen remains in Honduras awaiting export permits from the ICF (the Honduran agency in charge of issuing permits).

Natural history comments: *Trimorphodon quadruplex* is a nocturnal, arboreal or terrestrial species that inhabits subhumid areas. On the Fonseca islands, we found it active on the ground and in low vegetation, as well as in tree holes used for daytime retreats. One tree hole contained two large adults. Although this species is opisthogyphous, it does not attempt to bite when handled gently (JRM, pers. observ.).

Family Dipsadidae Bonaparte (1838: 124)

On the Fonseca islands, the family Dipsadidae contains three named species placed in three genera, whereas in all of Honduras it is represented by 27 genera containing 62 named species (McCranie, 2015: 374). McCranie (2011: 81) stated “Dipsadines are characterized by having a bifurcated sulcus spermaticus, or if the sulcus spermaticus is simple, the hemipenes are uncapped.” In two species of *Imantodes* A. M. C. Duméril (1853: 507) from the Honduran mainland classified as dipsadines, however, a simple, semicapitate sulcus spermaticus is present. This hemipenial character is present in most colubrids, and supposedly is a diagnostic character of the Colubridae (McCranie, 2011).

Genus *Conophis* Peters (1860: 519)

One named species of *Conophis* occurs on the Fonseca islands and on the Honduran mainland (McCranie, 2015: 374).

Conophis lineatus (A. M. C. Duméril, Bibron, and Duméril, 1854b: 936)

Common name: Guarda Camino.

Description: *Conophis lineatus* is a medium-sized snake (TOL to 1,167 mm rangewide; TOL of longest Honduran specimen [a female] 724 mm) with a relatively long tail (0.23–0.25 of TOL in males, 0.18–0.23 in females). The head is slightly wider than the neck, and the snout is cone-shaped; two scales (loreal, preocular) are present between the postnasal and the eye; the supralabials are 7–8 (usually 8), with the 3rd and 4th, or 4th and 5th bordering the eye; the infralabials are 8–11 (usually 9 or 10), with the first pair in contact medially posterior to the mental; two pairs of enlarged, paired chinshields are present; a mental groove is present; the pupil is circular; the ventrals are 153–165 in males, and 156–178 in females; the divided subcaudals are 64–80 in males, and 57–78 in females; the cloacal scute is divided; the dorsal scales are smooth and lack apical pits, and are arranged in 19-19-17 rows; and the dentition is opisthogyphous. The dorsal surfaces of the head, body, and tail are generally pale to dark brown, with a variable number of longitudinal darker brown to black stripes; dark brown stripes usually are present

on the body, along the middle of scale rows 1, 4, and 7; supplemental dark brown stripes sometimes are present on portions of scale rows 2–3 and 8–9; a dark grayish, brown-edged, olive stripe begins on the snout and continues onto the temporal region of the head; and the ventral surfaces of the body and tail are pale grayish white, with gray smudging present on the otherwise white chin.

Similar species: The generally brown body with distinct dark brown to black longitudinal stripes, dorsal scales arranged in 19-19-17 rows, and a cone-shaped head and snout distinguishes *Conophis lineatus* from all other snakes on the Fonseca islands.

General geographic distribution: *Conophis lineatus* is found at low and moderate elevations on the Atlantic versant from northern Veracruz, Mexico, to north-central Nicaragua, and on the Pacific versant from western Chiapas, Mexico, to north-central Costa Rica.

Natural history comments: *Conophis lineatus* is a diurnal, terrestrial species found in open, subhumid habitats. On the Fonseca islands, we found it crawling on the ground and under rocks. This snake is a voracious biter, and its enlarged rear teeth carry a venom that sometimes causes painful bites. The snake is difficult to handle because of its irritable attitude, quick movements, and an ability to twist its head while being secured, and concurrently lifting the upper lip to expose the fang and twisting the head sideways in an attempt to bite. JRM was bitten four times by an irritated *C. lineatus* he was capturing or photographing, and only experienced excessive bleeding at the site of one bite for about 5 min, and on another occasion, felt a slight tingling sensation on top of his head. AG was bitten on the hand by a *C. lineatus* he was capturing on the Fonseca islands, and did not experience a reaction. The venom of this species, however, has been shown to produce much more serious reactions in humans (see Savage, 2002, and references therein).

Genus *Enulius* Cope (1871: 558)

One named species of *Enulius* is known from the Fonseca islands, and three named species occur in all of Honduras (McCranie, 2015: 378).

Enulius flavitorques (Cope, 1869: 307)

Common name: Coluda.

Description: *Enulius flavitorques* is a small (TOL 495 mm rangewide; TOL of longest Honduran specimen [a female] 416 mm), uniformly-colored snake, except for a pale nuchal collar, with an extremely long and thick tail (0.30–0.36 of TOL in males, 0.27–0.31 in females, but the tail frequently is incomplete). The head is only slightly distinct from the neck; the loreal is single and borders the eye; a preocular is absent; the supralabials are 6–8 (usually 7), with the 3rd and 4th usually bordering the eye; the infralabials are 6–8 (usually 7), with the first pair in contact medially posterior to the mental; the anterior and posterior chinshields are enlarged, and both are paired; a mental groove is present; the pupil is circular; the ventrals are 167–188 in males, and 184–212 in females; the divided subcaudals are 93–114 in males, and 85–96 in females, but the tail often is incomplete; the cloacal scute is divided; the dorsal scales are smooth, with a single apical pit on many scales, and arranged in 15-17-17 or 15-15-15 rows; and the dentition is opisthognathous. The color in life of an adult female from the mainland (UF 142717) was as follows: the dorsal surfaces of the body and tail were Blackish Neutral Gray (Color 82); the ventral surfaces of the body and tail were Pale Neutral Gray (86); the nuchal collar was Sulphur Yellow (57), grading laterally into pale pinkish gray; the chin was pale pinkish gray; and the iris was Jet Black (89).

Similar species: The uniform dark brown or black dorsal coloration, except for a yellow nuchal collar, and the extremely long and thick tail that often is incomplete, are characters that can be used to distinguish *Enulius flavitorques* from all other snakes on the Fonseca islands.

General geographic distribution: *Enulius flavitorques* occurs at low and moderate elevations on the Pacific versant from southern Jalisco, Mexico, to northern Colombia, and on the Atlantic versant this species is found in disjunct populations in east-central Guerrero and adjacent southwestern Puebla, and in Chiapas, Mexico, as well as in Honduras, Panama, northern Colombia, and northwestern Venezuela.

Natural history comments: *Enulius flavitorques* is a nocturnal and semifossorial species that occurs in subhumid habitats. This species sometimes is seen crawling on the ground at night, and around rock piles and rock walls. We also found it under rocks during the day.

Genus *Leptodeira* Fitzinger (1843: 27)

One named species of *Leptodeira* occurs on the Fonseca islands, and three in all of Honduras (McCranie, 2015: 375).

Leptodeira rhombifera Günther (1872: 32)

Common names: Culebra de Ojos de Gato, Escombrera.

