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IQUITOS REGION, PERU

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THE REPTILES OF THE UPPER AMAZON BASIN,
IQUITOS REGION, PERU
II. CROCODYLIANS, TURTLES AND SNAKES

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Abstract

A total of four species of crocodylians, nine species of turtles and 88 species of snakes are recorded from the upper Amazon, Iquitos region, Peru. Reproductive data are presented for two species of crocodylians, three species of turtles and 43 species of snakes.

One section summarizes some of the literature problems and corrects the use of some snake names which were erroneously recorded from the Iquitos region. All pertinent characters relevant to variation among many of the snake species is presented wherever possible.

A brief analysis of faunal similarity indices is presented for lizards and snakes between well known localities within the Iquitos region. In addition, a faunal similarity index is given for lizards in two widely separated localities, Iquitos, Peru and Belem, Brazil. A summary of resource utilization of lizards and snakes of the Iquitos region is presented.

The format for the species accounts is similar to that given by Dixon and Soini (1975). Resource utilization, food items eaten, behavior and other ecological factors are presented for most species. Some species accounts may be followed by a remarks section where distributional and/or taxonomic problems are discussed.

Introduction

The present paper concludes a study of the reptilian fauna of the upper Amazon Basin in the vicinity of Iquitos, Peru. Part I, "Lizards and Amphisbaenians" (Dixon and Soini, 1975) contained 40 species of lizards and two amphisbaenians. The latter work includes descriptions of the major vegetation types and climate associated with the area, a map of the area with the major collecting localities indicated, a table listing all of the known reptiles for the area, a summary of the reproduction of most of the species of

lizards, and descriptive comments on the natural history of each species. The same collecting sites, vegetative descriptions, and methods of obtaining material utilized in the latter work are adequate for the present paper and need not be repeated here. However, photographs of some of the collecting sites were not included in Part I, and are presented in Figures 1, 2, and 3.

The present paper includes ecological and taxonomic data on four species of crocodylians, nine species of turtles, and 88 species of snakes. Unfortunately, there were far fewer individuals of this group than there were of lizards and little reproductive data could be accumulated for the group as a whole. A more comprehensive treatment of the venomous snakes (Elapidae, Viperidae) is presented elsewhere (Soini, in press).



FIGURE 1. An exposed slope near the top of a small hill near Mishana, Peru. Note the sparse crown cover and leaf litter. Photograph by Robert W. Henderson.



FIGURE 2. An aguajal swamp and surrounding leaf litter near Mishana, Peru. Note the dense overstory and leaf litter. Photograph by Robert W. Henderson.

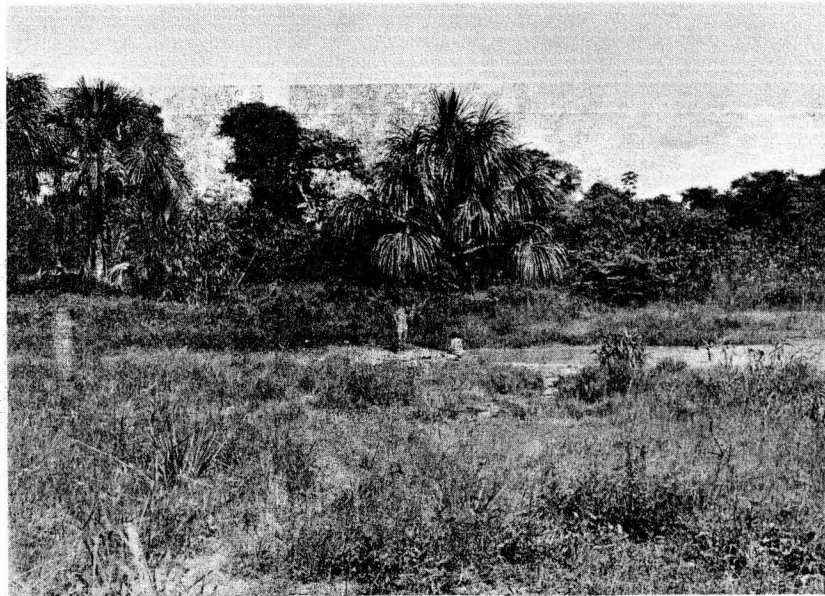


FIGURE 3. Pond in secondary growth (purma) near Iquitos, Peru, where *Helicops angulatus* and *H. polylepis* are sympatric. Photograph by Robert W. Henderson.

For convenience of clarity and brevity, the methods used to introduce each species are identical to that utilized for the lizards. In addition, detailed taxonomic data are presented in a standard sequence for each species. The snakes as a group are poorly known and all variation exhibited by each species in the Iquitos region is presented with the hope that future workers may determine the correct names if ours are found to be in error. Detailed color notes on live specimens are presented wherever possible. Data for crocodylians and turtles are inadequate. Eggs and meat of both groups of reptiles are utilized for food by the local populace and overhunting has reduced certain species to extremely low densities and, in some cases, extirpated the form from the Iquitos region.

Materials and Methods

A total of 1,031 specimens of crocodylians, turtles and snakes were examined from the Iquitos region. The majority of these are housed in the Texas Cooperative Wildlife Collection of Texas

A & M University (TCWC), with other material housed in the Museu de Zoologia, Universidade de Sao Paulo (MZUSP), Milwaukee Public Museum (MPM), Museum of Comparative Zoology (MCZ), Academy of Natural Sciences of Philadelphia (ANSP), American Museum of Natural History (AMNH), National Museum of Natural History (USNM), and Pekka Soini's (PS) private collection.

The methods of collecting specimens, natural history data, and habitat and climatic data, are the same as those presented by Dixon and Soini (1975). In some cases, rare or endangered species were taken alive, examined, and released.

Standard methods of measuring Length Overall (LOA), snout-vent length (SVL), and length and width of eggs (both oviducal and recently laid) were utilized. Standard methods of counting the squamative features of snakes, such as ventrals and caudals, were utilized. The ranges and means of various characters are given by sex wherever possible. Sex was determined by gonadal examination. Where a number appears without a number following in parentheses for a particular scale feature, that particular character is invariable in the sample examined. To conserve space, the number of supralabials entering the orbit, such as the third plus the fourth, have been written 3+4. Hatchlings or newborn young were determined by the presence of a recently healed or open umbilical scar; juveniles were judged by virtue of their size in relation to adults. Stomach contents were identified to species where possible. Any literature pertinent to records for, and natural history of, a species in the region were also utilized.

Corrections to the Literature

There are several corrections to be made to the list of the Iquitos area reptiles presented by Dixon and Soini (1975). One of the *Typhlops* sp. has been identified as *T. brongersmianus* and the other is a new species currently being described by Dixon and Hendricks (in prep.). The *Leimadophis* sp. is also a new species, currently being described by C. W. Myers (in prep.). The following names should be deleted from the list: *Atractus resplendens*, *Leimadophis almadensis*, *Leimadophis poecilogyrus*, *Liophis cobella*, *Liophis purpurans*, *Liophis undulatus*, *Pseudoeryx plicatilis ecuadorensis*. The following should be added: *Atractus poeppigi*, *Chironius pyrrhopogon*, and *Liophis chrysostomus*.

There are several other literature records that require clarification. Cope's (1871, 1885) reports of *Liophis nicagus* (= *Liophis undulatus* of some authors) from Pebas has been shown to be *Rhadinaea brevirostris* by C. W. Myers (pers. comm.). Some of the

specimens of *Leimadophis almadensis* that Cope (1868) reported from Napo and Marañon have been reexamined and represent the unspotted venter phase of *L. reginae*.

A part of the *Liophis* and *Leimadophis* material for Cope's (1875) report of the Orton collections from the upper Amazon have been reexamined and found to have erroneous locality data. We suspect that there was some mixing of Orton's material with that collected by Capt. Thomas A. Page in 1853 on his extended trip to the Paraguay River, e.g., *Lygophis rutilus* (ANSP 11583-6 = *Liophis anomalus*, *Leimadophis albiventris* (ANSP 11608) = *Liophis miliaris*, *Liophis merremi* (ANSP 11547) = *Philodryas patagoniensis*, *Leimadophis m-nigrum* (ANSP 11548-53) = *Leimadophis poecilogyrus pinctincola*. All of these species occur in Paraguay, Brazil, and Argentina, but not in Peru. Anyone utilizing Cope's (1862-1885) papers, especially those on Peruvian amphibians and reptiles, would be wise to reexamine all of the available material associated with those reports.

Faunal Similarity Index

We have attempted to correlate the number of lizard (exclusive of amphisbaenians) and snake species among three frequently visited localities (Centro Unión, Mishana, Moropon see fig. 4) of the Iquitos region, and the lizard species with a herpetologically well known area near the mouth of the Amazon (Belém region), some 2,800 airline km east of Iquitos. We have used the faunal similarity index $C \times 100 / N_1 + N_2 - C$ (C = species common to both areas; N_1 = number of species in larger fauna; N_2 = number of species in smaller fauna) because it accounts for the amount of endemism that may be present at each locality and expresses the extent of faunal similarity.

The greatest distance between any of the Iquitos localities is 50 airline km, therefore one might expect a relatively high similarity between any two localities. The highest similarity index (82.3%) is between the lizard faunas of Centro Unión and Moropon. The similarities between Moropon and Mishana, and between Mishana and Centro Unión are 79.4% and 68.6% respectively (Figure 4). The disparity between similarities is remarkable, since these localities are relatively close to one another. The Río Amazonas, normally a major barrier to many rain forest species of birds (Müller, 1973), shows little as a barrier between the lizard faunas of Centro Unión and Moropon, while the same river shows a greater barrier to faunal exchange (drop of 13.7% in similarity) between the lizard faunas of Mishana and Centro Unión. One

possible explanation for the disparity between the latter localities and the high similarity between the former, is that Moropon is much closer to the west bank of the Amazon than is Mishana. During the course of the many meanderings of the Amazon, it is quite possible that the Moropon site may have been located on the east bank of the Amazon within the past few thousand years.

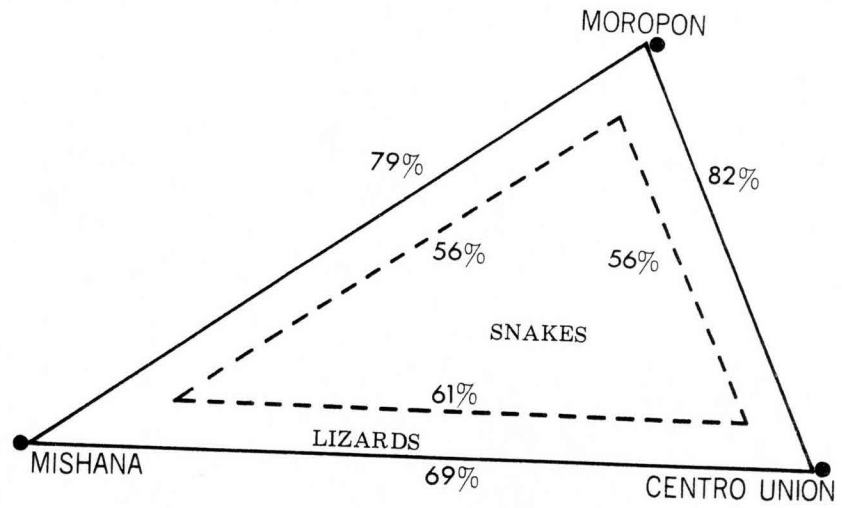


FIGURE 4. Faunal index similarities for 40 species of lizards and 88 species of snakes for three, well sampled localities of the Iquitos Region, Peru.

The similarity indices for the snake fauna are nearly equivalent regardless of distance or possible barriers. The similarity index of the snake fauna between Centro Unión and Moropon is 56%, between Moropon and Mishana 56%, and 49% between Mishana and Centro Unión.

One must take into account the actual numbers of species of each of the reptile groups to understand the disparity between the faunal index similarities for each of the groups. One should never combine different groups, such as a lizard fauna with a snake fauna; *e.g.*, there are 40 species of lizards in the Iquitos region that appear to show greater resource utilization, and maintain much greater densities of individuals than the 88 species of snakes in the same region. With lower numbers of species, and greater resource utilization, one would expect a closer faunal similarity between adjacent localities. Snakes, however, have greater species diversity, maintain narrower resource utilizations, and have lower densities, thus accounting for the decrease in similarity between adjacent localities. Therefore, the greater the diversity of species of any group of reptiles, the less correlation one can expect between faunal areas of similar species diversity. Conversely, with less species diversity and greater species resource utilization, the correlation between comparable faunal areas should be higher.

An interesting faunal relationship exists between the lizard faunas of the Iquitos region, and Belém region which are some 2,800 km apart. Each locality maintains nearly the same number of species (Iquitos 38, Belém 34) of lizards (excluding amphisbaenids). The faunal similarity is 42%, or 1.0% change in faunal similarity for every 50 km between the two areas. The distance between Mishana and Centro Unión is 50 km, and the faunal change is 31.7% or 0.6% change in faunal similarity for every one km. Thus there is a greater faunal diversity shift between adjacent localities in the Iquitos region than there is from Iquitos to Belém.

In Amazonian lizard faunas, there appears to be a close faunal similarity throughout the entire basin with a variable amount of localized faunal dissimilarity. This does not wholly agree with Müller's (1973) boundary of the "Amazon Dispersal Centre," whose eastern limit is the Rio Negro, Brazil. We suggest that the entire Amazon Basin is a "dispersal centre" in the sense of Müller, and should not be subdivided on the basis of local endemism of mixed faunal groups, *i.e.*, birds and lizards, whose local endemism may have no relationship to each other.

Resource Utilization

We have attempted to correlate the number of species of the two common groups, lizards and snakes, with their respective life style and preferred habitat (Figure 5). No attempt has been made to separate the groups into a particular microhabitat. For example, *Bothrops atrox* juveniles are frequently arboreal while adults are terrestrial; for the present analysis we place the species in a terrestrial category. All species of *Chironius* are frequently found in shrubs and trees, but are more often found on the ground and are therefore placed in the terrestrial category. Although all coral snakes were found above ground, they are semifossorial and were placed in the fossorial category. The allocation of each species to a particular life style and habitat was based on our knowledge of its general habitat preference and life style. The basic habitat of the upper Amazon is rain forest, but it is somewhat altered in parts of our study area by man's activities. We have arbitrarily divided the rain forest into three categories.

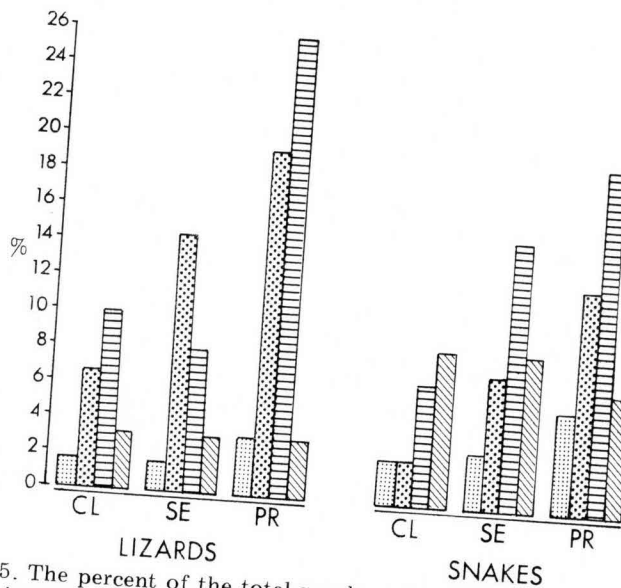


FIGURE 5. The percent of the total number of species of lizards and snakes of the Iquitos Region, Peru, by their respective habitats and life style (CL = Clearings; SE = Secondary forests; PR = Primary forests; small dots = aquatic; large dots = arboreal; horizontal lines = terrestrial; diagonal lines = subterrrestrial).

(1) Primary forest: an area where lumbering, farming or other alterations of the habitat have not occurred. (2) Secondary forest: an area where the forest has been cut once to several times and may be at various seral stages. (3) Clearings: areas where intensive agricultural practices have maintained the land in a somewhat treeless state, but often with a few trees left standing.

The life styles are generally divided into four categories: (1) Aquatic: those species that are generally associated with water (e.g., species of *Neusticurus*, *Dracaena*, *Helicops*, *Hydrops*, *Pseudoeryx* and *Eunectes*). (2) Subterrestrial: those species usually underground or under debris (e.g., species of *Bachia*, *Typhlops*, *Anilius*, *Atractus*, *Micrurus*, etc.). (3) Arboreal: those species usually found in arboreal situations (some or all species of *Anolis*, *Gonatodes*, *Polychrus*, *Iguana*, *Plica*, *Uracentron*, *Oxybelis*, *Corallus*, *Dipsas*, *Imantodes*, *Tripanurgos*, etc.) (4) Terrestrial: those species most often associated with the forest floor (e.g., the common genera are *Pseudogonatodes*, *Alopoglossus*, *Iphisa*, *Amiiva*, *Kentropyx*, *Leposoma*, *Tupinambis*, *Ptychoglossus*, *Epicrates*, *Clelia*, *Leimadophis*, *Liophis*, *Oxyrhopus*, *Rhadinaea*, *Xenodon*, *Bothrops*, etc.).

Obviously, lizards are less abundant in terms of species (40) than are the snakes (88), but usually have higher densities of individuals. Few lizard species utilize certain habitats because of obvious handicaps, e.g., ability to swim or burrow well, while snakes are more adaptable to these situations and have higher numbers of species utilizing them, thus more structural habitat segregation by snakes and more opportunities for speciation. However, the reverse is true for the arboreal zone. There are proportionately more species of arboreal lizards than snakes. There are more opportunities for lizards than for snakes to spatially partition a tree trunk 60 m in height because of their ability to climb. An example of vertical stratification is an instance in which the basal area of a tree is utilized by *Gonatodes*, the lower one-third by *Plica*, the middle one-third by *Uracentron*, and the canopy by *Polychrus*, *Anolis*, and *Iguana*.

The adaptive zones are well illustrated in Figure 5, where the density of arboreal lizard species are considerably higher in secondary and primary forests than snakes. However, snakes more thoroughly utilize a wider variety of adaptive zones, and are more equally distributed in secondary and primary forests than lizards.

