Land Mollusks

of

The National Parks of Haiti

by

Fred G. Thompson

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INTRODUCTION

The land snail fauna of Hispaniola has remained poorly known until recent years because of the rugged physical geography of the island, especially the remote mountains of Haiti. During the colonial period, up to about 1820 a fair number of Haitian land mullusks were described by European authors. In nearly all cases the origin of these specimens was entirely unkown, as was true with most plants and animals described at that time. Haiti remained unknown to most naturalists for the remainder of the nineteenth century. A few European and American naturalists visited the country, but their travels were generally restricted, and with two exceptions only a few species were collected. The most noteworthy of the nineteenth century naturalist to visit Haiti are the following persons.

D.F. Weinland, a german naturalist from Frankfurt visited the area around Jeremie in 1857. He collected many species of mollusks from the forest that encroached into the city at that time. His collection contained the first specimen to be recorded from a specific Haitian locality. They remain the most through documentation for Jeremie, because several species apparently have become extinct by the beginning of the twentieth century. Weinlands collections are deposited in the Berlin Museum and the Senkenbergische Naturforchungs Gesellschaft.

Heinrick Kissling traveled in the Dominican Republic and parts of Haiti in 1864-1865. He made noteworthy collections in the Cul-de-sac region and on Ile Gonave. Species from his collections were described by D.F. Weinland in 1876.

An American botanist named Linden from Buffalo, New York visited the areas about Port-au-Prince and Gonave in 1874. He collected some mollusks incidental to his search for plants. These included several species that were described in the eighteenth century but whose providence remained unknown until Linden rediscovered them. These specimens were studied by Bland and Weinland in 1876.

An English traveler named V.P. Parkhurst visited the area around Port-au-Prince in 1875. He made extensive collections of land snails from there and in areas immediately to the north. As with Linden, his collections included the first locality records for many species that were described years earlier. His collections were studied by Maltzan (1888).

The most prominent naturalist to make collections of mollusks from Haiti during the nineteenth century was Herman Rolle, a young German naturalist who visited the country in 1887-1888. Rolle traveled extensively in Haiti and gathered numerous specimens from the area between Saint Mark, Cap Haitien and Sans-Sounci. His collections were reported upon by Maltzan in 1888.

The state of knowledge of the molluscan fauna of Haiti remained at this level until the period between 1917 and 1936. During this

interval, when U.S. forces were stationed in the country, major efforts were made by naturalists from the Smithsonian Institute and the Museum of Comparative Zoology to conduct biological explorations of the country. Very extensive collections were gathered by A. Wetmore, W.J. Eyerdam, J. Bond, and E.R. Orcutt. The collections are deposited in the National Museum of Natural History. Most of these collections were made from costal areas around the southern peninsula, the Cul-de-sac basin and the Saint Mark-Gonaive areas. Bartsch (1942-1946) gives a monographic treatment of the operculate land snails collected by these naturalists. P.J. Darlington visited Haiti in 1934 and made small but noteworthy collections from Pic Le Selle and Pic Macaya. His collections are deposited in the Museum of Comparative Zoology and were reported upon by Clench (1935, 1962, 1966).

In summary it is readily apparent that the fauna from vast areas of Haiti remain unstudied, particularly those faunas occupying higher altitudes throughout the Southern Peninsula, the Northwest Peninsula and the Central Highlands. The only collections previously made from areas near the proposed national parks of La Visit and Formon were made by Smith (1864) and Darlington (1934). Those collections contained relatively few species, and they were from marginal areas around the national parks. It is clear from the literature that our state of knowledge of the systematics of nearly all families and genera of Hispaniolan land mollusks is poorly understood, and that major taxonomic revisions are necessary in order to place the fauna of the national parks within a proper taxonomic framework.

Habitat Preferences and the Distribution of Taxa in Park Areas

Parc National Pic Macaya

Twenty three species of land mollusks are listed on the interum report as species of special concern because they are endemic to the immediate area of the park. Ten of these are selected for discussions relating to their habitats because they are large and readily identified, once the taxonomic studies are completed. The remaining species are smaller and considerable training is necessary before they can be recognized by an investigator. The ten large species are found in various habitats in the park that are critical for their survival. The other smaller species are also found in these habitats so that protective measures for a selected group of large species will protect the other taxa.

