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NOTES ON MOLLUSCA FROM ALTA VERA PAZ,
GUATEMALA

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DURING a recent expedition¹ to the Department of Alta Vera Paz, Guatemala, L. C. Stuart collected mollusks from several localities in that area. Though the gathering of these collections was only incidental to his studies of the reptiles and amphibians of this region, sufficient information is now available regarding the shells he collected to warrant making note of certain trends in geographical distribution demonstrated by this material.

A. A. Hinkley (1920) is the only other recent collector who has made intensive collections of mollusks in parts of this region. His lists and locality data will be used in conjunction with those of Stuart to emphasize matters discussed in this report.

LAND SHELLS

In the following list of land shells collected by Stuart there are nineteen genera containing approximately thirty-three species. These are listed in the order of their natural classification. Locality data are also given (Map 1).

¹ Expedition sponsored by the University of Michigan and the Carnegie Institution of Washington.

Streptostyla lattarei (Pfeiffer)

Two lots of this handsome species were taken in the region of Samac. One of these was found in the forest litter around a limestone outcrop in a pine forest, the other at a similar situation in a humid hardwood forest.

Streptostyla turgidula guatemalensis Fischer and Crosse

One specimen was found along a limestone cliff on a trail 4-6 km. west of Finca Pacalá, El Quiche, Guatemala.

Streptostyla, new species

A single specimen of this striking *Streptostyla* was collected in the humid hardwood forest 3 km. west of the hacienda at Samac. Nothing similar to it has hitherto been seen. In a letter from H. A. Pilsbry, who has compared this specimen with material in the Academy of Natural Sciences of Philadelphia, he states: "Very likely new, but certainly not adult."

Salasiella margaritacea (Pfeiffer)

Two lots of this species were collected near Samac. One was taken near a limestone outcrop in the litter of a pine forest; the other near limestone in a humid hardwood forest.

Euglandina cumingi (Beck)

Four specimens were taken at as many localities. Three were found in the vicinity of Chamá, and one came from the region of Samac.

Euglandina semisulcata Deshayes

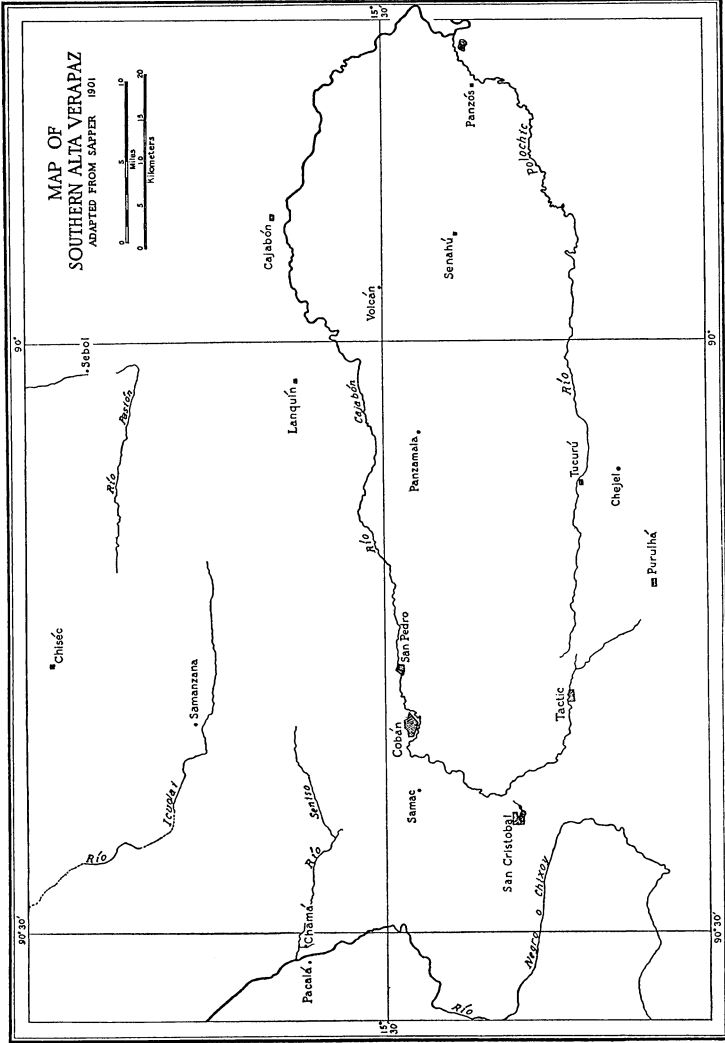
One specimen was collected in the lowland area of Samanzana.