Reproduction

We have discussed reproduction of each species in the species accounts wherever data were available. However, we have summarized the known reproductive data of our samples (Table 1)

Table 1. Reproductive Data for 43 Species of Snakes from the Iquitos Region, Peru. (H = hatchling, O = oviducal or recently laid eggs, E = embryos present).

| | J | F | M | A | M | Ju | Jul | A | S | O | N | D |
|-------------------------------------|---|---|---|----|---|----|-----|----|---|---|---|---|
| Typhlops brongersmianus | | | | | | | | | | | | |
| Anilius scytale | H | H | H | | | | | O | | | | |
| Boa constrictor | H | H | | | | | | | | | | |
| Corallus caninus | | | | | | | | | | | E | |
| Eunectes murinus | | H | H | | | | | H | | | | |
| Atractus Sp. A. | | | | H | | | | | | | | |
| Atractus collaris | | | | | | | | | H | | | |
| Atractus latifrons | | | | | | | | | | H | | |
| Chironius carinatus | | | | | | | | H | | | | |
| Chironius fuscus | | | | H | | | | | | | | |
| Dipsas catesbyi | | | | HO | | | H | H | | | H | |
| Drymarchon corais | | O | | | | | | | O | | | O |
| Drymoluber dichrous | | H | | H | | | | | | | | O |
| Erythrolamprus aesculapii | | | | | | | | | | H | | |
| Helicops angulatus | H | | | | | | | | | | | H |
| Helicops yacu | | | | | | | O | HO | H | | | |
| Hydrops martii | | | | | | O | | | | | | |
| Hydrops triangularis | | | | | | | | | | | H | H |
| Imantodes cenchoa | | H | H | | | | | H | H | | | |
| Imantodes lentiferus | | | | | | | | | | | | |
| Leimadophis reginae | | | | | H | H | | | | H | H | |
| Leptodeira annulata | O | | | | H | H | H | | | H | H | |
| Leptophis ahaetulla | | | O | | | | | | | O | | |
| Liophis breviceps | | | O | | | | | | | | | |
| Liophis crysostomus | | | | | | | | | | | H | H |
| Oxybelis aeneus | | | H | | | | | | | | H | H |
| Oxybelis argenteus | | | | | | | | O | | | | |
| Oxyrhopus petola | H | H | | | H | | | H | | H | O | |
| Oxyrhopus trigeminus | H | | | | | | | | H | | | |
| Pseudoboa coronata | | H | | | | | | H | | | | |
| Pseudoeryx plicatilis | | | | | | | | | | H | | |
| Pseustes poecilonotus | | | | | | | | | | | | |
| Rhadinaea brevirostris | | | H | | H | | | H | | | | |
| Tantilla melanocephala | | | | | | | H | O | | | | H |
| Tripanurgos compressus | | | | | | | | | | | O | |
| Xenodon rabdocephalus | | | H | | | | | | | | | |
| Xenodon severus | H | H | | H | O | | | | | | | O |
| Xenopholis scalaris | | | | | | H | | | | | O | |
| Bothrops atrox | | | | | | | | | | | O | |
| Bothrops bilineatus | H | H | H | | H | HE | H | HE | H | H | H | |
| Bothrops brazili | | | | | O | | | | | | | |
| Micrurus lemniscatus | H | | | | | | | | | | | |
| Micrurus surinamensis | | O | | | | O | | | | | | |

so that the reader may digest it at a glance. Although we have little data to support cyclic reproduction in crocodilians and turtles, we suspect that all but one are cyclic, based on information from the local populace and our knowledge of their nesting habits. One turtle, *Geochelone denticulata*, is probably acyclic.

We have ascertained that nesting of aquatic turtles in the major river systems of the Iquitos region has been reduced for some time. The beaches that normally appear during the low water period (August-October) on the Amazon River and its major tributaries have been severely reduced in size for at least three years. The river has remained in a near flood stage, probably due to excess rainfall runoff from the Amazonian slopes of the Andes where extensive lumbering has occurred.

We have samples from nearly every month of the year for the common species of snakes, but for many of the species we have only a few individuals that may have been found only once every six to eight months. Thus our reproductive data are poor for most forms (43 species) or absent (45 species). We did not find nests of any of the snake species, but occasionally an individual would lay eggs or bear young in captivity.

Key to the Genera and Species of Crocodilians of the Iquitos Region, Peru

1. Ten premaxillary teeth iris greenish 2
 Eight premaxillary teeth, iris chestnut *Paleosuchus**
- * Second row of postoccipitals small, minimum of two rows
 of dorsal scales between hind limbs *trigonatus*
 Second row of postoccipitals large, minimum of four rows
 of dorsal scales between hind limbs *palpebrosus*
2. Eyelid smooth or striated, 4-5 transverse rows of
 postoccipitals *Melanosuchus niger*
 Eyelid wrinkled or tuberculate, 2-3 transverse rows of
 postoccipitals *Caiman crocodilus*

Key to the Genera and Species of Turtles of the Iquitos Region, Peru

1. Feet developed for swimming, some webbing present . . 2
 Feet elephantine-like, no webbing. . *Geochelone denticulata*
2. Neck withdrawn to the side, plastron rigid 3
 Neck withdrawn vertically,
 plastron hinged *Kinosternon scorpioides*

- 3. Nuchal plate present, no large interparietal scale 4
- Nuchal plate absent, a large interparietal scale *Podocnemis**
- *a. Subocular absent, upper jaw not sharply notched medially, carapace strongly flattened *expansa*
- Subocular present, upper jaw sharply notched medially, carapace convex and/or sloping b
- b. Interparietal broadly heart-shaped, parietals meeting behind interparietal, keel, when present, most evident on third vertebral *unifilis*
- Interparietal elongate, separating parietals, carapace with distinctly raised keel on second vertebral. *sextuberculata*
- 4. Head rounded above, nose normal, chin and neck without fringes 5
- Head flat above, nose ending in a long trunk, chin and neck with fringes *Chelus fimbriatus*
- 5. Carapace strongly flattened, with vertebral depression, dorsal surface of head not divided into small scales *Platemys platycephalus*
- Carapace rounded, frequently with a vertebral keel, dorsal surface of head divided into many small scales. . . *Phrynops**
- *a. Head very large, jaws uniform yellow or tan. *nasutus*
- b. Head normal, jaws mottled with gray or black . . . *gibbus*

**Key to the Genera and Species of Snakes
of the Iquitos Region, Peru**

- 1. Ventrals and dorsals equal in size *Typhlops*
- Ventrals slightly or greatly larger than dorsals 2
- 2. Ventrals slightly larger than dorsals, not extending completely across venter 3
- Ventrals greatly enlarged, extending completely across venter 4
- 3. Body pattern of complete rings *Anilius scytale*
- Body pattern without rings *Eunectes murinus*
- 4. Loreal region without a pit 5
- Large pit in loreal region between eye and nostril 51

| | | |
|-----|---|----------------------------------|
| 5. | Scale rows at midbody less than 30. | 6 |
| | Scale rows at midbody more than 30. | 52 |
| 6. | First maxillary tooth enlarged, with venom canal | <i>Micrurus</i> |
| | First maxillary tooth normal, no venom canal | 7 |
| 7. | Scales in even number of rows | 8 |
| | Scales in odd number of rows | 9 |
| 8. | Scales at midbody 12 or less | <i>Chironius</i> |
| | Scales at midbody 14 or more | <i>Spilotes pullatus</i> |
| 9. | Dorsal scale rows 13 | <i>Dipsas</i> |
| | Dorsal scale rows 15 or more | 10 |
| 10. | Dorsal scale rows 15 | 11 |
| | Dorsal scale rows 17 or more | 22 |
| 11. | Dorsals keeled, with 15-15-11 reduction | <i>Leptophis</i> |
| | Dorsals smooth, 15-15-15, no reduction | 12 |
| 12. | Anal divided | 13 |
| | Anal entire. | 18 |
| 13. | Body pattern consists of complete rings round body . . . | 14 |
| | Body pattern without complete rings | 15 |
| 14. | Loreal present | <i>Erythrolamprus aesculapii</i> |
| | Loreal absent | <i>Hydrops</i> |
| 15. | Internasals fused into single plate . . . | <i>Pseudoeryx plicatilis</i> |
| | Internasals normal | 16 |
| 16. | Loreal absent | <i>Tantilla melanocephala</i> |
| | Loreal present | 17 |
| 17. | Diastema absent in maxillary tooth row | <i>Rhadinaea</i> |
| | Diastema present in maxillary tooth row . . . | <i>Leimadophis</i> |
| 18. | One or two labials entering orbit. | 19 |
| | Three labials entering orbit | 21 |
| 19. | Internasals fused into single plate . . . | <i>Pseudoeryx plicatilis</i> |
| | Internasals normal | 20 |

| | | | |
|-----|--|---------------------------------|----|
| 20. | Loreal present | <i>Atractus</i> | |
| | Loreal absent | <i>Drepanoides anomalus</i> | |
| 21. | Ventrals less than 180 | <i>Drymoluber dichrous</i> | |
| | Ventrals more than 200 | <i>Imantodes</i> | |
| 22. | Dorsal scale rows 17 | | 23 |
| | Dorsal scale rows 19 or more | | 33 |
| 23. | Dorsal scale rows 17-17-17 | | 24 |
| | Dorsal scale rows 17-17-15 or 17-17-13 | | 27 |
| 24. | Preocular absent | <i>Atractus</i> | |
| | Preocular present | | 25 |
| 25. | Ventrals 250 or more, anal entire | <i>Imantodes</i> | |
| | Ventrals 200 or less, anal divided | | 26 |
| 26. | Caudals single, 85 or more | <i>Pseudoboa coronata</i> | |
| | Caudals paired, 35 or less | <i>Xenopholis scalaris</i> | |
| 27. | Dorsal scales keeled | | 28 |
| | Dorsal scales smooth | | 30 |
| 28. | Anal plate entire | <i>Dendrophidion dendrophis</i> | |
| | Anal plate divided | | 29 |
| 29. | Two supralabials entering orbit, pupil vertical | <i>Thamnodynastes pallidus</i> | |
| | Three labials entering orbit, pupil round | <i>Drymobius rhombifer</i> | |
| 30. | Loreal absent | <i>Oxybelis</i> | |
| | Loreal present | | 31 |
| 31. | Diastema present in maxillary tooth row | <i>Leimadophis</i> | |
| | Diastema absent in maxillary tooth row | | 32 |
| 32. | Hemipenis single, tip capitate | <i>Rhadinaea</i> | |
| | Hemipenis bifurcate, tip disked | <i>Liophis</i> | |
| 33. | Dorsal scale rows 19 or less | | 34 |
| | Dorsal scale rows 21 or more | | 48 |
| 34. | Anal plate usually entire | | 35 |
| | Anal plate usually divided | | 45 |

| | | |
|-----|--|-----------------------------------|
| 35. | Some or all dorsal scales keeled | 36 |
| | All dorsal scales smooth | 39 |
| 36. | Internasals fused into a single shield | <i>Helicops</i> |
| | Internasals normal | 37 |
| 37. | Caudals 50 or less | <i>Xenodon</i> |
| | Caudals 100 or more | 38 |
| 38. | Ventrals 220 or less, body without rings | <i>Pseustes</i> |
| | Ventrals 230 or more, body completely ringed | <i>Rhinobothyrum lentiginosum</i> |
| 39. | One anterior temporal | 40 |
| | Two anterior temporals | 41 |
| 40. | Caudals 50 or less | <i>Xenodon</i> |
| | Caudals 100 or more | <i>Philodryas viridissimus</i> |
| 41. | Vertebral scale row distinctly larger than paravertebral rows | <i>Tripanurgos compressus</i> |
| | Vertebral scale row not enlarged | 42 |
| 42. | Diastema present in maxillary tooth row | 43 |
| | Diastema absent in maxillary tooth row | 44 |
| 43. | Third to fifth mandibular teeth much enlarged | <i>Siphlophis cervinus</i> |
| | Mandibular teeth about equal in size | <i>Clelia</i> |
| 44. | Posterior maxillary teeth enlarged and grooved | <i>Oxyrhopus</i> |
| | Posterior maxillary teeth normal | <i>Drymarchon corais</i> |
| 45. | Loreal shield absent | <i>Hydrops</i> |
| | Loreal shield present | 46 |
| 46. | Internasals fused into a single shield | <i>Helicops</i> |
| | Internasals normal | 47 |
| 47. | Ventrals 160 or less | <i>Leimadophis</i> |
| | Ventrals 185 or more | <i>Leptodeira annulata</i> |
| 48. | Dorsal scale rows 21 | 49 |
| | Dorsal scale rows 23 or more | 50 |

49. Caudals 120 or more *Pseustes*
 Caudals 50 or less *Xenodon*
50. Internasals fused into a single shield *Helicops*
 Internasals normal *Pseustes*
51. Posterior subcaudals normally divided
 or entire *Bothrops*
 Posterior subcaudals finely divided *Lachesis muta*
52. Sensory pits absent in supralabials *Boa constrictor*
 Sensory pits present in supralabials 53
53. Two to three loreals *Corallus*
 One loreal *Epicrates cenchria*

Atractus

1. Dorsal scale rows 15 2
 Dorsal scale rows 17 3
2. Ventrals plus caudals 184-190, maxillary
 teeth 7-8, 2 secondary temporals *elaps*
 Ventrals plus caudals 161-171, maxillary
 teeth 5-6, 1 secondary temporal *poepigii*
3. Body pattern of rings *latifrons*
 Body pattern of blotches, crossbands, spots,
 unicolor or with nuchal collar 4
4. Caudals entirely black species C
 Caudals cream, pink, red or obscurely spotted 5
5. Dorsum reddish with paired dark spots or very
 narrow crossbands 6
 Dorsum tan, brown or blackish with darker blotches 7
6. Dorsum with 5 to 50 narrow brownish crossbands . species A
 Dorsum with paired rows of 60 or more
 dark spots *collaris*
7. Ventrals plus caudals 200 or more *major*
 Ventrals plus caudals 195 or less 8
8. Caudals in male 37, female 30, LOA/tail percent in
 male 14.6, female 10.2 species B
 Caudals in male 25-31, females 18-26, LOA/tail
 percent in males 12 or less, females 10 or less *badius*

Bothrops

1. Caudals usually single 2
Caudal rows usually paired 3
2. Second supralabial borders loreal pit, ventrals
211-253, caudals 71-91 *castelnaudi*
Loreal pit separated from supralabials, ventrals
125-134, caudals 44-50 *hyoprurus*
3. Dorsum light green with yellow paraventral
stripes *bilineatus*
Dorsum variable, but never green;
with dark blotches 4
4. Dark postocular stripe distinct,
ventrals 180 or more *atrox*
Dark postocular stripe absent,
ventrals 159-180 *brazili*

Chironius

1. Dorsal scale rows 12-12-10(8) 2
Dorsal scale rows 10-10-10(8) 4
2. Anal divided, total caudals usually less than
total number of ventrals *carinatus*
Anal entire, total caudals usually more than
total number of ventrals 3
3. Ventrals 132-142, caudals 124-148, maxillary
teeth 28-30 *pyrrhopogon*
Ventrals 186-191, caudals 182-192, maxillary
teeth 35-38 *multiventris*
4. Ventrals 140-155, maxillary teeth 41-51,
paravertebrals keeled *fuscus*
Ventrals 152-164, maxillary teeth 33-38,
paravertebrals smooth *scurrulus*

Clelia

1. Supralabials 7, ventrals 210 or more *clelia*
Supralabials 8, ventrals 200 or less *bicolor*

Corallus

- 1. Dorsum green, ventrals 220 or less *caninus*
 Dorsum variable but never green, ventrals
 250 or more *enydris*

Dipsas

- 1. Dorsal pattern of triangular or lozenge shaped blotches,
 usually widest at ventrals with yellow spot between
 corners of blotches at ventrals *indica*
 Dorsal pattern of rounded, dark brown or black
 blotches or saddles, interspaces tawny brown. 2
- 2. Blotches narrower at vertebral row than laterally,
 loreal not entering eye *catesbyi*
 Blotches wider at vertebral row than laterally,
 loreal enters eye *pavonina*

Helicops

- 1. Midbody scale rows 21 or more 2
 Midbody scale 19 3
- 2. Midbody scale rows 23, ventrals 125 or less . . . *polylepis*
 Midbody scale rows 25, ventrals 130 or more *yacu*
- 3. Ventrals 120 or more, caudals 60 or less *leopardinus*
 Ventrals 115 or less, caudals 65 or more *angulatus*

Hydrops

- 1. Midbody scale rows 15 *triangularis*
 Midbody scale rows 17 *martii*

Imantodes

- 1. Scale rows 15, 3 labials entering orbit *lentiferus*
 Scale rows 17, 2 labials entering orbit *cenchoa*

Leimadophis

- 1. Scale rows 19 *typhlus*
 Scale rows 17 or less 2

2. Small form, caudals less than 40 *pygmaeus*
Large forms, caudals more than 50 3
3. Two labials entering orbit, maxillary teeth 27 or less,
tail/LOA per cent 26 or less *reginae*
Three labials entering orbit, maxillary teeth 29 or more,
tail/LOA per cent 27 or more *new species*

Leptophis

1. Dorsum and venter with strong coppery tint, venter
with dark brown and white streaking *cupreus*
Dorsum greenish, venter yellowish, lateral
blackish streak anteriorly *ahaetulla*

Liophis

1. Supralabials 8, infralabials 10, maxillary teeth
23 or more *chrysostomus*
Supralabials 7, infralabials 8, maxillary teeth
17 or less *breviceps*

Micrurus

1. Black rings in triads, triads separated by single
red bands 4
Black rings absent or alternating with red or
yellow rings only 2
2. Red, yellow and/or black rings present, first pair
of infralabials in contact behind mental 3
Black & orange rings incomplete dorsally, first pair
of infralabials not in contact behind mental . . . *narduccii*
3. Red rings 25 to 50, alternating with yellow, brown
or black rings, delimited dorsally by white flecks,
ventrally by narrow white bands *langsdorffi*
Red rings absent, 10-14 black rings alternating with
broad yellow rings (frequently obscure) . . . *putamayensis*
4. Yellow rings equal to or longer than black rings,
caudals 15-22 *spixii*
Yellow (or white) rings shorter than black rings,
caudals more than 22 5

5. Black rings of triad subequal, much longer than red (orange) rings, triads 6-7, anal plate entire *hemprichii*
Central black ring of triad longer than marginal rings that are shorter than red rings, 7 or more triads, anal plate divided 6
6. Cephalic scales outlined with black, triads 8-9, ventrals 162-187 *surinamensis*
Snout black with yellow crossband, triads more than 9, ventrals more than 200 7
7. Triads 10-13, ventrals 221-261, size large *lemniscatus*
Triads more than 13, ventrals more than 270, size small and slender *filiformis*

Oxybelis

1. Supralabials 6, infralabials 7, temporals 1+2, anal entire *argenteus*
Supralabials 9 or more, temporals 2+2, anal divided 2
2. Dorsum green with white ventrolateral stripe, 3 labials touching prefrontals *fulgidus*
Dorsum brownish with many dark flecks, 2 labials touching prefrontals *aeneus*

Oxyrhopus

1. Caudals 100 or more, mainly arboreal *petola*
Caudals less than 100, mainly terrestrial 2
2. Triads of dorsum longer than interspaces, snout usually light spotted *trigeminus*
Triads of dorsum equal to or shorter than interspaces, snout dark *melanogenys*

Pseustes

1. Scale rows 19 *sulphureus*
Scale rows 21 or more *poecilonotus*

Rhadinaea

1. Dorsum dark, caudals less than 60 *brevirostris*
Dorsum light, caudals more than 70 *occipitalis*

Typhlops

1. Scales around body 18-18-14 or 18-16-14 *new species*
Scales around body 20-20-20 or 20-20-18 2
2. White snout and tail ring, body blackish, dorsals
250-300 *reticulatus*
Snout streaked, no tail ring, body yellowish brown,
dorsals less than 240 *brongersmiamus*

Xenodon

1. Scale rows 19, anal entire *rabdocephalus*
Scale rows 21, anal divided *severus*

Crocodylians and Turtles

We have purposely not maintained an adequate series of specimens of crocodylians and turtles because of their "threatened" status in the region. We have captured living specimens of several of the species, examined and released them back to the wild. On other occasions, we have examined specimens in the Iquitos market place, village homes, killed on roads, and remains of specimens from village midens. Our scant information on their reproduction was obtained by us or by discussions with local natives. Although our ecological information is scant, we assume that a little information is better than none at all.