Description: *Leptodeira rhombifera* is a medium-sized snake (TOL to 790 mm rangewide; TOL of longest Honduran specimen [a female] 721 mm+) with a moderately long tail (0.22–0.27 of TOL in males, 0.18–0.26 in females). The head is distinctly wider than the neck, and somewhat triangular in shape when in a defensive posture; two or more scales (a single loreal and 1–3 [usually 2] preoculars) are present between the postnasal and the eye; the supralabials are 8, with the 4th and 5th bordering the eye; the infralabials are 8–11 (usually 10), with the first pair in contact medially posterior to the mental; two pairs of enlarged, paired chinshields are present; a mental groove is present; the pupil is vertically elliptical; the ventrals are 159–173 in males, and 161–175 in females; the divided subcaudals are 68–88 in males, and 62–79 in females; the cloacal scute is divided; the dorsal scales are smooth (in males, weak keels occasionally are present in the supracloacal region) and usually paired apical pits are present, and arranged in (17–25)-(21–25)-(15–19) rows; and the dentition is opisthoglyphous. The general dorsal coloration ranges from orange-brown to brown; 27–45 dark brown dorsal blotches are present, which are narrowly outlined with orange-brown and do not extend to the ventrals; dark brown lateral spots alternate with the dark brown dorsal blotches; a dark brown nape stripe is present on top of head, and begins on the posterior tips of the parietals and usually connects with a dark brown nuchal blotch; a postorbital dark brown stripe extends downward to the angle of the mouth; and the ventral surfaces of the head, body, and tail are uniform pale brown to cream.

Similar species: *Leptodeira rhombifera* differs from all other snakes on the Fonseca islands, except for *Trimorphodon quadruplex*, in its ability to distinctly inflate the head wider than the neck in a defensive posture, and the viperid *Agkistrodon howardgloydi*, which displays a more bulbous and somewhat triangular-shaped head. *Trimorphodon quadruplex* is a longer snake (TOL to about 1,800 mm), with more ventrals (237–265), and 2–3 loreals, and *A. howardgloydi* is a dangerous venomous snake with a deep pit present between the nostril and eye.

General geographic distribution: *Leptodeira rhombifera* occurs at low and moderate elevations on the Atlantic versant (apparently in disjunct populations) from central and southern Guatemala to southeastern Nicaragua and adjacent northeastern Costa Rica, and in central Panama, and on the Pacific versant from southwestern Guatemala to central Panama.

Natural history comments: *Leptodeira rhombifera* is a nocturnal, arboreal and terrestrial snake that usually is found near freshwater sources. The only known insular locality in the Golfo de Fonseca region is Laguna de Agua on Isla del Tigre, where we found it active on the ground the one night we worked the lagoon. One also crawled out of a decaying *Trachemys emolli* shell when the shell was picked up. In general, this is a docile snake that seldom attempts to bite (JRM, pers. observ.). No reaction was felt from the single exception.

Family Elapidae Boie (1827: col. 981)

All elapids are venomous, and their dentition is proteroglyphous on a relatively non-rotating maxilla. Two genera containing two named species of Elapidae (one marine snake, one terrestrial coralsnake) are known from the Fonseca islands and the surrounding waters, and two genera containing six species (five terrestrial coralsnakes) are known to occur in all of Honduras (McCranie, 2015: 376). The marine snake occurring in Honduran territory gives birth to living young in the water, whereas the terrestrial coralsnakes deposit eggs on the ground.

Genus *Hydrophis* Latreille (1801: 193, *In* Sonnini and Latreille, 1801b)

One marine species of this family enters the marine waters of the Golfo de Fonseca.

Remarks: Until recently, the Honduran species of this genus were known as *Pelamis platura* or *P. platurus*.

Hydrophis platurus (Linnaeus, 1766: 391)

Common name: Culebra del Már Pacífico.

Description: *Hydrophis platurus* is a moderate-sized (TOL in the eastern Pacific populations to 833 mm, TOL in largest Honduran specimen [a female; all Honduran females] 761 mm), broadly striped, entirely aquatic and marine snake with a laterally compressed body, and a short, laterally flattened oar-like tail (TAL/TOL 0.11–0.12 in females). The head is barely wider than the neck; internasals and usually loreals are absent; the supralabials are 8–9, and all are separated from the eye; the infralabials are 9–12, with the first pair usually in contact medially posterior to mental; definite chinshields are absent; a mental groove is absent; the pupil is circular; the ventrals are tiny and divided by a medial groove, or about the same size as the adjacent scales, and number about 320–379 (in females); the subcaudals are 46–51 (in females), single, tiny and only slightly larger than the adjacent scales; the dorsal scales are smooth, except for the lowermost 8–19 rows, on which 2–3 small tubercles are present on some rows, lack apical pits, and number about 54–55 rows at midbody. The general dorsal color of the body contains a broad, black, dorsal stripe, and a broad, cream, lateral stripe; broad, brown, ventral and ventrolateral stripes also are present; the top of the head is black, and the lateral surface of the head is black; the tail is cream with black partial crossbands present on the upper and lower parts; and large, black spots also are present ventrally on the tail.

Similar species: *Hydrophis platurus* is the only marine snake in the Golfo de Fonseca, and can be distinguished from all remaining Honduran snakes by its laterally flattened, oar-like tail, and its tiny and irregular ventral scales.

General geographic distribution: *Hydrophis platurus* occurs in tropical and subtropical seas from the east coast of Africa eastward along the southern coast of Asia, throughout Indonesia, the coastal waters of Australia (except for the southern waters), northward to Japanese waters, and eastward to the mid-southern Pacific. It also is distributed in the waters around the Hawaiian Islands, the Galapagos Islands, and the west coast of the Western Hemisphere from Baja California and Sonora, Mexico, to about northwestern Ecuador.

Natural history comments: *Hydrophis platurus* is a pelagic snake that occasionally washes up on the beaches of various islands and the mainland in the Golfo de Fonseca region. Most people living along the Pacific coast and on the islands who occasionally encounter this snake believe it is an eel.

Genus *Micrurus* Wagler (1824: 48)

One named terrestrial species of *Micrurus* occurs on the Fonseca islands, with five named species found in all of Honduras (McCranie, 2015: 376).

Micrurus nigrocinctus (Girard, 1854: 226)

Common names: Coral, Coralillo.

Description: *Micrurus nigrocinctus* is medium-sized (TOL to 1,194 mm in a Honduran female) snake with a short tail (0.13–0.17 of TOL in males, 0.09–0.13 in females). The head is slightly wider than the neck; a single scale is present between the postnasal scale and the eye; the supralabials are 7, with the 3rd and 4th bordering the eye; the infralabials are 7, with the first pair in contact medially posterior to the mental; two pairs of enlarged, paired chinshields are present; a mental groove is present; the pupil is subcircular; the ventrals are 190–209 in males, and 206–224 in females; most subcaudals are divided, and number 42–56 in males and 32–43 in females; the cloacal scute is divided; and the dorsal scales are smooth without apical pits, and arranged in 15-15-15 rows. The general dorsal coloration of individuals from the Fonseca islands and along the Pacific versant of Honduras consists of tricolor monad rings of red, pale yellow (or white), and black, with the black rings separated from the red rings by yellow (or white); the colors of the rings are slightly paler ventrally than dorsally; the head is black from the snout to the level of the eye, followed by a pale yellow parietal band, which in turn is followed by a black nuchal band; and the iris is dark gray.