Euglandina fusiformis (Pfeiffer)

This, one of the largest species of the genus in Guatemala, was found in the low bush region in the hills about 4 km. north of the hacienda at Samac.

Euglandina monilifera (Pfeiffer)

This species was found at the base of a small limestone cliff



MAP 1. Localities in Southern Alta Vera Paz, Guatemala, at which mollusks were collected by Dr. L. C. Stuart in 1938.

in a humid hardwood forest about 3 km. west of the hacienda at Samac.

Guppya championi von Martens

Collected at night from the vegetation in a flower garden at Panzamala.

Mesomphix euryomphala (Pfeiffer)

Found in a low swampy area about 8 km. north of Samanzana.

Lysinoe eximia stolli (von Martens)

Collected along a trail near Samac.

Lysinoe ghiesbreghti (Nyst)

Observed only in the humid hardwood forest about 3 km. west of the hacienda at Samac.

Epirobia polygyrella (von Martens)

This species was found near a limestone outcrop in a pine forest about 1 km. north of the hacienda at Samac.

Brachypodella morini (Morelet)

Found in somewhat the same situation as *Epirobia*, but in a humid hardwood forest about 3 km. west of the hacienda at Samac.

Coelocentrum fistulare (Morelet)

Found in the forest about 1 km. north of the hacienda at Chamá.

Eucalodium walpoleanum Crosse and Fischer

Collected in second growth bush ("monte") about 2 km. north of the hacienda at Samac.

Drymaeus sulphureus (Pfeiffer)

Four lots were collected; one each at Samac and Chamá, and two from the region of Panzamala.

Drymaeus lattrei (Pfeiffer)

Two lots were taken in the low bush along the trail to Cobán about 3 km. east of the hacienda at Samac.

Oxystyla princeps (Broderip)

Two specimens were collected in the patio at the hacienda at Chamá.

Pseudosubulina sp.

A specimen of an undetermined species of this genus was collected among the moss on rocks near the hacienda at Panzamala.

Pseudosubulina salvini (von Martens)

Found in moss around limestone in a pine forest 1 km. north of Samac.

Opeas beckianum (Pfeiffer)

A small series of specimens was found in moss covering the limestone near the hacienda at Panzamala.

Opeas gracile (Hutton)

Several specimens were found with *O. beckianum* at Panzamala.

Poteria bisinuatus (von Martens)

This species was fairly common in the area covered by this report. One lot was taken at Samac, two at Chamá, and one at Panzamala.

Poteria texturatus (Sowerby)

Found in the region of a small limestone cliff in a humid hardwood forest about 3 km. west of the hacienda at Samac.

Megalomastoma simulacrum (Morelet)

Four lots of this species were collected at as many different localities. One came from around a limestone outcrop in the pine forest near Samac, one each from Pacalá and Chamá, and another from the forest litter in the high rain forest near Panzamala.

Chondropoma rubicundum (Morelet)

Three lots are represented. One came from the pine forest near Samac; another is from a limestone cliff west of Pacalá;

and another was found beneath leaf sheaths of banana plants in a cafetal near Volcán.

Helicina amoena (Pfeiffer)

This species appears to be relatively scarce in the area considered in this report. A single specimen was found in the forest litter of the high rain forest on the slopes of Río Rubel Cruz, west of Panzamala.

Helicina tenuis Pfeiffer

One of the most common species of this area. It was taken at Pacalá and Chamá, at two stations in the hardwood region of Samac, and at two stations in the region of Panzamala, where it was found moving about on the vegetation at night.

Helicina oweniana Pfeiffer

This variable species was collected in the cloud forest near Panzamala, as well as in the rain forest of Pacalá and Chamá.

Helicina flavida Menke

Only one specimen of this species was found in the low rain forest about 5 km. northeast of Chamá.

Schasicheila minuscula (Pfeiffer)

A single colony of this species appeared in the hardwood forest at the base of a limestone cliff 3 km. west of Samac.

Schasicheila pannucea (Morelet)

This species appears to be much more common than *minuscula* in this collection, though it was only found in the region of Samac. Of the three lots collected, two came from the hardwood zone and one from the pine zone of this region.