Crocodylia

Caiman crocodilus crocodilus (Linnaeus)

(TCWC 1). A common crocodylian of South America, but relatively rare (or locally common) in the Iquitos region. Iquitos (1 juv.). First record: Iquitos (Carrillo de Espinoza, 1970). This species is an inhabitant of rivers, ponds, oxbow lakes, lower areas of forest streams and flooded forests. Juveniles frequently bask by floating in the water in sunny spots in flooded forests. Occasionally they are seen basking on river banks. Their "home" pond or lake may completely dry up in the low water season, in which case they remain hidden, completely embedded in the bottom mud. Young specimens are commonly hunted for food and in past years, a large number of skins of adult specimens were shipped out of Iquitos annually.

The nest consists of a mound of leaf-stick-mud debris and is usually constructed in marshy or inundateable terrains at or near the edges of rivers, oxbow lakes and ponds. An adult female killed by natives near Iquitos on 16 September contained 27 immature eggs. Two nests containing 30 and 33 eggs each, were discovered by natives in the same neighborhood in October. On 25 December a complement of 23 eggs was brought to Mishana to be eaten by the local natives. There was no embryo development and they appeared to have been laid within the past few days. The reproductive biology of a population of this species in Venezuela has been thoroughly studied by Staton and Dixon (*in press*).

Melanosuchus niger (Spix)

A large crocodylian found in the larger lakes and lagoons of the region. First record: Iquitos (Carrillo de Espinoza, 1970). This species is extremely rare in the region where it was, in past years, actively hunted for its skin. We have been able to determine that large individuals of this species are essentially non-existent in the region and even small individuals are only rarely seen. We consider this species to be endangered in the area.

The local natives indicate that it builds a nest (mound type) along the swampy edges of lakes and lagoons. For details of its ecology, see Medem (1963).

Paleosuchus palpebrosus (Cuvier)

(TCWC 1, PS 1). A rare crocodylian of small forest streams. Quebrada Pampa Chica, Rio Nanay (1 juv.), Mishana (1 ad., skin & head). First record for Peru: this paper. This species is apparently rare in the area as one of us (Soini) has examined skins of over 100 live, mounted, skins, skulls and carcasses of specimens of *Paleosuchus* from the Iquitos region over a seven year period, and all except the above two were identified as *P. trigonatus*. The local natives do not distinguish between the two species and they occupy the same habitat (Medem, *pers. comm.*). Medem indicates that where the two are sympatric, one is abundant, the other rare. For details of its ecology, see Medem (1958, 1967).

Paleosuchus trigonatus (Schneider)

(TCWC 7). A more or less common crocodylian found in closed canopy forest streams. Iquitos (2), Mishana (4), Moropon (1). First record: Iquitos (Medem, 1958). This species appears restricted to small forest streams of the region. However, Campbell

(1973) found the species in a spring-fed creek in an open pasture in southern Peru. This species is often hunted for food and the skin is considered of little value by the natives.

This species may be more terrestrial than other species of the region. It has been observed a considerable distance away from water. During the day they usually hide in cavities under stream banks and contrary to *C. crocodilus*, were never observed basking. The local natives indicate that certain individuals will continue to live in and around basins of dried up forest streams and swamps during the drier part of the year.

The nest is built on non-flooded terrain in the forest, usually near the edge of a stream, but occasionally some distance from water. The eggs are reported to be laid in August and September and clutch size varies from 10 to 30 eggs. A large female killed by local natives on a forest trail on 27 August contained well developed, hard shelled eggs. Another female killed by natives on or about 10 July also contained fully developed eggs.

A nest containing 13 recently laid eggs was found on the edge of a stream in primary forest near Mishana on 14 August. No embryos had developed yet and the eggs were consumed by local natives (Andres Marmol, *pers. comm.*).

A nest was discovered by Soini on 30 November that contained 10 eggs. The nest, approximately 120 cm in diameter and 45 cm in height, was located on the bend of a small forest stream, about 4 m from the water, and was composed of leaf litter, sticks and other debris. The nest was constructed beside a small log and partly covered one end of the log. Two eggs were opened on 7 December to check the stage of development and both contained well developed embryos. Of the remaining eight eggs, two hatched on 19 December, two on 20 December, two on 21 December, and the last two on 26 December. The eggs ranged in size from 40.2 X 64.5 mm to 42.0 X 68.0 (\bar{x} = 41.4 X 66.6) mm. Hatchlings varied from 212 to 228 (\bar{x} = 221.5) mm LOA and 110 to 115 (\bar{x} = 111.9) mm SVL. The ones that hatched first had a fair amount of yolk attached to their umbilical opening while those that hatched 6 days later had no yolk attachment.

For details of the ecology of this species see Medem (1958, 1967).

Testudinata

Geochelone denticulata (Linnaeus)

(TCWC 1, MPM 1). A relatively large land tortoise found in closed canopy forests. Quebrada Blanco, Rio Tahuayo (1 juv.), Rio Nanay (1 ♀). First record: Iquitos (Williams, 1960). We have

examined two preserved and three live individuals of this species (one adult and two juveniles). Two were from Mishana and one from Moropon, and all were released to the wild. This species is relatively common in the region and large numbers of them are consumed by the rural populace.

According to the local natives, it is a well known fact that this species does not dig a nest hole, but simply drops its eggs singly anywhere on the forest floor. We have no records of a cyclical reproductive season.

Our local friends tell us that they have seen this species swimming in flooded forests, but we have no personal observations of them doing so.

Kinosternon scorpioides scorpioides (Linnaeus)

(TCWC 1, PS 1). A widely distributed, small, locally rare turtle. At mouth of Rio Nanay (1♂), San Juan in the outskirts of Iquitos (1 juv.). First record: this paper. This species has been found in low flooded forests, swamps and ponds. A total of six specimens have been found over an eight year period, most from the immediate vicinity of Iquitos. All have been maintained live except for two specimens. One carapace was found in a trash pile at Mishana. We later discovered that it had been eaten by a local. This species is eaten locally whenever found. Our adult specimen is the largest seen by us and measures 142 mm, midline carapace length.

Chelus fimbriatus (Schneider)

(TCWC 1, PS 1). A fairly common turtle of the Iquitos river systems. Centro Unión (1 Juv); Rio Maniti drainage (1 ad ♀). First record: Pebas (Cope, 1870). This species has been found on the bottom of shallow pools and creeks of the primary forest. The turtle is well known to all local natives and is not considered a primary food source, but is occasionally eaten. An extremely large female weighing 12.3 kg, obtained a carapace width of 316 mm, length 437 mm; midline plastron length of 392 mm (to anal cleft), total plastron length 445 mm; maximum plastron width 192 mm; total head length 138 mm, width 70 mm; total tail length 110 mm.

Platemys platycephala (Schneider)

(TCWC 3). This species has only been taken from small streams and swamps of the primary forest. Centro Unión (1♂, 2♀). First record: this paper. This species is relatively common, well known

to natives and frequently eaten as a food source. It has been found at all of our collecting sites but only a few have been preserved.

On 31 July a pair of adults were observed copulating in the shallow waters of a small forest stream at Centro Unión. Each of two adult females killed and eaten by a local family contained one well developed, oblong egg. Carapace length of the largest specimen measured 143 mm.

Phrynops gibbus (Schweigger)

(TCWC 2, MPM 1, PS 4). A small, rare aquatic turtle found in and about small forest ponds, streams and rivers, mainly in closed-canopy situations. Iquitos (2 ♀, 1 yg.), Río Itaya (1 yg.), Río Momón (2 hatchlings), Maipuco, Río Marañón (1 ♂). First record: this paper. The largest specimen seen by us is a female from Iquitos with a midline carapace length of 195 mm. A female taken on 3 June from the edge of Río Momón laid two eggs in the sand of her enclosure on 3 August and a third one on a subsequent date. The first two eggs measured 32 X 44 and 31.5 X 43.5 mm. The eggs were calcareous, somewhat rose colored, and elliptical in shape. The first one was opened after 153 days incubation and contained a vigorous embryo that lived for several days. The second egg hatched after 200 days incubation, and the third egg was apparently infertile.

Comments: The color of the head, carapace and plastron of this species is very similar to the locally abundant *P. nasutus*, but the lips are vermiculate with dark lines over a yellow ground color.

Phrynops nasutus (Schweigger)

(TCWC 2, PS 3). A locally abundant turtle usually found associated with small forest streams. Iquitos (1 ♂), Mishana (1 ♀, 1 yg), Quebrada Blanco, Río Tahuayo (1 shell). First record: Iquitos (Carrillo de Espinoza, 1970). One specimen was taken crossing a forest trail. The distribution of this form in the Iquitos region is somewhat spotty. It is common in such localities as Mishana and Moropon, but relatively rare or absent from Centro Unión and Río Aucayo. They are commonly caught by hook and line by local fishermen and eaten. As in other species, small specimens are cooked whole (shell and all).

Females attain a greater size than males, the carapace length of the largest female examined measured 323 mm, while males usually average less than 250 mm.

The head color is variable, from light olive to almost black in old adults; lips and tympanum yellow; usually a pair of black stripes on top of head (obscure in old adults) that curve inward posteriorly in juveniles and adult females, usually absent in adult males; plastron may be completely yellow to completely black.

Podocnemis expansa (Schweigger)

A locally rare turtle associated with the larger rivers of the area (Rio Amazonas, Rio Napo). First record: Iquitos (Carrillo de Espinoza, 1970). We have seen no specimens in the wild of this species in the Iquitos region. In past years, eggs and adults were sold seasonally in the local markets. In most cases, these had been brought from the Rio Marañon and Rio Ucayali. We believe this species to be extirpated from the Iquitos region because of its large size and delicate flesh.

We have little information on reproduction. *Podocnemis expansa* utilizes only the largest and highest sandy beaches of the major rivers for egg laying, which takes place during low water season (Aug.-Oct. in Iquitos region). For example, none of the six beaches in the vicinity of Iquitos on the Rio Amazonas periodically checked by one of us (Soini) and used regularly by *P. sextuberculata* and *P. unifilis*, is utilized by *P. expansa*.

Podocnemis sextuberculata Cornalia

(PS 3). A locally abundant river turtle associated with the major river systems of the region. Iquitos (3). First record: Iquitos (Carrillo de Espinoza, 1970). Although we have no preserved specimens of this species, the species is locally abundant and both its meat and eggs are consumed extensively during the egg-laying and hatching months. In the Iquitos area, *P. sextuberculata* lays its eggs on sand beaches of islands and river banks from July through September. We have observed hatchlings in November. Egg clutches are reported to vary from 11-21 eggs.

Podocnemis unifilis Troschel

(TCWC 2, PS 1). A rather abundant aquatic turtle found in rivers, lakes and ponds. Isla de Iquitos, Rio Amazonas (1 ♀); Rio Marañon, a few miles above Nauta (2 ♀). First record: this paper. Eggs and meat of this species are consumed extensively in the region during egg laying and hatching season. One of four females

captured at the edge of a beach near Nauta on 1 July by natives, laid two eggs at night on 2 August, and another egg on 3 August. When killed and eaten, the female contained an additional 35 eggs ready to be deposited. Besides the 38 mature eggs, her ovaries contained 25 ovarian follicles approximately 2 mm in diameter. Nineteen of the eggs were measured and ranged from 29.5-31.2 (\bar{x} = 30.2 mm) in width and 38.2-43.5 (\bar{x} = 41.3 mm) in length. The carapace of the female measured 290 X 398 mm.

Podocnemis unifilis emigrate from their "home" lakes and ponds to the rivers to lay eggs on the sand beaches from July through September. This seasonal movement frequently involves land crossings of several hundred meters. The eggs may occasionally be laid on the mud or mixed mud-sand banks of the "home" pond. Medem (1964) reported an incubation period of 2.5 to 3 months in Colombian populations of *P. unifilis*.

Serpentes

Typhlops sp.

(TCWC 3). A moderate sized *Typhlops* (LOA to 251 mm), found in cultivated fields, forest edge situations and in young secondary forests.

Iquitos (1), Mishana (2). First record: this paper. This form has been taken from the soil of manioc fields and crawling along the roadside near Iquitos.

All three specimens have white snouts, no tail ring, 11 dorsal scale rows of dark brown, pigmented scales and a dirty yellow venter. Dorsal scale rows 19-18-14 or 18-16-14; dorsals, from prefrontal scale to tail spine vary from 229-248 (\bar{x} = 236.3); subcaudals vary from 7-10 (\bar{x} = 8.3).

Typhlops brongersmianus Vanzolini

(TCWC 6). A moderate sized *Typhlops* (LOA to 232 mm) taken in forest edge situations, cultivated fields and in open secondary forests.

Iquitos (4), Indiana (2). First record: this paper. One female taken in August (LOA 232 mm) contained 9 mature eggs. Two specimens of this species were removed from the stomach of the coral snake, *Micrurus lemniscatus*.

The dorsum is dirty yellow with 11 to 13 dark brown pigmented rows, nine of which form distinct lines extending the entire length of the body; venter dirty yellow; snout yellow, streaked with dark

brown along the edge of each scale; no tail ring; no dorsal scale row reduction in our series (20-20-20); dorsals, from prefrontal to tail spine, vary from 227-238 (\bar{x} = 231.8), subcaudals 11-13 (\bar{x} = 11.8).

The identification of this form is tentative, pending a revision of the South American mainland forms of the genus by J. R. Dixon and F. S. Hendricks.

Typhlops reticulatus (Linnaeus)

(TCWC 9). A large member of the genus (LOA to 522 mm) that occurs in cultivated fields, open secondary growths and along the primary forest edge.

Iquitos (2), Maniti (1), Mishana (4), Moropon (2). First record: Napo and Marañon (Cope, 1868), Iquitos (Cope, 1870). This species has been taken in the soils of manioc fields, along roadsides and dead on roads. One specimen was found crawling along a roadside at 2000 hours.

One adult female (LOA 464 mm) contained 30 ant eggs that averaged 6 X 15 mm. No reproductive data was available for this form.

This species has a white snout and tail ring; dorsal coloration usually slate or brownish black with 9 dorsal rows heavily pigmented; venter usually clear yellow. Dorsal scale rows with reduction (20-20-18); dorsals, from prefrontal scale to tail spine vary from 248-294 (\bar{x} = 272.2); subcaudals 8-11 (\bar{x} = 9.8).

Anilius scytale scytale (Linnaeus)

(TCWC 17). A semi-fossorial snake found in primary, young and old secondary forests, cultivated fields and along stream banks. Centro Unión (2 ♂), Iquitos (7 ♂, 1 ♀), Mishana (1 ♂), Moropon (1 ♂, 2 ♀), Rio Corrientes, tributary of Rio Pastaza (1 ♀), Santa Maria (1 ♂), Yanamono (1 ♂). First record: Pebas (Cope, 1870). Additional record: Marañon (Cope, 1875).

This species is frequently encountered under debris, logs, and occasionally crossing forest trails. The majority of our specimens were taken near water, and one was found in a water tank.

One adult female (1,184 mm LOA) gave birth to 6 young on 28 February 1972. A smaller female gave birth to 4 young in January 1966, and a very young specimen was taken from the vicinity of Iquitos in early March.

Taxonomic data are: scale rows 19 (21-21-17) 19, smooth, without apical pits; anal plate entire; ventrals of males vary from 228-259 (\bar{x} = 241.2), females 233-266 (\bar{x} = 256.2); caudals of

males vary from 9-12 (\bar{x} = 10.9), females 9-12 (\bar{x} = 10.6); preoculars absent, postoculars 1-1; loreal absent; temporals 2+2; supralabials 6-6; infralabials 7-7; supralabials entering orbit 3+4; prefrontal bordering orbit; maxillary teeth 9, invariable; LOA/tail ratios of males .033-.042 (\bar{x} = .037), females .026-.039 (\bar{x} = .031); maximum LOA of males 810 mm, females 1,184 mm.

Black bands of body are typically broken dorsally, with more bands occurring on the right side than the left, *e.g.*; ♂♂, 58.3 *vs.* 56.2; ♀♀, 58.6 *vs.* 56.0, respectively. Specimens from the immediate vicinity of Iquitos and Yanamono have black bands that are slightly wider than the red interspaces and the scales within the red interspaces are either edged with black or obscured by black pigment. Specimens examined from areas west, north and south of Iquitos have black bands more narrow than the red interspaces. However, the black pattern of our specimens does not approach that of *A. scytale phelpsorum* (see Roze, 1958).

Boa constrictor constrictor Linnaeus

(TCWC 7). One of the largest of the Amazonian snakes found in secondary and primary forests. Iquitos (1♂, 3♀), Moropon (2♂), Mishana (1♂). First record: Pebas (Cope, 1885); additional records: Iquitos (Carrillo de Espinoza, 1966). This species has been found on the basal and stilt roots of large trees and on fallen logs and occasionally on the forest floor. Four adult females gave birth to 24, 28, 20 and 6 young on 7 Jan., 18 Jan., 22 Feb., and 18 Nov., respectively. A common snake of the area, several hundred live individuals and raw skins were shipped annually from Iquitos to pet dealers and tanneries around the world.

Taxonomic data are: midbody scale rows 90-95 (\bar{x} = 92.2); ventrals of males 231-245 (\bar{x} = 239.7), females 238-250 (\bar{x} = 244.3); caudals of males 56-58 (\bar{x} = 56.7), females 43-45 (\bar{x} = 44.0); supralabials vary from 20 to 22, infralabials 24 to 27; body blotches vary from 14-21 (\bar{x} = 17.0), tail blotches 4-6 (\bar{x} = 4.8); maximum LOA 672 mm (all juveniles and young); average LOA/tail ratio for males .119, females .114.

Corallus caninus (Linnaeus)

(TCWC 2). A small arboreal boid restricted to the primary forests. Iquitos (1♀), Santa Maria (1♀). First record: Iquitos (Carrillo de Espinoza, 1966).

Our specimens were taken among the foliage of trees and shrubs during the day. No food data are available for our two recently born specimens taken in August. Fitch (1970) indicated that a large female which had died in captivity contained 10 seemingly full term fetuses on 14 November.

The snake is locally uncommon and we have seen one adult specimen in the wild (Mishana). However, a few live specimens were shipped annually from Iquitos to pet dealers in past years.