Similar species: No other tricolored black, yellow (white), and red-ringed snake is known from the Fonseca islands.

General geographic distribution: *Micrurus nigrocinctus* occurs on the Pacific versant at low, moderate, and occasionally intermediate elevations from southeastern Oaxaca, Mexico, to central Panama. The population on the Atlantic versant of Central America apparently represents a different species (the “true” *M. nigrocinctus*?), but the taxonomy of both populations remains poorly-known.

Natural history comments: *Micrurus nigrocinctus* is a nocturnal or diurnal, semifossorial or ground level occurring snake. The single available specimen from the Fonseca islands was found DOR, but we did not encounter this snake; we were told of a recent “coralsnake” sighting on Isla Exposición, which could have been this *Micrurus*.

Remarks: More than one species likely occurs in the *Micrurus nigrocinctus* complex in Honduras. The name *M. zunilensis* Schmidt (1932: 266; type locality on the Pacific versant of southwestern Guatemala) is available for the Pacific versant and Fonseca islands populations in Honduras. The population on the Atlantic versant of Central America apparently represents a different species (JRM, unpublished).

Family Viperidae Opper (1811a: 376)

The maxillary dentition of this family of highly venomous snakes is solenoglyphous. In the Western Hemisphere, all species are characterized by the presence of a loreal sensory pit located between the eye and nostril, and they sometimes are placed in the subfamily Crotalinae Opper (1811a: 387). Only one genus and one named species is known from the Fonseca islands (but see Species of Probable Occurrence on the Fonseca Islands, Honduras), and seven genera containing 11–13 named species occur in all of Honduras (see McCranie, 2015: 377 and *Agkistrodon* account below).

Genus *Agkistrodon* Palisot de Beauvoux (1799: 381)

The number of valid species of *Agkistrodon* is not well-known. One species occurs on the Fonseca Islands, and by using direct morphological examination of voucher specimens only one species has been shown to occur in all of Honduras (see Remarks).

Agkistrodon howardgloydi Conant (1984: 135)

Common names: Barba Amarilla, Cantil.

Description: *Agkistrodon howardgloydi* is a stout snake (TOL to about 800 mm rangewide, TOL of largest Honduran specimen [a female; males from Honduras not known] 768 mm+), with a relatively short tail (TAL/TOL 0.16–0.19 in females). The head is much wider than the neck, and triangular-shaped; the loreal is single, and usually two suboculars are present; the supralabials are 8, with none bordering the eye; the infralabials are 10–11, with the first pair in contact medially posterior to the mental; only one pair of rather small chinshields is present; a mental groove is present; the pupil is vertically elliptical; 5–6 scale rows are present between the small chinshields and the first preventral; the ventrals are 128–133 (in three Honduran females); the subcaudals 55–75 (in the three females), and some subcaudals are entire and others are divided; the cloacal scute is entire; the dorsal scales are keeled, with paired apical pits, and arranged in (25–27)-(23–25)-(18–21) rows. The general dorsal coloration of the head is brown with pale brown mottling; the dorsal surface of the body is brown with pale brown crossbands, of which some can be diamond-shaped; the dorsal surface of the tail is brown with pale brown crossbands anteriorly; the lateral surface of the head is pale brown with a prominent yellow stripe extending along the upper portions of the supralabials; the anterior tip of the rostral contains a distinct, vertical, yellow line; the ventral surface of the head is pale brown with brown flecking; the ventral surface of the body is dark brown with pale brown linear markings along the upper edges of the ventral scales, especially anteriorly; and the subcaudal surface is brown with pale brown mottling, especially anteriorly.

Similar species: *Agkistrodon howardgloydi* is unique among the snakes of the Fonseca islands, because of the presence of a heat sensitive pit located between the eye and nostril (but see Species of Probable Occurrence on the Fonseca Islands, Honduras), a distinct yellow or white vertical line present on the anterior tip of the rostral, and another stripe that extends from the dorsolateral edge of the rostral downward across the supralabials.

General geographic distribution: *Agkistrodon howardgloydi* occurs at low and moderate elevations on the Pacific versant from extreme southwestern Valle, Honduras, to northwestern Costa Rica.

Natural history comments: *Agkistrodon howardgloydi* is a terrestrial and generally nocturnal snake. We did not find this snake on the Fonseca islands, but only spent part of a single day climbing the steep-sloped mountain on Isla Zacate Grande, the only island in the region from where it is known to occur.

Remarks: Porras et al. (2013) conducted a taxonomic reevaluation of *Agkistrodon bilineatus* (Günther, 1863), and elevated the recognized subspecies (*A. bilineatus*, *A. howardgloydi*, and *A. russeolus*) to species level based on a character-mapping analysis using morphological data derived from the literature, biogeographical evidence, and the results of previous DNA-based studies. These authors extended the distribution of *A. bilineatus*, with a type locality of Guatemala, to the vicinity of Copán in extreme western Honduras (L. Porras, pers. comm), based on the color pattern characteristics evident in photographs of an individual that showed a close similarity to plates of *A. bilineatus* appearing in Günther (1885–1902: Plate 58) and A. H. A. Duméril, Bocourt, and Mocquard (1870–1909: Plate 27). Porras et al. (2013) noted, however, that their taxonomic arrangement did not necessarily capture the full diversity of this group of pitvipers, and in addition to identifying several regions where future sampling should be conducted, they recommended a future phylogeographic analysis using both mtDNA and nuclear markers. We follow Porras et al. (2016) in considering *A. howardgloydi* a valid species.

Henophidia Hoffstetter (1939: 3)

The single member of this group on the Fonseca islands differs most notably from the Caenophidia, the remaining upper level unranked taxa of the Alethinophidia in Honduras, in that the ventrals do not extend across the full width of the venter (except for the elapid marine Caenophidia *Hydrophis*, in which the ventrals are tiny). Also, the mandible of the single member of the Henophidia on the Golfo de Fonseca islands, *Boa imperator*, is about the same length as the skull, or slightly longer, whereas typically the mandible of the Caenophidia is longer than the skull. In addition, small scales are present on top of the head of *B. imperator*, whereas nine regularly arranged plates typically are present on top of the head in the Caenophidia on the Fonseca islands. Two exceptions to the typical 9 plate arrangement on the Fonseca islands are: each paired internasal is fused to the anterior section of each nasal in *Stenorhina*; and *Hydrophis* lacks internasal scales.

Family Boidae Gray (1825: 209)

The family Boidae includes the snakes usually referred to as boas, sand boas, and anacondas. Some of the largest snakes in the world (i.e., anacondas) are assigned to the Boidae, but some boas are rather small. Numerous small scales are present on top of the head of the boa on the islands, externally visible remnants of the posterior limbs are retained, the species gives birth to living young (viviparity), and also constricts its prey. Infrared-sensitive labial pits are present in some boas, but not in the species that occurs on the Fonseca islands. One genus containing one species occurs on the islands, with two named species in two genera occurring in all of Honduras (McCranie, 2015: 378).