Forested Limestone Knolls (karst hills adjacent to the Plain of Formon). This habitat is inhabited by Coryda n. sp., Plagioptycha n.sp., Archegocoptis n.s.A, Brachypodella n.sp.A., Helicinidae n.gen.n.sp., Nenisca n.sp., Autocoptis juliae Clench. Protection of these habitats for the benefit of these species will protect all other species that occure in the Formon Basin. The encroachment of agricultural practices into these knolls poses an immediate threat to the larger species and a long-range threat to all other endemic taxa.

Mixed Pine-Hardwood Forest (1800-1900 meters) Ridge of Formon: This habitat is depauperate of mollusks because of the high altitude. However, nearly all species at this elevation are locally endemic. This is a general characteristic of all high altitudes on Hispaniola. The endemic species on Macaya are forest floor inhabitants. The most significant species because of their size are "Mcleania" n.sp., and Archegocoptis n.sp. B. other endemic species include Odontosagda n.sp., Brachypodella n.sp. B., Fadeyenia n.sp., Lucidella n. sp., Varicella sp.B., "Glyphyalinea."

Forested slopes of the. Ravine du Sud ("Gran Ravin" at 1040 meters): This habitat is critical for the protection of two species that occupy rock piles in forested areas along the river basin, Colobostyles n.sp. and Odontosagda n.sp. Only a limited amount of time was available to work in this area so that the list of species for the ravine is incomplete. Additional undescribed taxa are expected to occure here.

Forested Top of Morne Cavalier. This habitat is critically important because this is the only station known on Hispaniola for the Haplotrematidae n.gen. n. sp. The shell is about 20 mm in diameter and is brightly covered with gold spots on a black background. This family of snails is known to occure on Puerto Rico and Cuba, as well as North America. Its occurence on Hispaniola was anticipated, but until this survey it had not been discovered.

LA VISIT

All of the mollusks occuring on La Visit can be found in the limestone knolls that are covered with forested thickets. Some species are found in cut-over areas where there are Agave and shrubs growing on limestone. A few species are tolerant of Pine forests. Protection of the limestone knoll thickets will protect all species known from the area.

Morne d'Enfer. A small patch of broadleaf evergreen forest harbours a colony of Coloniconcha, a large arboreal semislug. This is the only locality south of the Sierra de Bahoruco in the Dominican Republic where this snail occurs.

Roche Cabrit. A large, undi[illegible] forested limestone outcrops here. There is [illegible] distribution of the genus between here and Parc M[illegible]

Recommendations for Protecting the Molluscan Fauna

The species of special concern, which includes all of the endemic mollusks in both national parks require natural broadleaf forests on limestone terrain. Preservation of these habitats in both parks will guarantee the protection of the indigenous molluscan faunas.

Agricultural encroachment should be immediatly stopped. Deforestation for lumber or charcoal should be prevented.

Recommendations for Future Research

The molluscan faunas of the two national parks have been surveyed to the extent that 85-90% of the species probably have been collected. There are large areas adjacent to the parks that need to be surveyed because many locally restricted endemic species are anticipated on the basis of our limited information.

Parc National Pic Macaya. The ravine of the Riviere de Ravine Sud needs careful investigation. Our collections produced two undescribed species. Undoubtedly more species remain to be discovered.

The north and west slopes of Pic Macaya remain terra incognito. We expected that these areas have a fauna that is as rich as that found in the Formon basin, and contain significantly high percentages of endemic species.

Parc National La Visite. The immediate area about La Visit is well surveyed. Additional work remains to be done to the east near Pic La Selle, and to the west around Morne d' Enfer. Additional surveys from Roche Cabrit are needed. The south road leading to Jacmel needs to be surveyed closely because the geographic extent of

the La Visit endemic fauna is not clear. Several undescribed species occure along this road but have not yet been found at higher altitudes around La Visit. Perhaps the park boundries should be expanded to include intermediate altitudes along the road.