Taxonomic data are: midbody scale rows 72, 74; 2 preoculars, 3 postoculars; 14 supralabials, 14 infralabials; 11, 15 scales between orbits; 4 loreals; anal entire; ventrals 194, 209, caudals 66, 73.

Both of our specimens were yellowish orange to brick red in life, with white dorsal blotches; adults are leaf green with white blotches.

Corallus enydris enydris (Linnaeus)

(TCWC 18). An arboreal small boid found in young and old secondary forests, and in primary forest. Centro Unión (6♂, 2♀), Iquitos (1 ♂, 1 ♀, 1 yg.), Indiana (1 ♀), Mishana (1 ♂), Moropon (4♂, 2♀), Yanamono (2♂, 1♀), Yanayacu (1♀). First record: Napo or upper Marañon (Cope, 1868); additional records: Iquitos (Cope, 1875).

One specimen of our series was found dead on a road near Iquitos, the majority of the others were taken from branches of shrubs and small trees along stream banks and forest edge situations. Stomach contents of several individuals reveals that they feed largely on bats. One stomach contained a recently swallowed specimen of *Myotis albescens*. Bird and rodent remains are occasionally present in some stomachs.

Taxonomic data are: midbody scale rows vary from 48-62 (\bar{x} = 53.5); supralabials 13 to 15, infralabials 17 to 20; infraoculars 3 to 4; loreals 2 to 3; ventrals of males vary from 276-283 (\bar{x} = 279.4), ventrals of females 278-287 (\bar{x} = 282.7); caudals of males vary from 111-127 (\bar{x} = 119.4), caudals of females 112-123 (\bar{x} = 116.6); nasal scales in contact in 10, no contact in 8; LOA/tail ratios for males varies from .192-.217 (\bar{x} = .201), females .198-.212 (\bar{x} = .201); maximum LOA 1,700 mm female; 1,643 mm male.

Adults are highly variable in color but the venter is usually gray and the dorsum has somewhat rounded brown, yellow edged blotches; young and juveniles similar to adults except the ventrals are orange red.

Epicrates cenchria gaigei Stull

(TCWC 4). A small boid occurring in young and old second forests, cultivated fields and in primary forests. Iquitos (1 ♂), Santa Maria (1♂, 2♀). First record: Iquitos (Carrillo de Espinosa, 1966).

One specimen came from inside of a house, one in a back yard, one in an open field and one from the primary forest floor. No reproductive or food data are available for our series.

Taxonomic data are: midbody scale rows vary from 43-48 (\bar{x} = 45.8); preoculars 2-2; postoculars 4 to 5; supralabials entering orbit 6+7 (1), 7+8 (3); loreals 4-4; scales between orbits 5; supralabials vary from 12 to 13, infralabials from 15 to 17; ventrals of males vary from 253-279 (\bar{x} = 266.3), female 270; caudals of males vary from 59-63 (\bar{x} = 61.0); female 57; LOA/tail ratios of males vary from .117-.128 (\bar{x} = .123), female .113; light colored body blotches vary from 39-51 (\bar{x} = 45.8), tail blotches 8-11 (\bar{x} = 9.8); maximum LOA of males 875 mm, female 575 mm. For details of color see Stull (1938).

Our series may represent intermediates between *E. cenchria gaigei* and *E. c. cenchria*. The number of midbody scale rows are intermediate and the number of ventrals, caudals and LOA/tail ratios overlap those of the nominate race. However, the lateral ocellate spots are not surrounded by rings of lighter color (*c. cenchria* character). The latter may be the only useful character in separating the subspecies.

Eunectes murinus murinus (Linnaeus)

(TCWC 1). The largest of the snakes and common in and around flooded forests, large and small streams, and bodies of water where aquatic vegetation is dense. Santa Maria (1 ♂ juv.). First record: Amazon (Cope 1875). Additional records: Quistococha, near Iquitos; Iquitos; Rio Napo region (Carrillo de Espinoza, 1966).

Our juvenile specimen was taken from a small stream. One recently caught female gave birth to 26 young in Iquitos on 1 March and another female had 22 young five days later. One hatchling was observed near Iquitos in February. Taxonomic data are: midbody scale rows 64; ventrals 248; caudals 67; preoculars 1-1; postoculars 3-3; supralabials 16-17; infralabials 18-19; LOA/tail ratio .151.

Ground color bluish gray, with alternating series of dark olive to black rounded spots on dorsum and tail; throat yellow, venter yellowish anteriorly, fading to pinkish gray posteriorly, with a series of reticulated black marks scattered throughout, more dense on subcaudals; secondary series of irregular black marks below primary body spots, alternating with them or directly below; orange red stripe, bordered above and below with narrow black line, from eye to angle of jaw; top of head orange olive, outlined by black stripe above posterior eye stripe, forming the apex of a triangle on the snout.

Fitch (1970:118) summarizes the known reproduction of this species. Live anacondas and raw skins were shipped in considerable numbers from Iquitos to animal dealers and tanneries around the world. Many specimens have been observed over the past 8 years but the large size of most individuals makes it impossible to maintain an adequate preserved series.

Atractus badius (Boie)

(TCWC 16). All specimens were taken from cultivated fields. Iquitos (1♂), Mishana (8♂, 6♀), Moropon (1♂). First record: Pebas (Cope, 1870, as *A. microrhynchus*). All but one of our specimens were taken from slash and burn farming practices, as the men were clearing the fields. One specimen was found dead on a road near Iquitos.

Taxonomic data are: scale rows 17-17-17, smooth, no apical pits, anal plate entire; ventrals plus caudals vary from 171-186 (\bar{x} = 178.7), ventrals of males vary from 144-152 (\bar{x} = 147.6), females 159-162 (\bar{x} = 160.2); caudals of males vary from 25-31 (\bar{x} = 28.1), females 18-26 (\bar{x} = 23.2); postoculars 1-1 (1), 2-2 (15); preoculars 0-0 (15), 0-1 (1); loreal 1-1; supralabials 7-7 (15), 8-8 (1); infralabials 7-7 (15), 8-8 (1); supralabials entering orbit 3+4; temporals 1+2; maxillary teeth 5-6 (\bar{x} = 5.53); LOA/tail ratios of males .107-.126 (\bar{x} = .116), females .085-.101 (\bar{x} = .092); maximum LOA of males 342 mm, females 413 mm.

Ground color light brown to slate brown with four irregular rows of small black spots (48-60 in paravertebral row) from nape to tail; venter dirty yellow with few to many black marks; juveniles usually with few black marks, adults with many, showing increasing amount of melanism as animals become mature, old animals have an almost completely blackened venter; an incomplete black nuchal collar usually present, but may be complete in a few specimens; dark nuchal spots (or collar) preceded by dirty yellow to yellowish brown band across rear of head in about 50% of specimens examined.

Cope's (1870:156) reference to *A. microrhynchus* from Pebas is probably referable to *A. badius*. His type description (1868: 102) is identical to about 50% of our specimens. Savage (1960: 53) indicates that the type is lost and that the data given for the type locality is probably in error. We suspect that the Orton specimen probably came from Pebas because the majority of his specimens were taken from Peru and there is evidence of other erroneous locality data associated with Cope's description of Orton material.

We suggest that *Atractus microrhynchus* (Cope) be placed in the synonymy of *A. badius* (Boie).

Atractus collaris collaris Peracca

(TCWC 10). This species has been found in secondary forests and cultivated fields. Centro Unión (1♂, 2♀), Mishana (1♀), Moropon (2♂, 1♀), Santa Maria (1♂, 1♀), Yanamono (1♂). First record: Pebas (Savage, 1955). This species was taken during clearing operations of slash and burn farming. One specimen was taken from beneath rubbish in a yard. Hatchlings were taken in the month of September and one adult specimen was removed from the stomach of a coral snake (*M. spixii*).

Taxonomic data are: scale rows 17-17-17, smooth, no apical pits; anal plate entire; ventrals plus caudals vary from 176-212 (\bar{x} = 190.9); ventrals of males vary from 157-178 (\bar{x} = 162.5), females 163-182 (\bar{x} = 171.4); caudals of males vary from 26-34 (\bar{x} = 28.8), females 19-26 (\bar{x} = 21.8); preoculars 0-0; postoculars 2-2; supralabials 7-7; infralabials 7-7; temporals 1+2; supralabials entering orbit 3+4; maxillary teeth 5-6 (\bar{x} = 5.8); LOA/tail ratios of males vary from .112-.118 (\bar{x} = .115), females .072-.085 (\bar{x} = .079); maximum LOA of males 237 mm, females 265 mm.

Ground color dark brown with paired small dorsal spots (58-72 in a paravertebral row) extending from nape to tail; spots are generally located on all or parts of scale rows 5, 6 and 7; in addition to body spots, there are six brownish black stripes present in most specimens situated as follows: tips of ventrals and lower one-third of first scale row chocolate brown, bordered above by white stripe on remainder of first scale row except dorsal tips of scales; tip of first scale row edged with black; center of each scale of second scale row with white spot; chocolate brown line on upper one-third of second scale row and lower one-half of third scale row. Two specimens from Santa Maria have seven stripes, the seventh being a median stripe on the ninth scale row. A broken, yellowish brown nuchal collar begins on parietals and passes ventrally onto the throat in all specimens examined; venter whitish anteriorly, becoming increasingly reddish towards the tail.

Comments: Our specimens from Santa Maria have the basic color pattern attributed to the Ecuadorian species, *A. gaigae* (7 dark stripes), while the number of ventrals plus caudals (191-212) are intermediate between *A. collaris* and *A. gaigae* Savage. This evidence confirms Savage's (1960:35) contention that additional material would probably show that *A. gaigae* is conspecific with *A. collaris*. We believe this to be the case and relegate *A. gaigae* as a subspecies of *A. collaris* Peracca. If *A. bocourti* is proven to be conspecific with *A. collaris*, as Savage (1960:35) suggests, then the name *bocourti* will become the specific epithet by priority.

Atractus elaps (Gunther)

(TCWC 9). A relatively large species of *Atractus*, found in primary and secondary forests, cultivated fields and orchards. Iquitos (1 ♀), Moropon (2 ♂, 5 ♀), Yanamono (1 ♂). First record: Pebas (Cope, 1885). We have taken this species from leaf litter of the closed canopy forest, beneath fallen debris in cultivated fields, and one specimen was found swimming in a forest stream.

Taxonomic data are: scale rows 15-15-15, smooth, no apical pits; anal plate entire; ventrals plus caudals vary from 184-190 (\bar{x} = 187.7); ventrals of males vary from 153-154 (\bar{x} = 153.7), females 158-166 (\bar{x} = 162.7); caudals of males vary from 34-35 (\bar{x} = 34.7), females 23-26 (\bar{x} = 24.7); preoculars 0-0; postoculars 1-1; loreals 0-1 (1, fused with postnasal), 1-1 (8); supralabials 6-6; infralabials 7-7; supralabials entering orbit 3+4; temporals 1+2; maxillary teeth 7-8 (\bar{x} = 7.33); LOA/tail ratios of males, .134-.145 (\bar{x} = .141), females, .089-.100 (\bar{x} = .092); maximum LOA of males 588 mm, females 482 mm.

All three color pattern types discussed by Savage (1960) occur at one locality (Moropon), with the black bands appearing in single, double, triple, or quadruple numbers; red bands show considerable ontogenetic change, becoming increasingly obscured by black pigment as individuals reach sexual maturity. The majority of our specimens have the black bands arranged in "twos", but in any single specimen the black bands may begin as single bands at the nape, doubling on the anterior one-third of the body and tripling on the posterior one-third of the body; one specimen had the black bands arranged as follows: 2-4-4-3-2, another 2-2-2-2-2-2 and another 1-1-1-1-1.

A study of the geographic variation of this species was recently completed (Dixon, Thomas and Greene, 1976).

Atractus latifrons (Gunther)

(TCWC 15). A relatively large species of *Atractus* found in most terrestrial habitats associated with the upper Amazon Basin. Centro Unión (2 ♂, 1 ♀), Mishana (2 ♂, 8 ♀), Moropon (1 ♂, 1 ♀). First record: Pebas (Boulenger, 1894:303). All of our specimens were taken from recently cleared fields and orchards, and one was found in a small clearing along a river bank. One hatchling of this species was taken on 25 August.

Taxonomic data are: scale rows 17-17-17, smooth, no apical pits; anal plate entire; ventrals plus caudals vary from 176-188 (\bar{x} = 180.8); ventrals of males vary from 141-149 (\bar{x} = 145.5), females 147-158 (\bar{x} = 152.5); caudals of males vary from 28-37 (\bar{x} = 33.4), females 23-30 (\bar{x} = 26.8); preoculars 0-0; postoculars 1-1; loreal

1-1; supralabials 5-5 (1), 6-6 (14); infralabials 7-7 (11), 7-8 (4); supralabials entering orbit 2+3 (1), 3+4 (14); temporals 1+2; maxillary teeth 4-6 (\bar{x} = 5.0); LOA/tail ratios of males .117-.143 (\bar{x} = .134), females .092-.118 (\bar{x} = .108); maximum LOA of males 446 mm, females 586 mm.

Color pattern of black, yellow and red rings generally complete around the body, with black bands varying from 10 to 26; 11 of 15 specimens had the black rings split by narrow yellow rings about one scale row long; frequently, the yellow ring was incomplete dorsally; three specimens lacked any trace of a yellow ring except near the tail, and one specimen was almost melanistic with all rings obscured by black pigment.

Atractus major Boulenger

(TCWC 1). A relatively large *Atractus* found in cultivated fields. Centro Unión (1 ♀). First record: this paper. This species is relatively common in Ecuador (Savage, 1960) but apparently rare in Peru.

Taxonomic data are: scale rows 17-17-17, smooth, no apical pits, anal plate entire; ventrals 171; caudals incomplete; preoculars 0-0; postoculars 2-2; loreal 1-1; supralabials 7-7; infralabials 7-7; supralabials entering orbit 3+4; temporals 1+1; maxillary teeth 6; SVL = 470 mm.

Color pattern typical of the "A" type described by Savage (1960:48). Body blotches number 28, tannish brown and outlined with yellowish tan; venter minutely dotted with blackish brown, density of dots progressively greater towards the tail.

Atractus poeppigi (Jan)

(TCWC 1). A moderately sized *Atractus* found in forest edge situations. Moropon (1 ♂). First record: Iquitos, Moropon (Dixon, Thomas and Greene, 1976). Our specimen was taken beneath a pile of logs at the forest edge.

Taxonomic data are: scale rows 15-15-15, smooth, no apical pits; anal plate entire; ventrals 139; caudals 26; preoculars 0-0; postoculars 1-1; supralabials 6-6; infralabials 7-7; supralabials entering orbit 3+4; temporals 0+1; maxillary teeth 5; LOA/tail ratio .121; LOA 353 mm.

Dorsal color brownish black, with complete fusion of black bands dorsally; red interspaces present laterally and red areas heavily suffused with black pigment; red and black rings more distinct ventrally, with a few black rings failing to meet along the midventral line; top of head brownish black; red area surrounding nasal scale.

The status of this species and its relationship to *Atractus elaps* is discussed by Dixon, Thomas and Greene (1976).

Atractus sp. A.

(TCWC 16, USNM 2). A small *Atractus* found in a variety of habitats. Centro Unión (1 ♂, 1 ♀), Mishana (3 ♂, 10 ♀), Moropon (2 ♂, 1 ♀). Our specimens were taken from cultivated fields, orchards, overgrown abandoned fields and in secondary forests. Hatchlings of this species were taken on 21 April.

Considering the paucity of information concerning the currently recognized 75 ± species of the genus, we feel a conservative attitude is justified and have not attempted to formally describe the following three species (sp. A., B. and C.) that may represent new taxa.

Taxonomic data are: scale rows 17-17-17, smooth, no apical pits; anal plate entire; ventrals plus caudals 185-199 (\bar{x} = 191.4); ventrals of males vary from 144-153 (\bar{x} = 148.7), females 149-158 (\bar{x} = 151.9); caudals of males vary from 36-46 (\bar{x} = 42.0), females 36-42 (\bar{x} = 39.0); preoculars 0-0 (16), 0-1 (1), 1-1 (1); postoculars 1-1; loreal 1-1; supralabials 7-7 (16), 7-8 (2); infralabials 6-6 (1); 7-7 (12), 8-8 (5); supralabials entering orbit 3+4 (16), 3+4/4+5 (2); temporals 1+2; maxillary teeth 7, invariable; LOA/tail ratios of males .139-.165 (\bar{x} = .156), females .128-.151 (\bar{x} = .138); maximum LOA of males 395 mm, females 425 mm.

Ground color of dorsum dull red to reddish brown with 5 to 48 narrow crossbands of darker reddish brown that may form a series of spots anywhere on the dorsum; top of head uniform reddish brown, slightly darker than ground color; venter whitish or pale yellow; underside of tail pink; with a zig-zag median reddish line from anus to tip of tail.

Atractus sp. B.

(TCWC 2). This species has been taken from cultivated fields of manioc. Moropon (1 ♀), Paraiso (1 ♂).

Taxonomic data are: scale rows 17-17-17, smooth, no apical pits; anal plate entire; ventrals of male 153, female 161; caudals of male 37, female 30; preoculars 0-0, 0-1; postoculars 2-2; loreal 1-1; supralabials 7-8; infralabials 8-8; supralabials entering orbit 3+4/4+5; temporals 1+2; maxillary teeth 6, 7; LOA/tail ratio of male .146, female .102; LOA of male 342 mm, female 167 mm.

Ground color dark brown, dorsum with 26-29 large, dark reddish brown blotches 4 to 6 scale rows in length, separated by yellowish brown interspaces about 1 to 2 scale rows in length;

blotches reach edge of ventrals and tend to be loosely connected along the 1st and 2nd scale rows; venter dirty white with scattered dark flecks in juvenile female; heavily mottled with chocolate brown spots in adult male, progressively darker towards tail; ventral surface of tail densely marked with chocolate brown; chin with a few chocolate brown marks; top of head from eyes forward blackish brown; posterior part of head and two nuchal rows of scales with a broad light yellow collar in female, obscured with flecks of brown in male.

This species may be related to *A. badius*. The color patterns are very similar and undoubtedly there are specimens of this species currently mixed with *A. badius* on museum shelves. However, this species differs from *badius* in the number of caudals, maxillary teeth and in the LOA/tail ratios (see *A. badius*).

Atractus sp. C.

(TCWC 3). Our series was taken from cultivated fields of manioc. Centro Unión (1 ♀), Mishana (2 ♂).

Taxonomic data are: scale rows 17-17-17, smooth, no apical pits; anal plates entire; ventrals plus caudals 194-204 (\bar{x} = 200.0); ventrals of males 169, 170, female 175; caudals of males 32, 35, female 19; preoculars 0-0 (1), 0-1 (2); postoculars 2-2; loreal 1-1; supralabials 7-7; infralabials 7-7 (2), 7-8 (1); supralabials entering orbit 3+4; temporals 1+2; maxillary teeth 5(2); 6(1); LOA/tail ratios of males .155, .117, female .076; maximum LOA of males 300 mm, female 277 mm.