Genus *Boa* Linnaeus (1758: 214)

***Boa imperator* Daudin (1803: 150)**

Common names: Boa, Masacuata.

Description: *Boa imperator* is a large, terrestrial to arboreal snake (TOL to about 4,450 mm rangewide; TOL of largest Honduran specimen measured [a female] 1,849 mm, but specimens from the Fonseca islands are considerably smaller) with a short, prehensile tail (TAL/TOL 0.12–0.15 in males, 0.10–0.17 in females). The top of the head is covered with small scales; labial pits are absent; the supralabials are 15–22, and separated from the eye by small scales; the infralabials are 17–26, with the first pair not in contact medially posterior to the mental; a mental groove is present; 64–79 smooth dorsal scale rows are present at midbody; the ventral scales are relatively narrow, and do not reach the lateral edges of the venter; the ventrals are 229–249 in males, and 233–251 in females; the subcaudals are 57–70 in males, and 51–64 in females, and most are entire; the cloacal scute is entire; a pair of stiff cloacal spurs is present on each side of cloaca in both males and females, but the spurs are better developed in males; the pupil is vertically elliptical; the head is much wider than the neck, because of the massive jaw muscles. The general dorsal coloration of the length of the body is gray to tan, with a series of “H-shaped,” dark brown, dorsal blotches anteriorly; the top of the head is the same ground color as the body, and contains a dark brown median line that extends from the snout to the level of the nape; and the venter is pale gray to tan with dark gray lateral blotches.

Similar species: *Boa imperator* is the only snake on the Fonseca islands with the combination of the presence of relatively narrow ventral scales that do not reach the lateral edges of the venter, more than 60 dorsal scale rows at midbody, and visible cloacal spurs on each side near the cloaca.

General geographic distribution: *Boa imperator* occurs at low and moderate elevations on the Atlantic versant from central Tamaulipas, Mexico, to northwestern Venezuela, and on the Pacific versant from south of the Isthmus of Tehuantepec, Mexico, through Central America to at least about northwestern Colombia. It also occurs on numerous islands along both coasts of Central America.

Natural history comments: *Boa imperator* is a terrestrial, nocturnal or diurnal inhabitant of disturbed and the occasional only somewhat undisturbed forest on the Fonseca islands. This species was the most frequently encountered snake on the islands; most individuals were subadults seen crawling on the ground at night. One was found on the floor of a warehouse during the day in San Carlos, and several small individuals crawled into the patio area of a friend's home where we were staying on Isla Inglesera (at night and during the day). Walks at night on Isla Inglesera usually would result in 1–3 boa sightings. We did not collect most of the individuals we encountered, but unfortunately these snakes usually are killed by people who find them.

Infraorder Scolecophidia Cope (1865b: 230)

Members of the Scolecophidia are very small, fossorial, wormlike, and insectivorous snakes. They can be distinguished from snakes of the infraorder Alethinophidia by the presence of small, similar-sized, smooth, cycloid scales that completely encircle the body, an extremely short tail, tiny and obscure eyes located beneath an ocular scale, and a small and subterminal mouth that results from a shortened lower jaw. Three families containing four genera and nine named species occur in all of Honduras (McCranie, 2015: 378; McCranie and Hedges, 2016; Wallach, 2016), but only one family, genus, and named species is known from the Fonseca islands.

Family Leptotyphlopidae Stejneger (1891: 501)

Members of this family of threadsnakes differ externally from those of the other Honduran scolecophidian snake families by the presence of the infranasal scale and usually the ocular scale bordering the lip line, as well as by only 14 scale rows around the body. One genus and one species is found on the Fonseca islands, and the same genus with four species occurring in all of Honduras (McCranie, 2015: 378; McCranie and Hedges, 2016; Wallach, 2016).

Genus *Epictia* Gray (1845: 139)

Epictia ater (Taylor, 1940: 536)

Common name: Culebra Lombriz.

Description: *Epictia ater* is a very small threadsnake (TOL to 183 mm; a Honduran specimen) with tiny scales of equal size encircling the body, and an extremely short tail (0.04 to 0.08 of TOL; unsexed). The dorsal body scales are arranged in 14-14-14 smooth rows, with 10 scale rows around the midtail, with all rows of equal size; 212–259 middorsal scales extend from the rostral to the tail spine; 192–242 midventral scales are present; the median subcaudal scales are 15–21; the head is not wider than the neck; a tiny, divided, mental scale is present; the eye is visible through the ocular scale; the rostral usually is fused with the frontal scale, and thus the fused rostral-frontal scale contacts the postfrontal scale; the supralabials are 2, with both contacting the ocular scale; the infralabials are 4–6 (usually 5); a yellow snout spot is absent to indistinct, and when present is confined to a portion of the rostral scale; and a yellow tail spot is absent to indistinct dorsally and distinct ventrally, and covers 0–2 scales dorsally, and 4–12 scales ventrally. Dorsal body stripes are absent to indistinct; and the dorsal ground color is black with the ventral surfaces essentially the same color as the dorsum.

Similar species: *Epictia ater* is the only species on the Fonseca islands with very small dorsal and ventral scales, all uniform in size, with 14-14-14 rows encircling the body, and with an ocular scale covering each eye.

General geographic distribution: *Epictia ater* is known to occur on the Pacific versant from southern Honduras and the Fonseca islands to northwestern Costa Rica, and on the Atlantic versant from western to northwestern Honduras, in the Río Agúan Valley and from a subhumid open pine savanna in the extreme northeastern part of the country.

Natural history comments: *Epictia ater* is a fossorial and diurnal-nocturnal snake. We encountered the Fonseca island specimens under rocks, except for one that was found inside and old discarded, ragged, rotten pair

of pants lying on the ground. After grabbing a handful of leaves and other ground debris at the site to place inside the collecting bag, JRM unknowingly captured a second specimen of this species.

ORDER CROCODYLIA OWEN (1842: 65)

The Honduran members of the Order Crocodylia contain the alligators and caimans (superfamily Alligatoroidea Gray, 1844: 56; as Alligatoridae) and the crocodylians (superfamily Crocodyloidea Opper, 1811b: 16; as Crocodilini). The Crocodylia are characterized by robust skulls, long snouts, strongly toothed jaws, short necks, robust cylindrical trunks without constriction, thick laterally compressed tails, and relatively short and strongly developed limbs—and thus are easily recognizable. Among the Crocodyloidea, only one family, genus, and named species occurs in the country, with that species also inhabiting the Fonseca island region. All living members of this order are oviparous. One genus and species of the Alligatoroidea occurs on the Honduran mainland (McCranie, 2015: 364), but to date has not been discovered on the Pacific versant.

Superfamily Crocodyloidea Opper (1811b: 16)

Family Crocodylidae Opper (1811b: 16)

Only one family, one genus, and one species of this superfamily occur in Honduras (McCranie, 2015: 364); this species occasionally is found in Fonseca island marine waters, and in a freshwater lagoon on Isla del Tigre.