Schasicheila pannucea misantlensis Fischer and Crosse

A specimen which is referred to this variety appeared in the hardwood region near Samac.

FRESH-WATER SHELLS

Helisoma caribaeum (D'Orbigny)

Two lots of this species were collected. One is from a small

aguada about 8 km. north of Samanzana, where in the wet season the great swamp, which covers this area, most likely connects it with the Usumacinta drainage basin. The other lot was collected from a millrace near Samac which belongs to the Cajabón drainage basin.

Aplexa spiculata Morelet

Two lots of this species were taken near Chamá. One was collected from a marsh, the other from a small intermittent aguada in the same region. Both localities are in the Río Seniso drainage.

Aplexa impluviata (Morelet)

A specimen of this species was found in the millrace near Samac. This creek is a part of the Cajabón drainage.

Pomacea flagellata (Say)

Two lots of this species were collected. One colony was found on the bank of Río Seniso near Chamá; the other came from a small aguada some 8 km. north of Samanzana. The latter is in a low swampy area which in flood stage is connected with the Usumacinta drainage. This species has long been prized by the natives as an article of food.

Pachychilus glaphyrus pyramidalis (Morelet)

A fine series was found on the bank of Río Seniso, near Chamá. This is a form rather than a subspecies. The shells are less sculptured than most of the specimens from Arroyo Yalchactilá, recognized as form *lacustris*, but not more so than *P. largillierti* (Philippi) from Lake Amatitlán.

Pachychilus largillierti (Philippi)

A small series of this species was found in the millrace, near Samac, which is part of the Cajabón drainage.

Pachychilus corvinus (Morelet)

Three lots of this species are represented in the collections reported here. One series was found on the bank of Río Seniso, near Chamá; another came from a stream 3 km. south-

east of Panzamala in the headwaters of Río Rubel Cruz; and another series was taken from the headwaters of Río Panzamala.

Pachychilus corvinus indifferens Fischer and Crosse

Four lots of this subspecies were taken. A large series was found on the bank of Río Seniso, near Chamá. Smaller series were collected from the headwaters of Río Panzamala, from a creek 3 km. south of Samac, and from a small river near Samanzama.

Pachychilus graphium (Morelet)

One lot of this species was taken from a creek in the headwaters of Río Panzamala, near the hacienda bearing the same name. This stream is in the Cajabón drainage.

Pachychilus hinkleyi (Marshall)

A series of this species was taken from the bank of Río Seniso, near Chamá. This is probably a form or subspecies of *P. corvinus*, and is not a good species.

Psoronaias kuzensis Frierson

A few specimens of this sculptured mussel were found in a small stream near the hacienda at Chamá. The only other collection of this species is the type lot which was taken by Hinkley from a similar stream in the same area. The anatomy of this species is still unknown.

From the material at hand, as well as from that reported for this region by Hinkley, it is obvious that the greater amount of differentiation and speciation in Guatemala is observable among the land shells. The aquatic species are more or less uniform throughout large areas. Consequently, particular emphasis is placed here on the land shell fauna.

Large areas in the more elevated regions of Alta Vera Paz have been cultivated for growing coffee. Other sections of the department are still covered with what may be called original forest growth. Between these extremes there are various stages of modification in successive degrees of plant develop-

ment. In order to clarify the terminology the following brief definitions are given:

1. Pine forest: In the region of Samac there is a rather dense growth of pine trees. The stand is an almost pure one, but contains a dense undergrowth of shrubs.

2. Hardwood forest: In the same area near Samac is a thick stand of hardwood trees, belonging to the cloud forest, which is striking in contrast to the neighboring pines.

3. Lowland rain forest: The vegetation in the lowland regions grows in dense profusion, contrasting it decidedly with the purer stands characterizing the previous categories.

4. "Monte": This term, as used here, refers to low, scrub, second growth which pervades recently cultivated areas.

5. "Cafetal": This refers to the well-cultivated coffee areas which are kept rather clean. The piles of brush which are scattered among the coffee trees afford protection to certain mollusks.

In the following lists, species of land shells are assigned to definite vegetative zones:

SAMAC.—Original forest; elevation, 1300 meters.