Ground color dark brown; dorsum with median chocolate brown line one scale row wide, extending from parietals to above vent, becoming wider and more obscure on tail; scales of 1st scale row with whitish centers, forming a dashed line to tail (female lacks definitive dashed line); body color uniformly dark above and below dashed line, many of the lateral body scales with a freckled appearance; head dark brown with an incomplete yellowish brown collar in one male, reduced to two spots in second male and complete in female; whitish spot below and behind eye (on 5th supralabial); 1st, 2nd and 3rd supralabials flecked with white; chin with black mottling; venter cream with outer edges of ventrals chocolate brown; caudals uniformly chocolate brown.

This species resembles both *A. resplendens* and *A. nigrocaudus* in color pattern, but differs from the latter in having a high number of ventrals plus caudals (174-177 in *nigrocaudus*); from the former in low number of maxillary teeth (7 in *resplendens*) and the presence of a median dark line rather than being unicolored.

Chironius carinatus (Linnaeus)

(TCWC 28). This species occurs in all types of forests, including flooded conditions, and along forest edges. Centro Unión (1 ♂, 4 ♀), Iquitos (4 ♂, 5 ♀), Mishana (2 ♂, 2 ♀), Moropon (4 ♂, 5 ♀), Paraiso (1 ♀). First record: Napo or Marañon (Cope, 1868). Additional records: Iquitos (Cope, 1870). Our specimens were taken actively foraging on the ground, in trees and shrubs and swimming small streams and rivers. One specimen was taken while it slept, coiled on the branch of a small tree about 3 meters above the floor of a flooded forest. Stomachs contained amphibians and identifiable remains were *Bolitoglossa altamazonica*, *Hyla garbei*, *Hyla lanciformis*, and *Hyla* sp. One hatchling of *C. carinatus* was taken in April.

Taxonomic data are: scale rows 12-12-8 (28), paravertebral rows keeled, one apical pit present; anal plate divided; ventrals of males vary from 137-143 (\bar{x} = 140.9), females 139-147 (\bar{x} = 142.8); caudals of males vary from 119-136 (\bar{x} = 127.7), females 122-131 (\bar{x} = 126.9); preoculars 1-1 (27), 1-2 (1); postoculars 2-2; loreal 1-1; temporals 1 + 1 (1), 1 + 2 (27); supralabials 8-8 (1), 8-9 (1), 9-9 (24), 9-10 (2); infralabials 10-10 (2), 10-11 (5), 11-11 (10), 11-12 (7), 12-12 (4); supralabials entering orbit 4 + 5 (1), 4+5+6 (15), 4+5/4+5+6 (2), 5+6 (8), 5+6/5+6+7 (1), 4+5+6/5+6+7 (1); maxillary teeth vary from 26-31 (\bar{x} = 28.1); LOA/tail ratios for males .328-.376 (\bar{x} = .355), females .347-.374 (\bar{x} = .359); maximum LOA of males 1,359 mm, females 1,196 mm.

Dorsum somewhat uniform in color in adults, usually some shade of olive green to dark green, with venter yellow to mustard yellow; juveniles and hatchlings usually brownish to brownish gray with many obscure olive brown to dark brown crossbands; bands usually edged with dirty white to tan ground color; venter dusky to white.

Chironius fuscus (Linnaeus)

(TCWC 54). A common species found in all habitats of the Iquitos region. Centro Unión (4 ♂, 3 ♀), Iquitos (3 ♂, 4 ♀), Maniti (1 ♀), Mishana (11 ♂, 7 ♀), Moropon (10 ♂, 5 ♀), Paraiso (1 ♀), Santa Maria (1 ♀), Yanamono (1 ♂, 3 ♀). First record: Iquitos (Cope, 1875). Similar to *C. carinatus* in diurnal activity patterns. One specimen was found sleeping, coiled on a horizontal branch of a small tree, two to three meters above the ground. Most stomachs contained unidentifiable remains of frogs and lizards. Of the stomach contents that could be identified, there were several species of *Hyla*, *Eleutherodactylus*, and what appeared to be the remains of a lizard, genus *Kentropyx*. One specimen was captured while it chased a *Leptodactylus* sp. across an open grassy field in the early afternoon.

One adult female contained eight well developed oviducal eggs on 30 April, and another female with seven eggs in June. Hatchlings were found in April, July, August, and November.

Taxonomic data are: scale rows 10-10-8 (♂♂), 10-10-10 (♀♀), two paravertebral rows weakly keeled, one to two apical pits present; anal plate entire; ventrals of males vary from 146-155 (\bar{x} = 150.8), females 140-153 (\bar{x} = 146.5); caudals of males vary from 115-140 (\bar{x} = 125.7), females 122-140 (\bar{x} = 129.1); preoculars 1-1; postoculars 2-2 (52), 2-3 (2); temporals 1+1 (54); supralabials 8-9 (3), 9-9 (49), 9-10 (2); infralabials 9-9 (2), 9-10 (4), 10-10 (36), 10-11 (6), 11-11 (4), 11-12 (1); supralabials entering orbit 4+5+6 (50), 4+5/4+5+6 (1), 4+5+6/5+6+7 (1); maxillary teeth 41-51 (\bar{x} = 44.7); LOA/tail ratios of males .338-.378 (\bar{x} = .353), females .360-.395 (\bar{x} = .376); maximum LOA of males 1,385 mm, females 1,218 mm.

Color pattern highly variable; juveniles usually leaf green dorsally with a series of obscure darker crossbands; venter yellowish with brownish suffusion; subadults may be bright green to olive green with yellowish venters; adults may be green, olive green or brownish with head and neck scales edged with dark to bright red suffusion, venter bright yellow with reddish spots along the median line from midbody to tail.

Chironius multiventris Schmidt and Walker

(TCWC 7, USNM 1). A relatively large species restricted to primary and old secondary forests. Centro Unión (2 ♂), Iquitos (1 ♂), Moropon (1 ♂, 4 ♀). First record: this paper. Stomachs contained the frog genera *Hyla* and *Eleutherodactylus*.

Taxonomic data are: scale rows 12-12-8 (♂♂), 12-12-10 (♀♀) paravertebral rows keeled, apical pits present; anal plate divided; ventrals of males varied from 186-191 (\bar{x} = 188.7), females 185-189 (\bar{x} = 187.5); caudals of males varied from 182-200 (\bar{x} = 191.3), females 184-192 (\bar{x} = 187.0); preoculars 1-1; postoculars 2-2 (6), 2-3 (1), 3-3 (1); temporals 1+1 (1), 1+2 (5), 2+2 (1); loreal 1-1; supralabials 9-9 (6), 9-10 (1), 10-10 (1); infralabials 9-9 (1), 9-10 (1), 10-10 (4), 10-11 (1), 11-11 (1); supralabials entering orbit 4+5+6 (5), 5+6+7 (1), 5+6/4+5+6 (1), 4+5+6/5+6+7 (1); maxillary teeth 33-38 (\bar{x} = 36.3); LOA/tail ratios of males .371 (2), females .382 (3); maximum LOA of males, 2,270 mm, females 1,824 mm.

Dorsum usually greenish, head olive green with side of head dirty yellow and some indication of a yellowish nuchal collar; dorsum with yellowish brown stripe between paravertebrals outlined with brownish black, often obscured by invasion of brownish black pigment from dark borders; venter dirty white with or without a dark median area on posterior one-third of venter; a ventrolateral, zig-zag brownish black line along tail; dark body color frequently extending onto ventrals and caudals.

A very similar species, *C. cochraeae* Hoge and Romano (1969), from Para, Brazil and Surinam, is distinguished from *multiventris* only by the absence of the light vertebral stripe. As some of our specimens have the light median stripe obscured by dark pigment, we suspect that the two species may be conspecific. Final analysis of the relationships of these two species awaits the revision of the genus by John Wiest.

Chironius cf. pyrrhopogon (Wied)

(TCWC 3). A species occurring in both primary and secondary forests. Iquitos (2 ♂), Mishana (1 ♂). First record: this paper. Natural history information is lacking for this species.

Taxonomic data are: (all males) scale rows 12-12-8, paravertebral rows weakly keeled, one apical pit present; anal plate entire; ventrals 132-142 (\bar{x} = 137.0); caudals 134-148 (\bar{x} = 141.3); preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+1 (2), 1+2 (1); supralabials 9-9; infralabials 9-10 (1), 11-11 (2); supralabials entering orbit 4+5+6 (1), 5+6 (1), 4+5+6/5+6 (1); maxillary teeth 28-30 (\bar{x} = 28.7); LOA/tail ratios .380-.401 (\bar{x} = .391); maximum LOA 862 mm.

Dorsum brownish with a light yellow median stripe present to tip of tail in young specimen, fading on distal one-fourth of body in adults; head brownish; supralabials brown, infralabials yellowish; venter dirty yellow.

The nearest record for this species to Peru is Bailey's (1955) report of the species from the western Mato Grosso, Brazil.

Chironius scurrulus (Wagler)

(TCWC 15). A large species of *Chironius* found in both primary and secondary forests. Centro Unión (1 ♂, 1 ♀), Iquitos (2 ♂, 5 ♀), Mishana (1 ♂, 1 ♀), Moropon (4 ♀). First record: this paper. Our specimens were taken from shrubs and ground in about equal numbers. One adult female taken on 20 April contained enlarged ovarian follicles. Stomachs contained unidentifiable remains of amphibians.

Taxonomic data are: scale rows 10-12-10 (1 ♀), 10-10-8 (♂♂), 10-10-10 (♀♀), smooth, one apical pit present; anal plate entire; ventrals of males vary from 155-159 (\bar{x} = 156.3), females 152-165 (\bar{x} = 157.7); caudals of males vary from 115-129 (\bar{x} = 119.0), females 109-115 (\bar{x} = 112.0); preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+1; supralabials 8-9 (1), 9-9 (11), 9-10 (2); infralabials 10-11 (1), 10-12 (1); 11-11 (6), 11-12 (3), 12-12 (2);

supralabials entering orbit 4+5+6 (6), 5+6/4+5+6 (2), 5+6 (4), 4+5+6/5+6+7 (2); maxillary teeth 33-38 (\bar{x} = 35.5); LOA/tail ratios of males .317-.352 (\bar{x} = .329), females .312-.324 (\bar{x} = .319); maximum LOA of males 1,704 mm, females 1,802 mm.

Dorsum reddish brown to brown in adults, with or without single black or blue scales or a suffusion of the same color scattered over dorsum; young and juveniles leaf green, tan or yellowish tan with a brown, dark brown or dark green head; venter yellowish tan.

One adult female from Moropon has the dorsal scale rows arranged in 10-12-10 rows and the dorsal color appears gray in preservative. Otherwise, the specimen appears to belong to *C. scurrulus*. *Chironius laevicollis* (Weid) has a 10-12-10 arrangement of the dorsal scale rows and has a different dorsal coloration; it is quite possible that this specimen belongs to the latter species.

Clelia bicolor (Peracca)

(TCWC 3). A species found only in the primary forest. Centro Unión (1 ♀), Mishana (1 ♀), Moropon (1 ♂). First record: this paper. We have little information on this species, our specimens were taken from the forest floor and from the edge of an "aguajal" depression.

Taxonomic data are: scale rows 19-19-17 (2), 19-19-15 (1), smooth, two apical pits; anal plate entire; ventrals of male number 188, females 199 (2); caudals of male number 93, females 74, 80; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 2+2 (1), 2+3 (2); supralabials 8-8; infralabials 9-9; supralabials entering orbit 4+5; maxillary teeth 14 (2), 15 (1), posterior two teeth enlarged, grooved, separated from remainder by moderate diastema; LOA/tail ratio of male .266, females .179, .205; maximum LOA of male 672 mm, females 1,000 mm.

Ground color bright coral red, all scales of the red area tipped with black; snout from rostral to prefrontals light yellow, remainder of head to posterior edge of parietals black; iris bright red; labials yellow; venter pinkish yellow to red, throat usually yellow, fading to pink posteriorly; edges of ventrals dark edged; caudals coral red.

Clelia clelia clelia (Daudin)

(TCWC 2). This species occurs in open and forest edge situations. Centro Unión (1 ♀), Santa Maria (1 ♀). First record: Pebas (Cope, 1870). Little natural history information is available for this form. One young individual was seen swallowing another snake (species unknown) on the forest floor near Mishana.

Taxonomic data are: (females) scale rows 19-19-17, smooth, two apical pits; anal plate entire; ventrals number 234, 236; caudals 78, 80; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 2+3; supralabials 7-7; infralabials 8-8; supralabials entering orbit 3+4; maxillary teeth 13, 14; last two enlarged, grooved, separated from remainder by moderate diastema; LOA/tail ratio .175 (2nd specimen dehydrated); maximum LOA 555 mm.

Ground color red, edges of dorsal scales dark red; snout, from rostral to immediately behind eyes black, followed by broad white collar; ventrals and subcaudals creamy white; our two specimens are juveniles, observed adults are purplish black or grayish black dorsally with an immaculate white venter.

Dendrophidion dendrophis (Schlegel)

(TCWC 2, MPM 2). This species has only been taken in primary forest situations. Mishana (2 ♂, 1 ♀). Moropon (1 ♀). First record: this paper. One specimen was taken while it rested on a fallen log, one from the edge of an aguajal swamp, one crawling across the leaf litter of the forest floor and one taken at night while it slept on top of a bough of leaves about 2.3 m above the ground. One stomach contained the results of two unidentifiable frogs.

Taxonomic data are: scale rows 17-17-15, keeled, two apical pits; anal plate entire; ventrals of males number 158, 160, females 154, 158; caudals of male 187, female 192 (2 with inc. tails); preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 2+2 (3), 2+1/2+2 (1); supralabials 9-9; infralabials 9-9; supralabials entering orbit 4+5+6; maxillary teeth 42-46; LOA/tail ratio of male .538, female .435; maximum LOA of male 1,066 mm, female 451 mm.

Ground color coffee brown; a series of 53 to 57 coffee brown blotches or bands separated by ochreous yellow interspaces about one scale row in length; head blackish brown, darker than anterior dorsum, posterior dorsum darker than anterior part of body; infralabials ochreous yellow, chin and throat white, grading into ochreous yellow near 10-15th ventral, remainder of ventrals and all subcaudals ochreous yellow; iris gold with flecks of brown.

Dipsas catesbyi (Sentzen)

(TCWC 19). A relatively common species found in primary and dense secondary forests. Centro Unión (2 ♀), Iquitos (1 ♂, 2 ♀), Indiana (1 ♂), Moropon (8 ♂, 4 ♀), Santa Maria (1 ♀). First record: Napo or upper Marañon (Cope, 1868). Additional records: Pebas (Cope, 1870), Iquitos, Pebas, Rio Itaya, Rio Nanay (Peters, 1956).

This species was found lying on vines and small shrubs in forest situations. Three females, taken in the months of February, September and December, each contained two fully developed oviducal eggs. Stomach contents consisted primarily of mollusks.

Taxonomic data are: scale rows 13-13-13, smooth, no apical pits; anal plate entire; ventrals of males vary from 183-194 (\bar{x} = 188.8), females 175-188 (\bar{x} = 181.5); caudals of males vary from 101-114 (\bar{x} = 107.1), females 89-101 (\bar{x} = 95.1); preoculars 1-1 (5), 2-2 (12), 1-2 (1), 2-3 (1); postoculars 1-1 (9), 1-2 (2), 2-2 (6), 2-3 (1), 3-3 (1); loreal 1-1; temporals 1+2 (16), 2+2 (1), 1+1/1+2 (1), 1+2/2+2 (1); supralabials 8-8 (4), 7-8 (1), 8-9 (7), 9-9 (6), 10-10 (1); infralabials 10-10 (10), 10-11 (4), 11-11 (2), 11-12 (2); supralabials entering orbit 4+5 (5), 5+6 (4), 4+5/5+6 (3), 4+5/4+5+6 (2), 4+5+6/5+6 (3), 4+5+6 (1); maxillary teeth 18-19 (\bar{x} = 18.2); LOA/tail ratios of males .280-.311 (\bar{x} = .289), females .254-.294 (\bar{x} = .269); maximum LOA of males 685 mm, female 693 mm.

Ground color light brown to reddish brown; dorsum with 15-25 (\bar{x} = 18.9) chocolate brown to black blotches that are edged with white; blotches extend almost across ventrals; 10-17 (\bar{x} = 12.0) similar blotches on tail; venter cream between extension of blotches onto ventrals.

Dipsas indica indica Laurenti

(TCWC 3). A relatively rare species found in secondary and primary forest situations. Moropon (1♂, 1♀), Yanamono (1♀). First record: Napo or Marañon (Cope, 1868). Additional records: Iquitos, Pebas (Peters, 1960).

One of our specimens was taken from a small banana grove surrounded by primary forest, some 2.5 m above the ground.

Taxonomic data are: scale rows 13-13-11, smooth, without apical pits, median row much enlarged; anal plate entire; ventrals of male number 204; females 192, 193; caudals of male incomplete, females 102, 103; preoculars 1-1, (2), 2-2 (1); postoculars 1-1 (1), 2-2 (2); loreal 1-1 (3); temporals 1+3; supralabials 9-9 (2), 9-10 (1); infralabials 14-14 (1), 15-16 (1), 15-17 (1); supralabials entering orbit 5+6 (1), 4+5+6 (2); maxillary teeth 7, 7, 11; LOA/tail of females .260, .262; maximum LOA of females 1,028 mm.

Dorsal ground color grayish brown, somewhat unicolor in old adults, with 31 to 44 dark brown, light edged blotches on body in juveniles and subadults; large yellow spots on scale rows one to three with ground color dark interspaces; yellow spots fade near midbody in adults, present to tail in juveniles; venter chocolate brown throughout.

Dipsas pavonina Schlegel

First record: Iquitos, AMNH 52998, (Peters, 1960). We have seen no specimens of this species, and only one specimen (above) exists as far as we know. We have reservations as to the authenticity of the locality attributed to the only known Peruvian specimen. One of us (Soini) has maintained an active survey of the herpetofauna of the Iquitos region for more than eight years and has been unable to find a specimen of this relatively common species. Peters (1960:64) does not question the presence of this species in the Iquitos region. However, it is quite possible that the specimen was taken within a 500 km radius of Iquitos and shipped from the latter point.

Drepanoides anomalus (Jan)

(TCWC 5). All of our specimens came from secondary forest situations. Iquitos (2♂, 1♀), Moropon (1♂, 1♀). First record: Iquitos (Peracca, 1896). This species appears to occupy open forest situations and human dwellings. One specimen was taken from a crack in a brick wall on the outskirts of Iquitos. Six unidentified lizard eggs were removed from the stomach of one specimen.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate entire; ventrals of males vary from 169-176 (\bar{x} = 170.7), females 174, 176; caudals (divided) of males vary from 76-86 (\bar{x} = 79.7), females 70, 73; preoculars 1-1; postoculars 2-2; loreal absent; temporals 2+2 (4), 2+2/2 3 (1) supralabials 6-6; infralabials 7-7; supralabials entering orbit 3+4, two supralabials in contact with prefrontal; maxillary teeth 10-12 (\bar{x} = 10.6), last two teeth enlarged, nongrooved and separated from remainder by diastema; LOA/tail ratios .249-.265 (\bar{x} = .257), females .227, .231; maximum LOA of males 506 mm, females 595 mm.