Genus *Crocodylus* Laurenti (1768: 53)

Crocodylus acutus Cuvier (1807: 55)

Common names: Cocodrilo, Lagarto.

Description: *Crocodylus acutus* is a very large crocodylian that in the recent past is known to have reached lengths in excess of 6 m, but presently the TOL of the largest individuals normally does not exceed 3–4 m. The TOL of hatchlings is 20–35 cm; the snout is moderately long and slender and not broadly rounded, with the 4th tooth of the lower jaw visible when the mouth is closed; a preorbital transverse ridge is absent; 2–6 (usually 4) postoccipital scutes are arranged in a single transverse row, and 1–7 nuchal scales (usually 6 in 2 juxtaposed pairs) are present; 14–17 longitudinal rows of dorsal scutes, arranged in 1–6 transverse rows, are present at midbody; the ventral scutes are arranged in 25–35 longitudinal rows, usually with only a single apical pit per scute; 16–21 longitudinal, double crested caudal whorls are present; and 14–20 longitudinal, dorsal, single crested, caudal whorls are present. The adults generally are gray, brownish gray, or olive dorsally, with darker gray or olive markings or banding on the body and tail; and the venter is white to cream.

Similar species: No other reptile in the Fonseca island region can be confused with this species. *Caiman crocodilus* (Linnaeus, 1758: 200), in the Alligatoroidea, is the only other Honduran crocodylian, and can be differentiated by the presence of a transverse ridge across the head just anterior to the eyes, and the 4th tooth of the lower jaw concealed when the mouth is closed.

General geographic distribution: *Crocodylus acutus* occurs at low and moderate elevations on the Pacific versant from Sinaloa, Mexico, to extreme northwestern Peru, and on the Atlantic versant from Tabasco, Mexico, to northeastern Venezuela. It also occurs in southern Florida, in the United States, and on Cuba (including Isla de Juventud and other satellite islands), Little Cayman, Cayman Brac, Jamaica, Hispaniola, Martinique, and Margarita.

Natural history comments: *Crocodylus acutus* is a semiaquatic species that occurs in brackish and freshwater conditions in a freshwater lagoon in the Fonseca island region, and occasionally is seen in open sea water. No actual records of *Caiman crocodilus* (Alligatoroidea) are available from the Pacific versant of Honduras, despite numerous statements in the literature of its occurrence there. Lovich et al. (2006: 24) stated that *Caiman* eye-shines were seen at Laguna de Agua on Isla del Tigre, but *C. acutus* inhabits that lagoon (Naval Base Officer, pers. comm., 27 March 2012). Another Naval Base Officer on Isla Conejo told us (Naval Base Officer, pers. comm., 6 July 2011) that he observed an adult *Crocodylus* along the Naval Base dock on that island, but when the individual was disturbed it slowly swam away in the open sea.

Order Testudinata Behn (1760: 3)

The Order Testudinata consists of the turtles. Turtles are the only tetrapods with a bony or leathery shell composed of dermal modifications that incorporate the ribs, trunk vertebrae, and portions of the pectoral girdle. The pectoral girdle also lies within the ribcage, under the vertebrae rather than external to the ribcage as in all other living reptiles. The carapace is composed of a fusion of the eight trunk vertebrae and ribs to an overlying set of dermal bones, and the plastron formed by a fusion of parts of the sternum and pectoral girdle with the external dermal bones. All Honduran turtles are classified in the Infraorder Cryptodira.

Infraorder Cryptodira Lichtenstein and von Martens (1856: 1)

The Cryptodira are characterized by their ability to retract the neck posteriorly into a medial slot within the body cavity. All Honduran members are placed in four superfamilies, six families, 10 genera, and 17 named species (one introduced; McCranie, 2015: 379). Two superfamilies, three families, five genera, and five named species are known from the Fonseca island region of Honduras (but see Species of Probable Occurrence on the Fonseca Islands, Honduras).

Superfamily Chelonioidea Schmid (1819: 14)

Family Cheloniidae Schmid (1819: 14)

The Chelonioidea contains the marine turtle families Cheloniidae and Dermochelyidae Baur (1888: 422). Representatives of both families occur in Honduran waters, but the latter has not been reported from the Fonseca island region of Honduras. Externally, the Chelonioidea are the only turtles in Honduras whose limbs have been modified into paddle-like structures for their marine lifestyle. The Cheloniidae differ from the Dermochelyidae by the presence of a carapace and plastron covered with epidermal scutes (a shell), instead of a leathery structure as in the Dermochelyidae. Four genera of this family containing four named species inhabit Honduran marine waters (McCranie, 2015: 379), with three genera and three named species occurring in Fonseca island waters and occasionally nest on the associated beaches.

Genus *Chelonia* Brongniart (1800: 89)

Chelonia mydas (Linnaeus, 1758: 197 [in part])

Common name: Tortuga Negra.

Description: *Chelonia mydas* is a large sea turtle that typically reaches a CL between 900 to 1,100 mm. The carapace is somewhat rounded, heart shaped, broad, low, and with smooth margins; the dorsal scutes are juxtaposed; the carapace contains 5 vertebral scutes, 4 pairs of costal scutes, with the first pair separated from the nuchal scute, and 12 pairs of marginal scutes; a middorsal ridge usually is present on the carapace of hatchlings, but adults lack a dorsal ridge; the plastron is unhinged, and 2 longitudinal plastral ridges often are present in hatchlings, but are lost in adults; the plastron contains 6 pairs of scutes plus a large intergular scute; the bridge contains 4 pairs of inframarginal scutes, which lack pores; 1 pair of prefrontal scales are present; 1 large inframandibular scute is present on each side; the lower jaw is strongly serrated on the inner surface; the outer cutting edge of the upper jaw is not serrated; and the limbs have developed into paddle-like flippers, with each usually containing a single small claw. The carapace generally is olive green to dark gray or black; the plastron is cream or pale yellow, with various amounts of pale to dark gray infusions or mottling; and the scales on the dorsal surfaces of the head, limbs, and tail are olive green to dark gray or black.

Similar species: The only other turtles in the Fonseca island region with paddle-like limbs are *Eretmochelys imbricata* and *Lepidochelys olivacea* (but see Species of Probable Occurrence on the Fonseca Islands, Honduras), which also are marine turtles. In *E. imbricata*, 2 pairs of prefrontal scales, a slightly hooked, hawk-like upper jaw, an upper jaw serrated on the outside cutting edge, and a smooth inside surface of the lower jaw are present. In *L. olivacea*, 5 or more pairs of costal scutes are present, with the first pair contacting the nuchal scute, and 4 or more inframarginal scutes are present on each bridge, with those scutes usually containing a pore on the posterior end.

General geographic distribution: This species occurs in tropical and subtropical seas, normally between the 20°C isotherms, in the Atlantic, Pacific, and Indian oceans.

Natural history comments: *Chelonia mydas* is strictly a marine turtle, with two exceptions: adults sometimes come ashore to bask; and females come ashore for nesting and egg deposition. Cruz et al. (1987) reported a female nesting in the Fonseca island region at Punta Ratón, Choluteca, during August. Ernst and Lovich (2009) provided a wealth of data on the reproduction and diet of this species throughout its geographic distribution.