PINE

Streptostyla lattarei
Salasiella margaritacea
Schasicheila pannucea
Epirobia polygyrella
Pseudosubulina salvini
Potera bisinuatus
Megalomastoma simulacrum
Chondropoma rubicundum
Drymaeus lattarei

"MONTE"

Euglandina fusiformis
Eucalodium walpoleanum

HARDWOOD (CLOUD) FOREST

Streptostyla lattarei
Salasiella margaritacea
Schasicheila pannucea
Brachypodella morini
Euglandina monilifera
Potera texturatus
Lysinoe ghiesbreghti
Helicina tenuis
Schasicheila minuscula
Schasicheila pannucea mis-
antlensis
 "CAFETAL"
Schasicheila pannucea

PANSAMALA.—Original forest; elevation, 1250 meters.

| | |
|---------------------------------|---------------------------|
| HARDWOOD (CLOUD) FOREST | “MONTE” |
| <i>Drymaeus sulphureus</i> | <i>Opeas beckianum</i> |
| <i>Guppya championi</i> | <i>Opeas gracile</i> |
| <i>Helicina tenuis</i> | <i>Pseudosubulina</i> sp. |
| <i>Helicina oweniana</i> | |
| <i>Megalomastoma simulacrum</i> | |
| <i>Helicina amoena</i> | |

CHAMÁ.—Original forest; elevation, 290 meters.

| | |
|---|---------------------------|
| LOWLAND RAIN FOREST | “CAFETAL” |
| <i>Streptostyla turgidula guatemalensis</i> | <i>Poteria bisinuatus</i> |
| <i>Megalomastoma simulacrum</i> | |
| <i>Helicina tenuis</i> | |
| <i>Helicina oweniana</i> | |
| <i>Helicina flavida</i> | |

Though Hinkley did not attempt to correlate the species he collected with geology, physiography, and plant ecology, his collections do have sufficiently accurate data to enable one to tabulate the species of the successive localities he visited as he traveled from the coastal region of Livingston into the interior regions of Chamá. When arranged in this way the number of land shells increases remarkably—from seventeen species collected at Quirigua and Livingston to thirty-nine at Chamá. The differences between the numbers of species at these two extremes are noted in Table I.

TABLE I

| Station | Species Previously Observed | Additional Species |
|------------------|-----------------------------|--------------------|
| Quirigua | 17 | |
| Livingston | 4 | 11 |
| Cavech | 14 | 14 |
| Jocelo | 22 | 5 |
| Chejel | | 3 |
| Chamá | 21 | 18 |

Not only are there changes in the species taken at the different stations within the relatively short distance of 120 miles between Livingston and Chamá, but in several instances remarkable generic changes are observed. Similar conditions in Curacao have been reported by H. B. Baker (1925: 40): “. . . we scarcely are in a position to visualize the almost complete change of fauna that may occur in a few miles, or even in a few yards.”

The data available in the collections of Hinkley and Stuart would indicate that there is a large amount of endemism in the region under consideration. No definite correlation is evident between the endemic zones and the factors—physiographical, geological, or ecological—which delimit such zones.

REFERENCES

- BAKER, H. BURRINGTON
1925 Isolation and Curacao. *Nautilus*, 39: 40.
- FISCHER, PAUL H., AND H. CROSSE
1870-1900 Étude sur les mollusques terrestres et fluviatiles du Mexique et du Guatemala. Mission scientifique au Mexique et dans l'Amerique Centrale. *Recherches Zoologiques*, Paris, Pt. 7, Vols. 1 and 2, and Atlas.
- GOODRICH, CALVIN, AND HENRY VAN DER SCHALIE
1937 Mollusca of Petén and North Alta Vera Paz, Guatemala. *Misc. Publ. Mus. Zool. Univ. Mich.*, 34: 1-50, 1 plate, 1 map.
- HINKLEY, ANSON A.
1920 Guatemala Mollusca. *Nautilus*, 34: 37-55.
- MARTENS, EDUARD VON
1890-1901 Land and Freshwater Mollusca. *Biologia Centrali-Americana. Zoologia*, 9: i-xxviii, 1-706, Pls. 1-44.
- PILSBRY, HENRY A.
1912 Notes on Shells from Quirigua, Guatemala. *Nautilus*, 26: 11-12.
1920 Review of the *Thysanophora plagiopycha* Group. *Ibid.*, 33: 93-96.