Dorsum bright red, each scale of red area with small black suffused spot near its posterior edge; head black to anterior edge of parietals; parietals and nuchal scales white, forming a white collar; ventrals creamy white, caudals white.

Drymarchon corais corais (Boie)

(TCWC 4). A relatively uncommon species found mainly in secondary forest and forest edge situations. Iquitos (1♂), Moropon (2♂, 1♀). First record: this paper. All our specimens were taken from the ground in open forest situations and from cultivated fields. One female taken 21 December contained oviducal eggs. One juvenile from Moropon had eaten a microteiid, *Iphisa elegans*.

Taxonomic data are: scale rows 19-17-15, smooth, two apical pits present; anal plate entire; ventrals of males vary from 207-213 (\bar{x} = 210.0), female 213; caudals of males vary from 76-79 (\bar{x} = 77.0), female incomplete; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 2+2; supralabials 8-8; infralabials 8-8 (1), 9-9 (3); supralabials entering orbit 4+5; maxillary teeth 17-18 (\bar{x} = 17.5); LOA/tail ratios of males .174-.193 (\bar{x} = .181), female (inc.); maximum LOA of males 1,364 mm.

Ground color variable, usually beginning behind head with black, progressively fading to brown, tan and finally yellow; some indication of bands posteriorly; head usually reddish brown to dark brown; venter and caudals dirty yellow to dirty white.

Drymobius rhombifer (Günther)

(TCWC 4). This species has only been taken in the primary forest. Centro Unión (1 ♂, 1 ♀), Mishana (1 ♂), Moropon (1 ♂). First record: this paper. All of our specimens except one were taken from the forest floor. One was found on a log at the edge of a forest pond.

Taxonomic data are: scale rows 17-17-15, keeled, two apical pits present; anal plate divided; ventrals of males vary from 152-155 (\bar{x} = 153.0); female 158; caudals of males vary from 100-101 (\bar{x} = 100.3), female 98; preoculars 1-1; postoculars 2-2; temporals 2+2; loreal 1-1; supralabials 9-9; infralabials 10-10; supralabials entering 4+5+6; maxillary teeth 30-31 (\bar{x} = 30.3); LOA/tail ratios of males .277-.312 (\bar{x} = .297), female .292; maximum LOA of males 1,202 mm. female 1,097 mm.

Three specimens have a greenish ground color with 22-31 (\bar{x} = 25.7) olive brown romboidal body blotches; some blotches partly split with light ochreous yellow bar through center; one specimen is dark reddish brown, without blotches, but with scattered dark brown scales throughout dorsum; labials whitish with red suffusion, upper edges black; venter of all specimens generally whitish (reddish in one) but heavily mottled with blackish spots.

Drymoluber dichrous (Peters)

(TCWC 19). A species restricted to forest floor situations. Centro Unión (1 ♂), Mishana (2 ♀), Moropon (8 ♂, 7 ♀), Rio Maniti (1 ♀). First record: Napo or Marañon (Cope, 1868). All of our specimens were found on the forest floor during the day. One stomach contained a frog, *Leptodactylus* sp., and another contained a lizard, *Gonatodes humeralis*. Hatchlings were found during the months of February, April, and October.

Taxonomic data are: scale rows 15-15-15, smooth, two apical pits present; anal plate entire; ventrals of males vary from 163-175 (\bar{x} = 167.8), females 165-179 (\bar{x} = 173.4); caudals of males vary from 88-96 (\bar{x} = 93.0), females 91-100 (\bar{x} = 96.5); preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+2 (2), 2+2 (16), 1+2/2+2 (1); supralabials 7-7 (1), 8-8 (16), 8-9 (1), 9-9 (1); infralabials 8-9 (1), 9-9 (12), 9-10 (1), 8-10 (1), 10-11 (1), 10-10 (3); supralabials entering orbit 3+4+5 (16), 4+5 (2), 3+4+5/4+5+6 (1); maxillary teeth 22-25 (\bar{x} = 23.1), subequal, without diastema; LOA/tail ratios of males .254-.280 (\bar{x} = .268), females .262-.288 (\bar{x} = .279); maximum LOA of males 1,300 mm, females 1,032 mm.

Dorsum uniformly bluish black or deep blue in adults, throat white, fading to light yellow to deep yellow posteriorly, venter deep yellow; dorsum of hatchlings and juveniles with 30-39 (\bar{x} = 35.3) bluish black crossbands separated by narrow, zig-zag white interspaces; orange collar present across parietals and frequently orange present on snout; venter similar to adults. One juvenile specimen had a reddish brown dorsum with black crossbands; black bands separated by narrow bands of very light reddish brown scales that are edged with white, venter uniform brownish white; head dark reddish brown with light grayish brown snout.

Erythrolamprus aesculapii aesculapii (Linnaeus)

(TCWC 9). A tricolored snake restricted to closed canopy forest situations. Centro Unión (1♂, 2♀), Mishana (1♂, 1♀), Moropon (2♂, 2♀). First record: Pebas (Cope, 1870). All our specimens were taken from the forest floor, usually in leaf litter or crossing paths. One hatchling was taken in December.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 184-193 (\bar{x} = 189.5), females 179-194 (\bar{x} = 184.8); caudals of males vary from 41-46 (\bar{x} = 43.3), females 35-43 (\bar{x} = 39.2); preoculars 1-1 (7), 2-2 (2); postoculars 2-2; loreal 1-1; temporals 1+2; supralabials 7-7; infralabials 9-9; supralabials entering orbit 3+4; maxillary teeth 13-14 (\bar{x} = 13.6), last two moderately enlarged, grooved, separated from remainder by large diastema; LOA/tail ratios of males .120-.137 (\bar{x} = .127), females .109-.134 (\bar{x} = .120); maximum LOA of males 767 mm, females 927 mm.

Dorsum with triads of red and black separated by yellow bands; black bands one-third width of red and yellow bands about equal in width to black bands; triads vary from 3 to 10; 4 to 8 black and 2 to 4 red tail bands; snout yellow with black edged scales, black band across orbits, red band on parietal-nuchal area; some adults with much black suffusion in red dorsal bands, causing some of the triads to become obscure or absent.

Helicops angulatus (Linnaeus)

(TCWC 22, MPM 7). A nocturnal, semiaquatic snake found in most aquatic situations of the region. Centro Unión (1♂, 5♀), Iquitos (4♂, 8♀), Maniti (1♂), Mishana (1♀), Moropon (3♂, 2♀), Yanamono (4♀). First record: Iquitos (Cope, 1875). Additional record: Pebas (Cope, 1885).

This species is primarily nocturnal and aquatic, but is sometimes encountered on the forest floor, edges of lagoons, ponds, streams and rivers, under trash piles and in gardens. The principal habitat appears to be quiet water situations with an abundance of aquatic vegetation. Several specimens were found gorging themselves on dead and dying fish that were stunned by local natives, using "barbasco" root (rotenone). Of 20 stomachs examined, the majority contained fish, but a few contained the remains of frogs and one contained an adult lizard, *Neusticurus ecleopus*.

Adult females taken in August and September contained 9 to 10 well developed oviducal eggs. Hatchlings were also found during the months of January, September, and October.

Taxonomic data are: scale rows 19-19-17, keeled, without apical pits; anal plate divided; ventrals of males vary from 104-112 (\bar{x} = 108.9), females 107-114 (\bar{x} = 109.5); caudals of males vary from 85-99 (\bar{x} = 94.1), females 66-87 (\bar{x} = 77.3); preoculars 1-1 (22), 1-2 (3), 2-2 (4); postoculars 2-2; loreal 1-1; temporals highly variable on both sides, from 1+1 to 3+4; supralabials 8-8 (27), 8-9 (2); infralabials 9-10 (1), 10-10 (26), 10-12 (1), 11-11 (1); supralabials entering orbit, 4th only (25), 4+5 (4); maxillary teeth 17-19 (\bar{x} = 18.3), last two enlarged, nongrooved, separated from remainder by a diastema; LOA/tail ratios of males .348-.396 (\bar{x} = .378), females .294-.343 (\bar{x} = .322); maximum LOA of males 686 mm, females 731 mm.

Dorsum usually grayish brown to olive brown (occasional specimens may be reddish brown) with 22-25 (\bar{x} = 23.3) olive brown to grayish black blotches that narrow laterally and become black bars along each side of the ventrals; ventrals and caudals may be gray, yellow or reddish with black marks corresponding to dorsal blotches along each side of the ventrals, seldom meeting on the median line.

When frightened, this species strongly compresses its entire body dorsoventrally, and makes short jerky movements while striking, very similar to that of North American watersnakes of the genus *Natrix*.

Helicops leopardinus (Schlegel)

(TCWC 4). A small aquatic species found in aquatic situations in the primary forest. Iquitos (1♂, 1♀), Mishana (1♂), Yanamono (1♀). First record: this paper. One stomach contained an armored catfish.

Taxonomic data are: scale rows 19-19-17 (3), 21-19-17 (1), keeled, without apical pits; anal plate divided; ventrals of males 124, 125, females 127, 128; caudals of males 55, 73, female 44; preoculars 1-1 (3), 1-2 (1); postoculars 2-2; loreal 0-1 (1), 1-1 (3); temporals 1+3 (2), 1+3/2+3 (1), 1+2/2+2 (1); supralabials 8-8; infralabials 10-10; supralabials entering orbit, 4th (3), 4+5 (1); maxillary teeth 17-19 (\bar{x} = 18.0), no diastema; LOA/tail ratios of males .250, .251, female .169; maximum LOA of males 420 mm, female 617 mm.

Dorsum grayish tan to grayish olive with four longitudinal rows of irregular blackish spots; venter orange red and black checkered, banded, or both.

Helicops pastazae Shreve

A large species of *Helicops* known only from the vicinity of Iquitos, Rio Itaya, in the lowlands of Peru. Elsewhere, the species is distributed in Andean foothill localities from the Rio Marañon, Amazonas, Peru, northward to the vicinity of Maracaibo, Zulia, Venezuela (Rossman, 1976).

There are several reasons why we suspect the locality data to be in error. (1) The Bassler Collection at the American Museum of Natural History is extremely large, with several thousand snakes taken over a widely scattered area in the upper Amazon Basin. (2) Many snakes were brought to Dr. Bassler by natives and the exact localities are frequently uncertain. (3) After eight years of observing the snake fauna in the Iquitos region, one of us (Soini) has never encountered the species. (4) Rossman (1976:10-11) has some reservations that the specimen from Iquitos (AMNH 53920) "actually represents an established population . . ." because ". . . the locality is far removed from the main range of the species and is at a lower elevation than is typical."

Taxonomic data (supplied by Douglas Rossman) for AMNH 53920 are: Juvenile male; scale rows 23-24-19, keeled, without apical pits; anal plate divided; ventrals 127, caudals 110; preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+3/1+2; supralabials 8-8; infralabials 11-11; LOA/tail ratio .377; LOA of juvenile 276 mm.

Head dark, with broad light band extending around snout from anterior edge of preocular, including loreal, nasal and edge of internasal and rostral; dorsum with six rows of black spots, including those that extend onto the venter; very few dorsal spots fused; venter discolored, but apparently the original pattern was checkered.

Helicops polylepis Günther

(TCWC 3, MPM 1, USNM 1). A relatively large species found in aquatic situations in secondary and primary forests. Iquitos (2 ♀), Maniti (1 ♀), Santa Maria (1 ♀), Yanayacu (1 ♀). First record: "Amazon (Cope, 1862). Additional record: Pebas (Cope, 1870). One specimen was found crossing a muddy field near the bank of the Rio Nanay. Others have been found lying in water near the shore of small ponds.

Taxonomic data are: (all ♀♀) scale rows 23-23-19, keeled, without apical pits; anal plate divided; ventrals 120-125 (\bar{x} = 122.3); caudals 78-82 (\bar{x} = 80.3); preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+2/2+2 (2), 2+2 (2), 2+3 (3+3 (1)); supralabials 8-8; infralabials 10-10 (1), 10-11 (1), 11-11 (3); supralabials entering orbit, 4th; maxillary teeth 16-17 (\bar{x} = 16.7) slight diastema; LOA/tail ratios .290-.303 (\bar{x} = .299); maximum LOA 1,035 mm.

Dorsum brownish gray to rusty brown with five rows of small dorsal black spots arranged in alternating rows; venter brownish black with one to two yellow spots on each ventral; caudals black except for one to three small yellowish spots; white band across throat at level of posterior edge of jaw.

Helicops angulatus and *H. polylepis* occur in the same ponds and have been taken side by side, resting on a small sand bank. However, where the two species occur together, *angulatus* is always more abundant.

Helicops yacu Rossman and Dixon

(TCWC 4). An aquatic species found in flooded forests and along stream banks in primary forest. Centro Unión (1 ♀), Moropon (2 ♀), Yanamono (1 ♀). First record: (those preceding by Rossman and Dixon, 1975).

This species appears to be restricted to closed canopy forest situations. All of our specimens were taken deep within the primary forest. One adult female taken in June contained 7 well developed oviducal eggs.

Taxonomic data are: (all ♀♀) scale rows 26(27)-27(28)-18, keeled, without apical pits; anal plate divided; ventrals 130-136 (\bar{x} = 133.5); caudals 85-96 (\bar{x} = 90.5); preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+3 (2), 1+2/1+3 (1), 1+3/2+3 (1); supralabials 8-8 (2), 9-9 (2); infralabials 11-11 (1), 12-12 (3); supralabials entering orbit, 4th (3), 5th (1); maxillary teeth 16-17 (\bar{x} = 16.6); LOA/tail ratios .276-.324 (\bar{x} = .307); maximum LOA 747 mm.

Dorsum generally light to dark grayish brown with four longitudinal rows of small black spots from parietals to tail; venter grayish brown to black with or without darker crescents or spots; throat and chin dirty white, with or without a distinct, broad, black chevron extending between corners of mouth.

Hydrops martii callostictus Günther

(TCWC 7). An aquatic snake found in most aquatic situations of the Iquitos region. Centro Unión (2♀), Iquitos (2♀), Moropon (1♂, 1♀), Santa Maria (1♀). First record: Pebas (Cope, 1870). Additional records: Rio Itaya, Isla Lupuna (Roze, 1957). Most of our series was taken in small streams or along their banks. One hatchling was found in November.

Taxonomic data are: scale rows 19-17-15, smooth, without apical pits, anal plate divided; ventrals of male 167, females 170-178 (\bar{x} = 173.5); caudals of male 70, females 65-66 (\bar{x} = 65.3); preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1 (6), 1+2 (1); supralabials 8-8 (6), 8-9 (1); infralabials 8-8 (3), 8-9 (2), 9-9 (2); supralabials entering orbit, 4th; 2nd supralabial touching prefrontal (5), 2nd & 3rd (2); maxillary teeth 18-19 (\bar{x} = 18.4), last two somewhat enlarged, separated from remainder by diastema; LOA/tail ratio of male .214, females .174-.182 (\bar{x} = .179); maximum LOA of females 1,158 mm, male 500 mm.

Ground color of dorsum yellowish brown to tan brown; 41-50 (\bar{x} = 45.6) black bands on dorsum, 14-20 (\bar{x} = 15.7) bands on tail; body bands narrow dorsally, wider laterally, interspace adjacent to band brown, becoming bright orange brown towards center of interspace; body bands edged with bright sulfur yellow, yellow confined to center of each scale or occasionally covering entire scale; narrow irregular, yellow band across nasals; incomplete wide, yellow collar behind parietals, passing across throat; venter yellow with body bands extending across ventrals or forming a checkered pattern. Young and juveniles have coral to brick red ground color (lighter ventrally than dorsally), black rings edged with white; snout and nuchal bands white.

Hydrops triangularis bassleri Roze

(TCWC 5). An aquatic snake found in aquatic situations of secondary and primary forests. Iquitos (1♀), Mishana (2♂), Moropon (1♂, 1♀). First record: Iquitos, Requena, Rio Itaya (Roze, 1957). Our series consists of hatchlings and juveniles. One juvenile was found as it chased a caecilian in a muddy ditch. The hatchlings were taken in the months of November and December.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 163-181 (\bar{x} = 172.3); females 169, 173; caudals of males vary from 65-68 (\bar{x} = 66.5), females 52, 55; preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1; supralabials 8-8; infralabials 8-8; supralabials entering orbit, 4th; 2nd supralabial touching prefrontal (1), 2nd & 3rd (3), 1st (1); maxillary teeth 14-16 (\bar{x} = 15.2), last two somewhat enlarged, weak diastema; LOA/tail ratios of males .191-.200 (\bar{x} = .196), female .157; maximum LOA of males 541 mm, female 440 mm.

Dorsum red and black banded, black bands vary from 39-68 (\bar{x} = 50.6), tail bands 12-16 (\bar{x} = 14.5); obscure reddish spots scattered over head; bright yellow nuchal band that may be followed by 2 to 3 yellowish bands (at least in young) with remaining bands black and red; distance between black bands variable; venter similar to dorsum.

Imantodes cenchoa cenchoa (Linnaeus)

(TCWC 17). An arboreal snake found in all forest situations, and in orchards. Iquitos (1 ♂, 3 ♀), Moropon (8 ♂, 5 ♀). First record: Napo or Marañon (Cope, 1868). Additional records: Iquitos (Cope, 1875), Pebas (Cope, 1885). Reproductive data is lacking for our series, but Fitch (1970) states that a gravid female from Iquitos contained two oviducal eggs in January and juveniles less than 300 mm in SVL were present in February, March, August and September.

Taxonomic data are: scale rows 17-17-17, smooth, without apical pits; anal plate divided; ventrals of males vary from 257-272 (\bar{x} = 267.1), females 233-267 (\bar{x} = 256.0); caudals of males vary from 160-175 (\bar{x} = 167.8), females 141-165 (\bar{x} = 159.1); preoculars 1-1 (7), 2-2 (9), 3-2 (1); postoculars 1-1 (2), 1-2 (1), 2-2 (13), 2-3 (1); loreal 1-1 (16), 2-1 (1); temporals 1+2 (2), 1+2/2+2 (3), 2+2 (5), 2+2/2+3 (2), 2+3 (4), 1+3 (1); supralabials 7-7 (1), 8-8 (12), 7-8 (1), 7-9 (1), 8-9 (1); infralabials 9-9 (2), 10-10 (9), 9-10 (2), 10-11 (2); supralabials entering orbit 4+5 (12), 3+4/4+5 (1), 3+4 (1), 4+5/4+5+6 (2); maxillary teeth 15, invariable, the last two greatly enlarged, grooved and separated from remainder by large diastema; LOA/tail ratios of males .267-.324 (\bar{x} = .296), females .286-.311 (\bar{x} = .302); maximum LOA of males 1,138 mm, females 997 mm.