Genus *Eretmochelys* Fitzinger (1843: 30)

Eretmochelys imbricata (Linnaeus, 1766: 350 [in part])

Common name: Carey.

Description: *Eretmochelys imbricata* is a medium-sized marine turtle that typically reaches a CL between 750 to 900 mm, but has been reported to reach 1,140 mm. The carapace is relatively long and narrow in adults, and more heart-shaped in juveniles; the carapacial margins are strongly serrated posteriorly; the dorsal scutes are imbricate (the dorsal scutes lack imbrication in juveniles and older animals); the carapace contains 5 vertebral plates, 4 pairs of costal scutes, with the first pair of costals not in contact with the nuchal scute, and usually 12 pairs of marginal scutes; a middorsal ridge usually is present on the carapace of hatchlings; the plastron is unhinged; 2 longitudinal plastral ridges often are present in hatchlings; 6 pairs of plastral scutes and a large intergular scute are present; the bridge usually contains 4 pairs of inframarginal plates, all without pores; the head is relatively narrow, with 2 pairs of prefrontal scales, and a hawk-like upper jaw with a strongly serrated outside cutting surface; the lower jaw contains a smooth inner surface; 1 large inframandibular scale is present on each side; and the limbs are paddle-like, with each usually containing 2 small claws. The carapacial scutes generally are brown with distinct black, tan, or cream mottling, and a glossy sheen usually is visible; the plastron is yellow or yellowish brown, with indistinct brown, lineate, mottling; the dorsal scales on the head and appendages are brown or reddish-brown, with yellow or yellowish brown seams on the head and pale yellow or cream margins on the appendages; the ventral surfaces of the head and appendages are pale yellow to yellowish brown, with brown mottling (this general coloration is of Atlantic versant individuals, based on JRM's field notes).

Similar species: The only other turtles in the Fonseca island region with broad paddle-like limbs and carapacial scutes are the marine *Chelonia mydas* and *Lepidochelys olivacea* (but see Species of Probable Occurrence on the Fonseca Islands, Honduras). In *C. mydas*, a single claw usually is present on each limb, the inner surface of the lower jaw is serrated, a single pair of prefrontal scales is present, and a non-hawk-like upper jaw that lacks serrations on the outside cutting edge. In *L. olivacea*, 5 or more pairs of costal scutes are present, with the first pair contacting the nuchal scute, and four or more inframarginal scutes on each bridge, with each scute usually containing a pore on the posterior end.

General geographic distribution: The monotypic *Eretmochelys imbricata* occurs circumglobally in tropical and subtropical seas, and occasionally ranges into some temperate seas.

Natural history comments: *Eretmochelys imbricata* is strictly a marine turtle, in which only females leave the water to deposit eggs. Ernst and Lovich (2009) provided a wealth of data on the reproduction and diet of this species throughout its geographic distribution. Nonetheless, we are not aware of any published information on this species nesting in the Fonseca island region.

Genus *Lepidochelys* Fitzinger (1843: 30)

Lepidochelys olivacea Eschscholtz (1829: 3)

Common name: Tortuga Golfina.

Description: *Lepidochelys olivacea* is a relatively small marine turtle that typically reaches a CL of up to 735 mm. The carapace in adults is relatively broad, often as broad as long; the carapacial margins of adults are smooth, and the dorsal scutes usually are non-imbricate; 5 vertebral plates (scutes), 12–14 paired marginal scutes, about 5–6 pairs of costal scutes (one side can have more costal scutes than the other) are present, with the first costal pair in contact with the nuchal scute; a middorsal ridge usually is present on the carapace of hatchlings; the plastron is unhinged; 2 longitudinal plastral ridges often are present in hatchlings; 6 pairs of plastral scutes are present; a small intergular scute is present or absent; the bridge usually contains 4–5 pairs of inframarginal scutes, each usually with


a posterior pore; the head is relatively large and somewhat triangular in shape, and contains 2 pairs of prefrontal scales; the upper jaw is non hawk-like in shape; the inner margin of the lower jaw is smooth; 1 large inframandibular scale is present on each side; the limbs are paddle-like, each usually containing 2 small claws in juveniles, but often a single claw in adults. The carapacial scutes generally are greenish gray to olive brown; the plastron is greenish white to greenish yellow; the dorsal scales on the head and appendages are olive to gray; and the ventral surfaces of the head and appendages are creamy white.

Similar species: The only other turtles in the Fonseca island region with broad paddle-like limbs and carapacial scutes are the marine *Chelonia mydas* and *Eretmochelys imbricata* (but see Species of Probable Occurrence on the Fonseca Islands, Honduras). *Lepidochelys olivacea* can be differentiated from these turtles by the presence of 5 or more pairs of costal scutes, with the first pair contacting the nuchal scute, and also by the presence of pores on most of the 4–5 inframarginal bridge scutes.

General geographic distribution: *Lepidochelys olivacea* occurs in tropical and subtropical waters of the Indo-West Pacific region and the eastern Pacific Ocean. Occasionally, it also ranges to the coasts of Chile, Alaska, South Africa (where the Pacific and Atlantic oceans meet), and New Zealand in the Pacific Ocean, and in the Atlantic Ocean between Mauritania and Guinea in West Africa and disjunctly from northeastern Cuba to the Guianas in the western Atlantic. In Honduras, this species is known only from the Golfo de Fonseca waters and shorelines.

Natural history comments: *Lepidochelys olivacea* is strictly a marine turtle, in which only females leave the water to deposit eggs. Cruz et al. (1987) gave brief notes on 279 nests of this species they encountered on beaches in the Punta Ratón, Choluteca, region during August of 1985. These beaches lie along the border of the Golfo de Fonseca. Ernst and Lovich (2009) provided a wealth of data on the reproduction and diet of this species throughout its geographic distribution, including information from the Fonseca island region. Rising sea-levels present a serious problem to *L. olivacea* (and other marine turtles) on the small beaches in these waters, where this species deposits (or historically deposited) its eggs (see McCranie et al. 2013; also see Fig. 10).



Fig. 10. A small beach on the south-central part of Isla Garrobo, where occasional females of the marine turtle *Lepidochelys olivacea* have nested in recent years. Rising sea levels are destroying this and other small beaches in the Golfo de Fonseca. We found an old *Lepidochelys olivacea* eggshell on this beach. Photograph taken on 30 June 2013.  © Alexander Gutsche

Superfamily Testudinoidea Batsch (1788: 437)

The Testudinoidea contains two families found on the Fonseca islands, the Emydidae and the Geoemydidae. Externally, the Honduran members of this superfamily can be distinguished from all other Honduran turtles by the combination of the presence of non paddle-like limbs, a short tail that lacks a median dorsal row of large triangular scales, and by the presence of 12 plastral scutes.

Family Emydidae Rafinesque (1815: 75)

Emydid turtles primarily are aquatic to semiaquatic and occur in both fresh and brackish water environments, although a few members are terrestrial. One genus (*Trachemys*) containing three named species (one species is introduced) occurs in all of Honduras (McCranie, 2015: 380–381), with a single species found on the Fonseca islands. The single emydid on the Fonseca islands contains a solid, large and unhinged plastron composed of 12 scutes, and a plastral pattern usually consisting of brown symmetrical lines.