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Table

Land Mollusks of the National Parks of Haiti

Taxon	National Park	
	La Visite	Macaya
Camaenidae		
Polydontes obliteratus (Ferussae)	0	+
P. undulatus Ferussae)	+	0
Coloniconcha n. sp. ?	+	0
Xanthonychidae		
Coryda sp.	0	+
C. n. sp.	0	+
C. cerosa	+	0
Plagioptycho n. sp. A	0	+
P. n. sp. B	+	0
Cepolis cepa (Miller)	0	+
Mcleania n. sp.	+	+
Sagdidae		
Hojeda inaguensis (Weinland	0	+
H. micromphala (Pilsbry)	+	+
Odontesanda n. sp. A	0	+
O. n. sp. B	0	+
O. n. sp. C	0	+
O. n. sp. D	0	+
O. n. sp. E	+	0
O. n. sp. F	+	0
O. n. sp. G	+	0
O. n. sp. H	+	0
Sagdidae n. gen., n. sp.	0	+
Suavitus taenioraphe (Pfeiffer)	+	+
S. sp.	+	0
S. sp.	0	+
Lacteoluna selenina	0	+
Urocoptidae		
Autocoptis sp.	+	0
A. juliae (Clench)	0	+
Archegocoptis n. sp. A	0	+
A. n. sp. B	0	+
Brachypodella obesula (Pilsbry)	0	+
B. n. sp. A	0	+
B. n. sp. B	0	+
B. n. sp. C	0	+
B. sp.	0	+
B. n. sp. D	+	0
B. n. sp. E	+	0
B. n. sp. F	+	0

Table 5 Continued

Taxon	National Park	
	La Visite	Macaya
Helicinidae		
Helicinidae n. gen. n. sp. A	0	+
Helicinidae n. gen. n. sp. B	+	0
Helicinia n. sp. A	0	+
H. n. sp. B	0	+
H. n. sp. C	0	+
H. n. sp. D	0	+
H. n. sp. E	+	0
H. n. sp. F	+	0
Lucidella sp.	0	+
L. n. sp. A	+	0
L. n. sp. B	+	0
Fedeyenia n. sp. A	0	+
F. n. sp. B	+	0
Ceratodiscus n. sp. ?	+	0
Helicidae		
Helix aspersa (Muller) (introduced European Garden Snail)	+	0
Zonitidae		
Guppya gundlachi (Pfeiffer)	+	+
Glypyhyalina sp.	+	0
G. n. sp. A	+	0
G. n. sp. B	+	0
G. n. sp. C	0	+
G. n. sp. D	0	+
Habroconous n. sp. A	+	0
H. n. sp. B	0	+
Hawaia minuscula (Binney)	+	+
Zonitoides arboreas (Say)	+	+
Zonitidae n. gen. n. sp. A	+	0
Zonitidae n. gen. n. sp. B	+	0
Oleacinidae		
Varicella sp. A	0	+
V. sp. B	0	+
V. sp. C	0	+
V. n. sp. A	+	0
V n. sp. B	+	0
Oleacina sp. A	0	+
O. sp. B	0	+
O. sp. C	+	0
O. sp. D	+	0
O. sp. E	+	0

Table 5 Continued

Taxon	National Park	
	La Visite	Macaya
Spiraxis n. sp.	+	0
Sigmataxis sp. A	0	+
S. sp. B	0	+
S. n. sp. A	+	0
Streptostylops n. sp. A	0	+
S. sp.	+	0
Subulinidae.		
Lamellaxis gracilis (Hutton)	+	+
Obeliscus n. sp.	+	0
O. sp.	0	+
O. dominicensis (Pilsbry)	0	+
Annulariidae		
Chondropoma manni (Clench and Aguayo)	+	0
Orcuttipoma rollei (Weinland)	0	+
Weinlandipoma sp.	0	+
Colobostylus n. sp.	0	+
Cyclophoridae		
Crocidopoma sp.	+	0
Proserpinidae		
Proserpina n. sp.	+	0
Pupillidae		
Gastrucopta pellucida (Pfeiffer)	0	+
Succinidae		
Succinea sp.	0	+
Clausiliidae		
Nenisca n. sp.	0	+
Haplotrematidae		
Haplotrematidae n. gen. n. sp.	0	+
Bulimulidae		
Drymaeus sallei (Pilsbry)	0	+
Totals		
Species	45	57
Species unique to each park	38	50
New Taxa	27	27