Color pattern consists of 33-40 (\bar{x} = 37.3) large, chocolate brown body blotches on a tan to tan-brown ground color; blotches frequently touch the ventrals and occasionally fuse middorsally; tail bands vary from 22-30 (\bar{x} = 26.5) and are generally darker

than body blotches; tail bands frequently fuse and become obscure; head dark brown with a thin "Y"-shaped white line, whose arms pass just inside of the orbits, unite with the stem on the parietals and stem portion passes onto the nuchal blotch; venter grayish tan, with minute black or dark brown flecking.

Imantodes lentiferus (Cope)

(TCWC 8). An arboreal species known only from the primary forest. Centro Unión (1 ♂), Moropon (3 ♂, 2 ♀), Paraiso (1 ♂), Santa Maria (1 ♂). First record: Pebas (Cope, 1894). Reproductive data are lacking for our series. One juvenile female less than 300 mm SVL was taken in June. Three adult males and one adult female were taken at the same time from a shrub within the closed canopy forest.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate entire; ventrals of males vary from 231-234 (\bar{x} = 232.3), females 223, 231; caudals of males vary from 143-155 (\bar{x} = 150.5), females 139, 153; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+2; supralabials 8-8; infralabials 9-10 (1), 10-10 (3), 10-11 (2), 11-11 (2); supralabials entering orbit 3+4+5; maxillary teeth 20-23 (\bar{x} = 21.3), last two enlarged, grooved and separated from remainder by moderate diastema; LOA/tail ratios of males .288-.328 (\bar{x} = .316), females .300, .326; maximum LOA of males 1,044 mm, females 1,020 mm.

Color pattern consists of 38-47 (\bar{x} = 41.8) yellowish brown to brown body blotches on a tan to yellowish tan ground color; each body blotch has a dark spot on its anterior and posterior edge and frequently a dark spot lies middorsally between each of the blotches; body blotches seldom reaching ventrals; no definite intercalary spots; tail bands vary from 23-29 (\bar{x} = 26.5), usually more distinct than body blotches; head yellowish with 3 to 5 small brown spots that occasionally fuse into 2 to 3 spots; venter grayish tan with minute flecks of dark brown or black.

Leimadophis typhlus typhlus (Linnaeus)

(TCWC 5). A relatively small snake found in semi-open to closed canopy forests. Centro Unión (1 ♀), Moropon (2 ♂), Yanamono (1 ♂, 1 ♀). First record: Napo and Marañon (Cope, 1868, in part, as *L. almadensis*). Additional records: Pebas (Cope, 1870, as *Xenodon isolepis*). This species was found on the forest floor near the base of large trees. No reproductive or food data are available.

Taxonomic data are: scale rows 19-19-15, smooth, one apical pit; anal divided; one preocular, two postoculars; temporals 1+2; 4th and 5th supralabial entering orbit; one loreal; supralabials 8, infralabials 10-10 (2), 10-11 (1); ventrals of males number 145, 151, 157, females 155, 158; caudals of males 53, 58, 60, females 57, inc.; maxillary teeth vary from 20-25 (\bar{x} = 21.8), diastema present; LOA/tail ratios for males .178, .199, .206, females .193, inc.; maximum LOA for females 652 mm, males 581 mm, snout/eye diameter ratios vary from .682-.769 (\bar{x} = .725).

Venter and subcaudals whitish or light yellow with a pink or red dot at the edge of each scale; dorsum either green (adults) or gray (young, juveniles) with 48 to 55 diagonal black streaks beginning on anterior fifth of body to tail; the streaks are united middorsally and extend posteriorly towards ventrals; the streaks are most prominent in juveniles, faded or occasionally absent in adults; lateral black tail streak or line generally obscure or absent in young and adults, but may be occasionally distinct; lips yellow; black streak from nostril to eye.

There is considerable taxonomic confusion concerning this species, its subspecies and its relationship with *L. poecilogyrus*. A geographic study of the latter species has recently been completed by Allan Markezich.

Leimadophis sp.

(TCWC 3). A small (maximum LOA 356 mm) terrestrial snake confined to the closed canopy forest. Mishana (3 ♂), first record for Peru. All three specimens were taken from the forest floor litter.

This species is relatively rare in the Iquitos region. The present three specimens were taken over an eight year period. Behavioral and reproductive data are lacking for this form.

Taxonomic data are: (all males) scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals 134-138 (\bar{x} = 135.7); caudals 67-72 (\bar{x} = 70.7); preoculars 1-1; postoculars 2-2; temporals 1+2; loreal 1-1; supralabials entering orbit 3+4+5; supralabials 8; infralabials 9; LOA/tail ratio .269-.289 (\bar{x} = .282); maxillary teeth 29-30 (\bar{x} = 29.3), with diastema preceding last two enlarged, non-grooved teeth.

Dorsum light brown with dorsolateral pair of small black spots from posterior body to tail tip; an irregular yellowish, dotted lateral line on 4th scale row, bordered below by black; venter and subcaudals cream; extreme edge of ventrals with grayish black flecks; top of head black, lips bright yellow; yellow triangular spot behind eye; pair of yellow spots behind parietals; incomplete yellow nuchal collar.

This form is currently being described by Charles W. Myers.

(*Leimadophis reginae* (Linnaeus))

(TCWC 48). A relatively small, common snake occurring in grassy fields, clearings, and edge situations. Centro Unión (1♂, 16♀), Indiana (1♂), Iquitos (1♂, 10♀), Mishana (2♀), Moropon (2♂, 9♀), Paraiso (1♀), Yanamono (4♂, 1♀). First record: Napo and Marañon (Cope, 1868).

This species is common around grassy ponds, ditches and seeps; they also occur along the forest edge, secondary forests, in yards, gardens, under or around houses and occasionally in cultivated fields. An adult female taken on 24 January contained eight well developed, oviducal eggs; hatchlings were present in the months of May, June, October, November and December. Fitch (1970) examined gravid females taken every month except May, July and October from the Iquitos area. Of 23 gravid females he examined, the clutch varied from 1 to 8 (\bar{x} = 5.0) eggs. Stomach contents were fish and frog remains. Defense behavior consists of an alternation of constricting and expanding the neck and anterior part of the body for several seconds in a "flashing" manner.

Taxonomic data are: scale rows 15-15-13 (1), 15-15-15 (25), 15-17-15 (1), 17-15-15 (2), 17-17-15 (20), smooth, without apical pits; anal plate divided; ventrals of males vary from 138-147 (\bar{x} = 143.4), females 140-154 (\bar{x} = 145.1); caudals of males vary from 61-69 (\bar{x} = 63.4), females 55-70 (\bar{x} = 62.9); preoculars 1-1 (47), 1-2 (1); postoculars 2-2; loreal 1-1; temporals 1+2; supralabials 7-8 (2), 8-8 (42), 8-9 (1), 9-9 (2), 9-10 (1); infralabials 8-8 (1), 9-9 (1), 9-10 (1), 10-10 (44); supralabials entering orbit 4+5 (42), 3+4+5/4+5 (2), 4+5+6 (1), 4+5/4+5+6 (2), 3+4/4+5 (1); maxillary teeth vary from 23-27 (\bar{x} = 24.5), last two somewhat enlarged and separated from remainder by moderate diastema; LOA/tail ratios of males .246-.282 (\bar{x} = .262), females .202-.259 (\bar{x} = .235); maximum LOA of males 548 mm, females 603 mm.

An analysis of the midbody scale row reduction by sex indicates that 12 females and 8 males had 17 midbody scale rows and 28 females had 15 midbody scale rows. An analysis of unspotted and spotted venters revealed that all males were spotted, those females with 17 scale rows at midbody were spotted, and 17 were spotted and 11 unspotted of 28 females with 15 scale rows at midbody. Statistical data for caudals, ventrals, LOA/tail percentages, and maxillary teeth for each of the above categories revealed no significant differences. Thus it appears to us that our sample came from a single variable population of *L. reginae*.

The dorsum is generally light green with diagonal black streaks along the lateral aspect. The venter is usually light to warm yellow, with or without black spotting. There are some extreme variations of the color pattern. Some individuals have each dorsal

scale with a black edge anteriorly, lateral and posterior edges red, with a greenish center. One specimen had the anterior part of the body bright green from the edge of the ventrals to the second scale row, the remainder of the scales bright brick red. The posterior part of the body dull green, with a black line along the third scale row from about the 93rd ventral to the tip of the tail. The venter was warm yellow with reddish suffusion.

Juveniles have light yellow venters with or without black spotting. The dorsum is olive green to bright green with some diagonal dark streaks laterally. The head is black and/or green, with or without an olive green or brown blotch just posterior to a light (whitish) nuchal loop. A pair of whitish spots are present on or just posterior to parietals; lateral black tail stripe usually prominent. Occasionally, obscure spotting is present along the sides of the body, most frequently on scale rows one, two, and three.

Comments. Shreve (1947:313) indicated that specimens of *L. reginae* from Leticia, Colombia, had either 15 or 17 scale rows at midbody. Peracca (1897:3) recorded *L. albiventris* from Cononaco, Peru, indicating that it had 15 scale rows at midbody. The latter record is probably referable to *L. reginae*, since no *L. albiventris* is known to have 15 midbody scale rows. Prado and Hoge (1947) record *L. albiventris* from Central Peru. We believe this recorded specimen to represent the unspotted venter phase of *L. reginae*.

We suggest that Boulenger's (1905:455) description of *L. oligolepis* (type locality: Para, Brazil), the only species of *Leimadophis* with 15-15-15 dorsal scale rows (*vide* Peters & Orejas-Miranda, 1970) is another example of *L. reginae* with that scale row combination. All other characteristics of *oligolepis* presented by Boulenger fall within the variation of *L. reginae*.

Leimadophis pygmaeus (Cope)

(TCWC 8). A very small, secretive snake found in open grassy fields, secondary and primary forests. Centro Unión (2♂), Mishana (1♂), Moropon (1♂, 1♀), Santa Maria (1♂, 2♀). First record: Napo or Marañon (Cope, 1868).

Our specimens were taken in forest leaf litter and in grass fields near water around Indian villages. No reproductive or food data are available for this species. Two specimens were removed from the stomachs of the coral snake *Micrurus spixii*.

Taxonomic data are: scale rows 17-17-15, smooth, without apical pits, anal plate divided; ventrals of males vary from 122-133 (\bar{x} = 126.2), females 122-129 (\bar{x} = 125.3); caudals of males vary from 29-38 (\bar{x} = 34.3), females 33-38 (\bar{x} = 35.0); preoculars 1-1 (7), 2-2 (1); postoculars 1-1 (1), 2-2 (7); temporals 1+2 (7), 1+1

(1); loreal 1-1; supralabials 6-6 (3), 7-7 (5); infralabials 8-8 (7), 9-9 (1); supralabials entering orbit 2+3 (1), 3+4 (7); maxillary teeth vary from 9-10 (\bar{x} = 9.6), last two teeth somewhat enlarged, nongrooved and separated from remainder by a moderate diastema; LOA/tail ratios for males vary from .148-.177 (\bar{x} = .166), females .150-.174 (\bar{x} = .163); maximum LOA in males 232 mm, females 247 mm.

Venter and caudals white with the outer edge of ventrals somewhat dusky; dorsum olive brown with black nuchal loop involving posterior one half of parietal; 10-17 (\bar{x} = 13.7) black crossbands and/or spots to midbody, remainder uniform olive brown; lateral black stripe beginning about midbody and continuing to tail tip; top of head olive brown, area around eyes black with black streak extending from eye to posterior corner of mouth.

Leptodeira annulata annulata (Linnaeus)

(TCWC 26). A semiarbooreal species found in all major habitats of the Iquitos region. Centro Unión (8 ♂, 9 ♀), Maniti (1 ♂), Mishana (1 ♂), Quebrada Yanayacu, 32 km below Iquitos (1 ♀), Santa Maria (3 ♀), Yanamono (2 ♂, 1 ♀). First record: Napo and Marañon (Cope, 1868); additional records: Pebas (Cope, 1870). Hatchlings less than 300 mm SVL were present during the months of June, July and August. Gravid females containing 5 to 7 oviducal eggs were present in March and October. Fitch (1970) examined a large series of females from Iquitos and found gravid females present in every month except April, May and July.

Three of 26 stomachs examined contained amphibians (*Bufo typhonius*, *Adenomera andre* and *Leptodactylus* sp.). Duellman (1958) found a wide variety of anuran species in the stomachs of the 26 specimens that he examined.

Taxonomic data are: scale rows (♂♂) 19-19-13 (10), 19-19-14 (1), 19-19-15 (1), (♀♀) 17-17-11 (1), 19-19-13 (2), 19-19-15 (11), smooth, two apical pits present; anal plate divided; ventrals of males vary from 181-199 (\bar{x} = 190.8), females 183-198 (\bar{x} = 191.1); caudals of males vary from 93-105 (\bar{x} = 97.1), females 80-95 (\bar{x} = 86.9); preoculars 1-1 (24), 1-2 (1), 2-2 (1); postoculars 2-2; loreal 1-1; temporals 1+2 (25), 1+2/2+2 (1); supralabials 7-7 (1), 7-8 (2), 8-8 (23); infralabials 9-9 (1), 10-10 (18), 10-11 (6), 11-11 (1); supralabials entering orbit 3+4+5 (19), 3+4+5/4+5 (3), 4+5 (4); maxillary teeth 17-20 (\bar{x} = 16.4), last two enlarged, grooved, separated from remainder by moderate diastema; LOA/tail ratios of males .260-.294 (\bar{x} = .275), females .236-.256 (\bar{x} = .244); maximum LOA of males 768 mm, females 780 mm.

Ground color variable, from tan to dark brown, dorsum with 30-35 (\bar{x} = 32.6) chocolate to blackish brown, rounded middorsal

spots; body spots tend to fuse dorsally in 23 of 26 specimens; no head spots or light lines; whitish to yellowish nuchal collar in hatchling and juveniles; venter immaculate white or yellowish white.

Leptophis ahaetulla nigromarginata (Günther)

(TCWC 23). An arboreal species in all habitats except closed canopy forest situations. Centro Unión (1 ♂), Iquitos (2 ♂, 2 ♀), Mishana (4 ♂, 3 ♀), Moropon (3 ♂, 7 ♀), Paraiso (1 ♂). First record: Pebas (Cope, 1870). Additional records: Iquitos, lower Rio Napo, (Oliver, 1948). Our entire series was taken from arboreal perches in dense foliage of shrubs and small trees. Two gravid females containing two oviducal eggs each were taken in March and April.

Stomach contents were all anurans; those that could be identified were *Hyla* sp. and *Hyla rubra*.

Taxonomic data are: scale rows 15-15-11, keeled, one apical pit present; anal plate divided (21), entire (2); ventrals of males vary from 146-166 (\bar{x} = 152.0), females 154-162 (\bar{x} = 157.5); caudals of males vary from 134-162 (\bar{x} = 149.5), females 138-163 (\bar{x} = 146.8); preoculars 1-1 (22), 1-2 (1); postoculars 2-2 (21), 2-3 (2); loreal absent; temporals 1+1 (1), 1+2 (18), 1+1/1+2 (3), 2+2 (1); supralabials 8-8 (7), 8-9 (5), 9-9 (11); infralabials 9-10 (2), 10-10 (3), 10-11 (3), 11-11 (14), 12-12 (1); supralabials entering orbit 4+5 (8), 4+5/5+6 (5), 5+6 (10); supralabials touching prefrontals 2+3 (7), 2+3/2+3+4 (4), 2+3+4 (12); maxillary teeth 24-29 (\bar{x} = 26.6); LOA/tail ratios of males .380-.412 (\bar{x} = .397), females .383-.402 (\bar{x} = .394); maximum LOA of males 1,215 mm, females 1,069 mm.

Dorsum light green with scales edged in black; dorsal scales become increasingly yellowish towards lateral scale rows; ventrals coppery or very light green except throat and chin that are white (sometimes with a bluish tint); subcaudals coppery; supralabials whitish; cephalic black spots present.

Leptophis cupreus (Cope)

(TCWC 1, USNM 1). This species is extremely rare and only known from the primary forest. Yanamono (1 ♂, 1 ♀). First record: Napo and Marañon (Cope, 1868). Our specimens were taken among leaf litter of the forest floor. Very little is known about the ecology of this species. The holotype has been lost (Peters and Orces-V., 1960) and the only extant specimens known are those (5) belonging to Gustavo Orces-V and the specimens listed below.

Our specimens fall within the known variation of the species (our data in parentheses if different from that presented for the species by Peters and Orces-V., 1960): scale rows 15-15-11, keeled, one apical pit present; anal plate divided in females, divided or entire in males; ventrals of males 150-155 (157), females 147-154; subcaudals of males 137-141 (142), females 134-146 (inc.); supralabials 8-8; infralabials 10-10 or 11-11 (9-10); supralabials entering orbit 4+5; loreal 0-0 or 0-1; preoculars 1-1; postoculars 2-2; maxillary teeth unknown (21); temporals 1+1 or 1+2; SVL varied from 320 to 410 mm (190-282 mm); tail length varies from 205 to 280 mm (inc.). LOA/tail ratio for our male .383.

Dorsum and venter coppery brown, dorsum somewhat darker than venter; top of head darker; chin and labials white.

Liophis breviceps Cope

(TCWC 3, USNM 1). A small, beautifully colored snake found in closed canopy forest situations. Mishana (2 ♂, 1 ♀), Yanamono (1 ♀). First record: this paper. This species is relatively rare in the Iquitos region, with only three specimens taken over an 8 year period. All three specimens were found in forest floor leaf litter. One hatchling was taken in November.

Taxonomic data are: scale rows 17-17-15, smooth, no apical pits; anal divided; ventrals of males 148, 156, females 151, 155; caudals of males 50, 51, female 49, 50; supralabials 7-7; infralabials 8-8 (3), 8-9 (1); preoculars 1-1; postoculars 2-2; temporals 1+2; supralabials entering orbit 3+4; loreal 1-1; maxillary teeth vary from 14 to 15 with a diastema between the posterior enlarged, nongrooved teeth (2) and the remainder of the teeth; LOA/tail ratios for males .171, .173, females .167, .170; maximum LOA for males 145 mm, female 300 mm.

Dorsal ground color dark brown to black with 32 to 34 ill-defined black crossbands separated by dark to moderately defined yellow interspaces; each black band approximately 5 scale rows in length with faint to fairly distinct series of yellow dots partly dividing each band through its middle; nape band black preceded by distinct yellow collar approximately one to two scales rows wide; venter bright red with equal number of black checkered marks or bands corresponding to dorsal black bands; about 13 to 15 black bands beneath tail; head brownish, slightly lighter than dorsum; upper labials with black or dark brown spotting; elongate black spot on 5th through 7th infralabials and a series of black spots on genials.