Genus *Trachemys* Agassiz (1857: 434)

Trachemys emolli (Legler, 1990: 91)

Common name: Jicotea.

Description: *Trachemys emolli* is a relatively large turtle that exhibits strong sexual size dimorphism, with adult females larger than males and reaching a CL of about 375 mm rangewide (CL of largest Honduran specimen [a female] 330 m). A well-defined median keel is present on the carapace of juveniles, with the keel becoming reduced to absent in older individuals; the carapace contains 1 nuchal and 5 vertebral, 8 costal, and 24 marginal scutes; the posterior margin of the carapace is slightly serrate; the plastron is unhinged, notched posteriorly, and in adult males lacks a pronounced concavity; 12 plastral scutes arranged in 6 pairs, including gulars, humerals, pectorals, abdominals, femoral, and anals are present; the upper jaw is slightly notched, with the alveolar surface broad, and ridged; extensive webbing is present on the feet; and the claws on the forelimbs of males are not elongated during the breeding season. The carapace generally is green to gray, with ocellate yellow-orange lines with dark borders and centers present on the costal and vertebral scutes; the plastron is yellow, with a dark brown, lined, symmetrical pattern on the plastron, and dark ocelli present on the underside of the marginals. The head is green to gray, with a well-defined, yellow, postorbital stripe separated from the eye, which sometimes is strongly constricted above the tympanum; numerous narrow, yellow, black-bordered stripes also are present on the other surfaces of the head (all of the head stripes can become obscure or absent in older individuals); a yellowish brown symphyseal stripe sometimes is connected to both of the neck stripes; the soft parts of the body generally are greenish gray with streaks of yellow and black; and the tail contains paired yellowish brown stripes above and below, with the dorsal stripes fusing distally.

Similar species: The single species of *Rhinoclemmys* (Geoemydidae) on the Fonseca islands lacks a ridge on the alveolar surface of the upper jaw, lacks distinctly webbed feet, and contains red head stripes, with at least one crossing the snout. Also, *Trachemys emolli* is the only turtle on the Fonseca islands with numerous yellow stripes on the head, and non paddle-like limbs with well-developed webbing on the hind limbs.

General geographic distribution: *Trachemys emolli* occurs at low elevations on the Pacific versant from the Golfo de Fonseca of extreme southeastern El Salvador and Isla del Tigre, Honduras, and on the mainland from southeastern Choluteca, Honduras, to at least northwestern Costa Rica; the geographic distribution of this species, however, is poorly understood.

Natural history comments: *Trachemys emolli* is an aquatic to semi-aquatic turtle that on the mainland typically is found in rivers, lakes, ponds, estuaries, and permanent lagoons. We found two shells around Laguna de Agua on Isla del Tigre. In southeastern Choluteca, on the mainland, we saw this turtle in an estuary, and during the height of the dry season a large group was concentrated in a single, rather deep (about 3 m) pool near the mouth of the Río Negro, where most of the river at that time consisted only of a small trickle of slow-moving water that feeds the Estero San Bernardo region. Ibarra Portilla et al. (2009) reported finding a dead *Trachemys* lodged between rocks at a depth of 2 m in the sea near Isla Pirigallo, an El Salvadoran island in the Golfo de Fonseca. These authors also reported another *T. emolli* from El Salvador, swimming in an estuary associated with both a river and the Golfo de Fonseca.

Family Geoemydidae Theobald (1868: 9)

The Geoemydidae are aquatic to semi-aquatic, or terrestrial turtles. The single geoemydid on the Fonseca islands is terrestrial, and contains a solid, unhinged, and large plastron. This turtle is easily distinguished from the single Fonseca island member of the Emydidae, as it lacks strongly webbed feet. One genus containing four named species occurs in Honduras (McCranie, 2015: 381), with a single species known from the Fonseca islands.

Genus *Rhinoclemmys* Fitzinger (1835: 108)

Rhinoclemmys pulcherrima (Gray, 1856: 25)

Common name: Casco Rojo.

Description: *Rhinoclemmys pulcherrima* is a small turtle that reaches a CL of 235 mm in Honduran females, and a CL of 180 mm in Honduran males. The carapace is high-domed, ovoid, and contains a middorsal ridge. The carapace is slightly serrated along the posterior margin (the middorsal ridge and the serrated margin can become obscure in older individuals); the carapace contains 1 nuchal, 5 vertebrals, 8 costals, and 24 marginal scutes; the plastron is large, unhinged, and notched posteriorly; 12 plastral scutes consisting of paired gulars, humerals, pectorals, abdominals, femorals, and anals are present; the plastron is concave in males and flattened in females, and is slightly upturned anteriorly in females; the upper jaw is serrated laterally on the outside surface, and notched medially; the alveolar surface lacks a ridge; and the feet are unwebbed, or at best, only basally webbed. The carapace generally is brown, with dark brown bordered yellow, orange, or red ocelli on the costal scutes, to nearly uniform brown; the vertebral scutes are uniform brown, or flecked with dark brown; the plastron is yellow, with the central area mottled with brown; the bridge is brown with a yellow bar or yellow mottling on each marginal; the ground color of the head is olive brown or olive green, with 3–4 red dorsal stripes; a red stripe extends anteriorly from the border of each eye, and crosses the tip of the snout; other red stripes extend from the upper jaw to the tympanum, from the nostril to the eye, and from the eye to the tympanum; the chin and gular areas are yellow, and marked with red, pink, or brown lines, ocelli, or spots; the forelimbs contain yellow, orange, or red scales, with rows of black spots; the hind limbs are brown on the outside surfaces, and yellow or orange with dark brown spots on the inside surfaces; and paired yellowish brown, orange, or red dorsal stripes are present on the tail.

Similar species: The red head stripes, of which one crosses the tip of the snout, and the lack of webbing on the feet distinguishes *Rhinoclemmys pulcherrima* from all other turtles in the Fonseca island region. Also, distinct webbing on the feet and numerous yellow stripes on the head are present in *Trachemys emolli*, the only other non-marine turtle in the Fonseca island region.

General geographic distribution: *Rhinoclemmys pulcherrima* occurs at low and moderate elevations on the Pacific versant from southern Sonora, Mexico, to central Costa Rica, and on the Atlantic versant in several interior valleys of Honduras and Guatemala.

Natural history comments: *Rhinoclemmys pulcherrima* is a terrestrial turtle that occurs on numerous islands in the Fonseca region. This turtle is diurnal on the Fonseca islands (occasionally nocturnal on the mainland), and we saw individuals resting in the shade. On some islands, *R. pulcherrima* has become a popular pet. Fortunately, humans do not tend to molest this attractive species.

Species Deleted from the Fonseca Island Herpetofauna

Brame (1968: 47) described *Oedipina stuarti* (Amphibia: Caudata), and stated that the holotype (ZMH A00871; formerly ZMH 1341) came from “Amapala, Isla Tigre, in the Golfo de Fonseca, Departamento de Valle, Honduras.” The locality for a paratype (ZMH A00872; formerly ZMH 1960) was given as “Departamento de Valle: ... from the entrance to the mine of *El Provenor* [sic] *Aramecina*, Amapala, Isla Tigre, in the Golfo de Fonseca [sic].” A third paratype locality was given (for MNHN 1903.204; formerly MNHN 3466–2) as follows: “Departamento de Francisco Morazan [sic]: ... from Tegucigalpa, elevation 975 m (3200 ft.)” We made considerable efforts to find a mine or a salamander on Isla del Tigre, but failed on both counts. Interestingly, none of the older people we spoke with, who had spent much, if not all, of their lives on Isla del Tigre were aware of a gold mine, or any ore mine, on the island. The evidence we gathered strongly suggests that this salamander was not collected on Isla del Tigre. Aramecina is a town on the mainland (in the department of Valle) from where a road extends into the mountains

along the Valle/Francisco Morazán border. The road apparently ends at a group of mines just inside the department of Francisco Morazán, and the name of one of the mines is El Porvenir (JRM, pers. observ.; 25–26 May 2015; topographical Map 2657 II, Aramecina; Tegucigalpa, Honduras; scale 1:50,000). Several older residents in the vicinity of these mines, in the department of Francisco Morazán, recalled that gold and other types of ore, and various artifacts, were taken by mules from the mines in that area to Isla del Tigre, where ships in Amapala transported the cargo to Germany and other countries (pers. comm. to JRM by several long-time residents; 25–26 May 2015). In conclusion, the evidence suggests that mines were not present on Isla del Tigre, and the fact that a mine on the mainland named El Porvenir is known to have been a “starting shipping place” from where materials retrieved from these mines were taken by mules (25–26 May 2015 pers. comm. to McCranie by several residents of the vicinity of the mine of El Porvenir) to Amapala on Isla del Tigre, where cargo ships awaited, strongly indicates that *O. stuarti* was not collected on Isla del Tigre. From the mid 1800s through the early 1900s, Amapala was a major dock for shipping cargo to Germany and other countries. Meléndez (1931) also demonstrated a connection between “The Aramecina Gold and Silver Mining Company Limited” of London and that of a commercial company called “J. Rossner y Co. de Amapala.” Meléndez (1931) also referred to the mine of El Porvenir.

Gutsche (2012, 2015) provided images of the preserved holotype of *Oedipina stuarti*. Solís et al. (2016) presented inaccurate information on the type locality of *Oedipina stuarti* (JRM, unpublished), despite at least three of those coauthors clearly having known better (JRM, pers. observ.).

Species of Probable Occurrence on the Fonseca Islands, Honduras

***Norops macrophallus* (Werner, 1917: 31).** Köhler et al. (2005) reported this lizard from Isla Meanguerita (also called Isla Pirigallo), in the El Salvador section of the Golfo de Fonseca. Although we were expecting to find this species on at least one of the Honduran islands in this region, despite our efforts we did not find this lizard.

***Crotalus simus* Latreille (1801: 202 In Sonnini and Latreille, 1801a).** Several residents of Isla Zacate Grande informed us that the *cascavel* occurs on the steep mountainsides of that island. We spent much of one day climbing and searching the mountain for this rattlesnake with a young man who lives on the island, who indicated he had killed rattlesnakes in the area. Although we were unable to find any *Crotalus*, we believe the rattlesnake is there; several other local people also claimed to have seen rattlesnakes on the mountain. The rocky slopes we searched looked like ideal habitat for the rattlesnake. *Crotalus simus* has been collected on the Honduran mainland close to Isla Zacate Grande. The island is separated from the mainland by mangrove swamps and a few open channels, which likely are navigatable by adult *C. simus*.

***Dermochelys coriacea* (Vandelli, 1761: 2).** Köhler et al. (2005: 85) reported this large marine turtle along the Pacific coast of El Salvador, and Seminoff et al. (2012: 16) wrote that this species occurs in Pacific coastal waters from Mexico to Ecuador, with a few known nesting sites remaining within that vast range. Thus, we suspect that occasional individuals of *Dermochelys coriacea* enter Honduran waters in the Golfo de Fonseca.

DISCUSSION

As noted in the Introduction, the herpetofauna of the Honduran islands in the Golfo de Fonseca was one of the most poorly-known areas in the country. Köhler et al. (2005) authored a book on the herpetology of neighboring El Salvador, of which some islands are located in the Golfo de Fonseca. These authors reported only three species from those islands: *Incilius luetkenii* (Isla Meanguera); *Ctenosaura flavidorsalis* (Isla Conchaguaita); and *Norops macrophallus* (Isla Meanguerita). We collected *Incilius* on several Honduran islands, did not encounter any habitat suitable for *Ctenosaura*, and discuss the *Norops* in Species of Probable Occurrence on the Fonseca Islands, Honduras. Subsequently, Ibarra Portillo et al. (2009) reported *Trachemys emolli* from Isla Pirigallo in the El Salvador portion of the Golfo de Fonseca. This turtle also is known from Isla del Tigre, in the Honduran portion of the gulf.

Acknowledgments.—During the first few days of the 2011 trip to the Golfo de Fonseca islands, we searched for a place on Isla Inglesera where we could spend a few days camping and working. We were fortunate to meet Rodolfo Nuñez Pacheco and his partner Maritza Roxana Bonilla Ochoa, who reside on the island. We quickly became good friends with these unusually nice people. Rodolfo offered to transport us to many islands in the gulf for the price of his expenses, and Maritza began cooking for us on a regular basis, never asking for money, except to

buy the needed groceries to spice up the meals of fresh caught fish, lobster, crabs, and ctenosaurs. During ensuing trips to the islands, Rodolfo picked us up in his boat on Isla Zacate Grande, and took us to Isla Inglesera, where we would set up a base camp; from there, Rodolfo transported us to the islands where we wanted to collect, and Maritza cooked for us and washed our clothes. On some trips, field assistance was provided by Fernando Grave de Peralta, Javier Rodriguez, and Leonardo Valdés Orellana; the work of Javier was especially intense and productive. Collecting permits (Dictamen DVS-ICF-016-2009 [good for three years] and Resolución DE-MP-102-2012) for these trips were issued by the personnel of ICF (Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre, Tegucigalpa, Honduras), until the permits suddenly stopped during 2014, and we could not export some of the specimens we collected on our last trip. Leonardo Valdés Orellana also helped acquire the 2009 and 2012 permits. We also thank Silvia Valdéz for arranging transportation for us from Tegucigalpa to Coyolitos on Isla Zacate Grande, Oscar Flores-Villela for translating the Abstract into the Resumen, and Javier Sunyer for reviewing an earlier version of this work. Finally, we appreciate the dedicated work of the editor, Louis Porras, which greatly benefitted the final version of this work.

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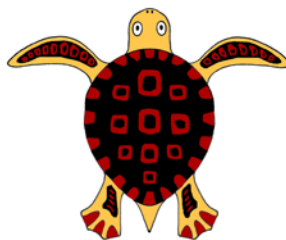
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