Comment: *Liophis breviceps* is closely allied to *Liophis cobella*. The color patterns of the two species are relatively identical.

They are sympatric in Surinam and in Colombia but have not been found sympatric in Peru. They have often been confused with each other, especially in non-sympatric situations.

Liophis chrysostomus (Cope)

(TCWC 7). A relatively small snake found in primary forest situations. Centro Unión (3 ♂), Mishana (1♂), Moropon (1 ♂, 2 ♀). First record: Napo or Marañon (Cope, 1868). All of our specimens were taken from leaf litter of the forest floor. Two of our specimens are recent hatchlings from the months of March and November. Two females captured in April and December were not gravid and all stomachs were empty.

Taxonomic data are: scale rows 17-17-15, smooth, no apical pits; anal plate divided; ventrals of males varied from 155-162 (\bar{x} = 159.3), females 157, 158; caudals of males varied from 61-64 (\bar{x} = 62.0), females 60, 60; supralabials 8-8; infralabials 10-10; supralabials entering orbit 4+5; preoculars 1-1, postoculars 2-2; temporals 1+2 (4), 1+1/1+2 (2); loreal 1-1; maxillary teeth varied from 22-24 (\bar{x} = 23.2), no diastema and all teeth subequal; LOA/tail ratios for males varied from .192-.204 (\bar{x} = .197), females .183, .187; maximum LOA for males 720 mm, females 901 mm.

Dorsal color pattern of juveniles and hatchlings consists of a light brown ground color with a dark brown, median stripe 7 scale rows wide, beginning at nape and extending to tail; dark brown spots present on scale rows 3 to 5; white supralabial stripe bordered above and below with chocolate brown edging extending from rostral to anterior one-fifth of body; faint evidence of black edged scales forming dim dark line from posterior one fifth of body to tail tip; throat and chin chocolate brown with scattered light spots and streaks; venter yellowish with dense chocolate brown bars on most ventrals; caudals yellow, without spotting; adults similar to juveniles except chin and throat with less dark marks and labial stripe fading at nape; dorsum more uniform brown with dark edged scales; no visible dark median stripe and no evidence of a dark lateral tail stripe; venter dark marks may be few to many.

Comments: Having examined the three syntypes of *Liophis purpurans*, it is apparent that the species does not occur within our study area. All references to *L. purpurans* from the upper Amazon are probably based upon specimens of *Liophis chrysostomus* (Cope). Unfortunately, the type of *L. chrysostomus* is lost, but Cope's (1868:104) description is detailed enough to associate the name with a population of snakes from the Iquitos region.

There are several differences between *L. purpurans* and *L. chrysostomus* as follows (*purpurans* data in parentheses): maxillary teeth 22 to 24, gradually increasing in size posteriorly and without a diastema (21-24, diastema present, last two teeth considerably enlarged); ventrals number 157-162 (142-158); caudals number 60-64 (46-51); no evidence of a light nuchal collar (present in all); dark edged scales forming obscure zig-zag line on posterior one-fifth of body and part of tail (dark chocolate brown stripe on 4th scale row on posterior part of body and continuing to tail tip); upper and lower edge of supralabials dark edged with white line from nostril to beyond nape (upper edge of supralabials dark edged, supralabials white to corner of mouth); throat chocolate brown with whitish streaks (throat white with genials dark edged); dense black marks in middle of ventrals (ventrals yellowish with some black marks on ventrals).

Until the final outcome of Mr. Allan Markezich's study of the *Liophis-Leimadophis* complex, we tentatively assign all specimens of snakes formerly known as *Liophis purpurans* from the upper Amazon, to *Liophis chrysostomus* (Cope).

Dunn (1922:219) described *Dromicus amazonicus* from a single specimen obtained from Santarem, Brazil. He was somewhat hesitant in his generic assignment but fairly sure of the species arrangement. Peters and Orejas-Miranda (1970:328) also stated that the generic arrangement of this species was very questionable. We have examined the holotype of *D. amazonicus* and find, with minor variation, that it represents a population of *Liophis chrysostomus*. All specimens of *L. chrysostomus* have light to heavy black checkering of the ventrals while *amazonicus* has none. However, the dorsal, lateral and lateroventral head, body and tail patterns are identical in specimens of equal size to the type of *amazonicus* (young juvenile). Squamative features are similar between the two forms except for the slightly higher number of caudal scales in the specimen of *amazonicus*.

We have observed similar color variations in populations of *Leimadophis reginae* and one might expect some geographic variation to occur between Iquitos and Santarem (i.e., *caudals*); we consider *Dromicus amazonicus* to be conspecific with *Liophis chrysostomus* and possibly a strict synonym of the latter.

Oxybelis aeneus (Wagler)

(TCWC 3). An arboreal species found in primary forest and forest edge situations. Centro Unión (1 ♂), Mishana (1, head and neck only), Paraiso (1 ♀). First record: Iquitos (Keiser, 1974).

Our single female taken in mid-August contained 4 oviducal eggs that ranged in size from 11.0 X 41.0 to 11.5 X 36.0 mm

(\bar{x} = 11.3 X 39.3). Sexton and Heatwole (1965) report a clutch of 4 eggs for this species from Panama. Our female is also the largest known individual for the species (LOA = 1,370 mm). Keiser (1974) gives a LOA of 1,220 mm as the largest female he examined.

Taxonomic data are: scale rows 17-17-13, smooth, without apical pits; anal plate divided; ventrals of male number 188, female 194; caudals of male number 165, female 163; preoculars 1-1; postoculars 2-2; temporals 1+2 loreal absent; supralabials 9-9; infralabials 9-9 (1), 9-10 (2); supralabials entering orbit 4+5+6; maxillary teeth vary from 21 to 25, without diastema, posterior two to three teeth enlarged and deeply grooved; LOA/tail ratio of male .389, female .383; maximum LOA of male 1,178 mm.

Color and color pattern similar to that described by Keiser (1974:36). The squamation of our specimens fall within the variation given for the species by Keiser (1974), except for the low number of caudals of our male specimen.

Oxybelis argenteus (Daudin)

(TCWC 26). A common arboreal snake found in all types of forest situations. Centro Unión (1♂, 3♀), Iquitos (1♂), Mishana (3♂, 1♀), Moropon (7♂, 9♀), Santa Maria (1♂). First record: Pebas (Cope, 1885). The majority of our series was taken from small trees, shrubs and saplings. One specimen was found on a fallen log in a banana grove and another on a tangle of vines along the edge of the primary forest. Two females, taken in November and June contained four and eight oviducal eggs, respectively, that ranged from 8 X 24 to 12 X 37 mm (\bar{x} = 10.1 X 31.0). Hatchlings and very young juveniles were present in the months of February, June, August, and October.

Taxonomic data are: scale rows 17-17-15 (25), 17-17-13 (1), smooth, without apical pits; anal plate divided; ventrals of males vary from 194-209 (\bar{x} = 201.4), females 204-214 (\bar{x} = 208.7); caudals of males vary from 180-197 (\bar{x} = 185.4), females 177-189 (\bar{x} = 181.4); preoculars 1-1; postoculars 1-1 (2), 1-2 (1), 2-2 (23); loreal 1-1 (3), absent (23); temporals 1+2 (24), 1+2/1+3 (2); supralabials 6-6; infralabials 6-7 (1), 7-7 (18), 7-8 (4), 8-8 (3); supralabials entering orbit, 4th (24), 4/4+5 (1), 4/5 (1); supralabials contacting prefrontals 2+3 (22), 2nd (3), 3rd/0 (1); maxillary teeth 18-20 (\bar{x} = 18.9), last two to three enlarged and deeply grooved, separated from remainder by diastema; LOA/tail ratios of males .370-.429 (\bar{x} = .404), females .362-.399 (\bar{x} = .386); maximum LOA of males 1,197 mm, females 1,213 mm.

Color in life: dorsum pinkish tan with a leaf green median stripe one scale row wide, beginning about level of 25th ventral and

continuing almost to tip of tail; two lateral leaf green stripes, generally present on 4th and 5th or 4th, 5th and 6th scale rows anteriorly, but present on 3rd scale row from about 45th to 50th ventral, to tip of tail; lateral stripe begins on tip of snout and passes through center of eye; top of head darker brown than dorsum; chin, throat and anterior part of venter (up to 50th ventral) lime green, forming one median and two ventrolateral leaf green stripes from 50th ventral to anal plate and below tail; interspace between ventral stripes pale white; ventral stripes become progressively darker green posteriorly; side of head and body to about 100th ventral creamy white; supralabials yellow with upper and lower edges somewhat lime green; iris whitish above and below with an anterior-posterior streak of dark bronze that coincides with lateral stripe of face.

Oxybelis fulgidus (Daudin)

(TCWC 6). An arboreal species associated with forest edge situations. Mishana (3 ♂, 2 ♀), Moropon (1 ♀). First record: this paper. This species is relatively rare in the Iquitos region. One specimen was found 1.5 mm up a small tree at the edge of a small forest stream. One stomach contained the remains of two passerine birds.

Taxonomic data are: scale rows 17-17-13, smooth, without apical pits; anal plate divided; ventrals of males vary from 197-204 (\bar{x} = 201.0), females 208-218 (\bar{x} = 212.0); caudals of males vary from 143-156 (\bar{x} = 150.0), female with complete tail 147; preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+2; supralabials 10-10 (5), 10-11 (1); infralabials 10-10 (3), 10-11 (1); 11-11 (2); supralabials entering orbit 5+6+7 (5), 6+7 (1); supralabials contacting prefrontals 2nd, 3rd, and 4th; maxillary teeth 19-23, last three to four enlarged, deeply grooved and a slight diastema present in one specimen; LOA/tail ratios of males .331-.336 (\bar{x} = .333), female .311; maximum LOA of males 1,620 mm, female 1,610 mm.

Dorsum and venter leaf green to dark green with venter always a slightly darker green; ventrals angular with white line along angle.

Oxyrhopus melanogenys (Tschudi)

(TCWC 1). An extremely rare species in the Iquitos region. Moropon (1 ♀). First record: this paper. Our single specimen was taken from beneath debris at the edge of a secondary forest.

Taxonomic data are: scale rows 19-19-17, smooth, two apical pits present, anal plate entire; ventrals number 201, caudal 67+; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 2+3; supra-

labials 8-9, infralabials 10-11; supralabials entering orbit 4+5; maxillary teeth 14, last two enlarged, grooved and separated from remainder by slight diastema; maximum LOA 599 mm (tail tip missing).

Top of head black, followed by orange nuchal collar, followed by black-yellow-black triad, followed by red band, then 10 triads (B-Y-B-Y-B) each separated by red bands; scales within red areas have black tipped scales; the red bands are more or less equal in width to the complete triad, at least posteriorly; tail with 6 triads; venter pale yellow anteriorly, pinkish posteriorly; black bands tend to pass onto ventrals but do not meet on midventral line; chin and anterior labials blackish; 17 scales in a line from the parietal notch to the posterior edge of the second black band.

Comments: The *O. melanogenys-trigeminus* complex is extremely confusing in the Iquitos region. Both species are usually recognized by their color patterns as variation in squamation of the two species overlaps to some degree. Since the color patterns of both species are extremely variable in the region the identifications for both species is tenable.

Oxyrhopus petola digitalis (Reuss)

(TCWC 13). A relatively small terrestrial snake found in primary and secondary forests. Centro Unión (2 ♂), Iquitos (1 ♂), Mishana (1 ♀), Moropon (5 ♂, 1 ♀), Paraiso (1 ♂), Santa Maria (2 ♀). First record: Pebas (Cope, 1870). Our series came from beneath fallen logs and crawling about on leaf litter of closed and semi-open canopy forests. Some of the individuals were active after dark. Hatchlings were found during the months of January, March and September. The stomach of one specimen contained the remains of an unidentified iguanid lizard.

Taxonomic data are: scale rows 19-19-17, smooth, two apical pits present; anal plate entire; ventrals of males vary from 207-219 (\bar{x} = 213.4), females 209-216 (\bar{x} = 213.5); caudals of males vary from 118-130 (\bar{x} = 122.4), females 102-116 (\bar{x} = 108.0); preoculars 1-1 (10), 1-2 (1), 2-2 (2); postoculars 2-2; loreal 1-1; temporals 2+2 (1), 2+3 (11), 2+3/2+4 (1); supralabials 8-8; infralabials 9-10 (1), 10-10 (8), 10-11 (2), 10-12 (1), 11-11 (1); supralabials entering orbit 3+4+5 (1), 4+5 (12); maxillary teeth 15, invariable, last two enlarged, grooved separated from remainder by diastema; LOA/tail ratios of males .257-.282 (\bar{x} = .272), females .234-.246 (\bar{x} = .239); maximum LOA of males 991 mm, females 365 mm.

Dorsum red and black banded, red bands vary from 10-16 (\bar{x} = 12.9) on body, 4-10 (\bar{x} = 7.6) on tail; light colored bands are occasionally orange; nuchal blotch and anterior part of first red band white; venter pale yellow; head black.

Oxyrhopus trigeminus Dumeril, Bibron and Dumeril

(TCWC 16). A terrestrial species found in secondary growths and forest edge situations. Iquitos (3 ♂, 1 ♀), Mishana (1 ♂, 4 ♀), Moropon (2 ♂, 4 ♀), Santa Maria (1 ♂). First record: this paper. All but one of our series was taken from secondary growths associated with "chacaras". One specimen was found DOR on a road near Iquitos. Hatchlings were taken in the months of January and August. One stomach contained the remains of two small rodents.

Taxonomic data are: scale rows 19-19-17, smooth, two apical pits present; anal plate entire; ventrals of males vary from 189-193 (\bar{x} = 191.2), females 198-209 (\bar{x} = 203.4); caudals of males vary from 84-94 (\bar{x} = 88.3), females 72-84 (\bar{x} = 77.2); preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+3 (2), 2+2 (2), 2+3 (10), 2+3/2+4 (2); supralabials 8-8 (15), 8-9 (1); infralabials 8-9 (1), 9-9 (4), 9-10 (2), 10-10 (9); supralabials entering orbit 4+5; maxillary teeth 13-14 (\bar{x} = 14.4), last two enlarged, grooved; with or without diastema; LOA/tail ratios of males .217-.254 (\bar{x} = .239), females .183-.224 (\bar{x} = .201); maximum LOA of males 761 mm, females 1,112 mm.

Top of head black, followed by orange red nuchal band, followed by yellow (occasionally white) and black bands more or less arranged in triads; triads separated by red bands (occasionally orange); yellow (white) band of triad frequently obscured by melanism in adults; light colored bands (red, yellow, or white) vary from 19-31 (\bar{x} = 23.9) tail 6-11 (\bar{x} = 9.1); venter and caudals pale yellow, with black bands of dorsum passing onto ventrals and frequently meeting along the midventral line; dorsal scales from parietal notch to posterior edge of second dark band vary from 23-36 (\bar{x} = 31.3).

Comments: See *O. melanogenys* account.

Philodryas viridissimus (Linnaeus)

(TCWC 2). An arboreal snake restricted to forest edge situations. Centro Unión (1 ♂), Mishana (1 ♀). First record: this paper. We suspect that this species may be a canopy dweller and only descends to lower levels to lay eggs. We have worked extensively at both localities for 8 years and have found only two individuals. It is possible that the species is a low level forest dweller and reaches its northern distributional limits in the Iquitos region, thus accounting for its rarity.

Taxonomic data are: scale rows 19-19-13, smooth, two apical pits present; anal plate divided (♂), entire (♀); ventrals of male number 209, female 211; caudals of males number 111, female 113; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+2;

supralabials 8-8; infralabials 12-12; supralabials entering orbit 4+5; maxillary teeth 14, 15, last two enlarged, grooved, separated from remainder by moderate diastema; LOA/tail ratio of male .262, female .264; LOA of male 650 mm, female 826 mm; ventrals angulate, caudals less so; hemipenis, sub-capitate, with divided sulcus.

Dorsum and venter leaf green in life; chin, throat and lips pale green.

Comments: This genus is currently under revision by Robert A. Thomas and the taxonomic position of the currently recognized races of *P. viridissimus* is not well understood.

Pseudoboa coronata Schneider

(TCWC 7). A terrestrial snake found in most forest situations. Iquitos (2 ♂), Mishana (1 ♀), Moropon (1 ♂, 3 ♀). First record: this paper. Most specimens were taken beneath fallen logs and root systems of large trees in primary and secondary forests. One was found in an open grassy field and another at the forest edge. Hatchlings were present in the months of February and October.

Taxonomic data are: scale rows 17-17-17, smooth, without apical pits; anal plate entire; ventrals of males vary from 182-196 (\bar{x} = 187.3), females 192-196 (\bar{x} = 194.0); subcaudals entire, varying from 99-107 (\bar{x} = 102.7) in males, 77-86 (\bar{x} = 83.5) in females; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+2 (2), 2+2 (1), 2+3 (1), 1+2/2+2 (2), 2+2/2+3 (1); supralabials entering orbit 3+4 (5), 3+4/4+5 (1), 3+4/3+4+5 (1); maxillary teeth 14-15 (\bar{x} = 14.7), last two greatly enlarged, deeply grooved, separated from remainder by diastema; LOA/tail ratios of males .269-.294 (\bar{x} = .278), females .233-.242 (\bar{x} = .239); maximum LOA of males 975 mm, females 1,076 mm.

Dorsum bright pinkish red in young and juveniles, becoming dull reddish to purple in older animals; young with black head followed by broad white nuchal collar; adults lack nuchal light collar; venter cream in young and slightly more yellow in adults.

Pseudoeryx plicatilis plicatilis X *p. mineticus*

(TCWC 8). A large aquatic snake found associated with flooded forests, forest lakes and streams. Centro Unión (1 ♀), Iquitos (1 ♂, 2 ♀), Mishana (1 ♂, 1 ♀), Moropon (1 ♂, 1 ♀). First record: this paper. This species is primarily nocturnal and has been captured swimming in shallow forest streams. One specimen was captured as it crawled up a hill from a small forest lake; its stomach contained a 150 mm fish. One hatchling was found on 30 May.

Taxonomic data are: scale rows 15-15-15, smooth without apical pits; anal plate divided (3), entire (5); ventrals of males vary from 144-151 (\bar{x} = 147.0), females 136-158 (\bar{x} = 150.8); caudals of males vary from 43-45 (\bar{x} = 44.0), females 35-38 (\bar{x} = 36.8); preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1 (3), 1+1/1+2 (2), 1+2 (4); supralabials 8-8; infralabials 8-8; supralabials entering orbit 3+4 (5), 4th/3+4 (2), 4th (1); maxillary teeth 14-15 (\bar{x} = 14.7), subequal; LOA/tail ratios of males .154-.171 (\bar{x} = .162), females .108-.122 (\bar{x} = .114); maximum LOA of males 826 mm, females 1,441 mm.

Dorsum olive green to olive brown with a double row of black spots from head to tail; a lateral black stripe present from snout to tip of tail; lateral dark stripe confined to upper one half of scale row one, all of rows two and three and lower one half of 4th scale row (on lower edge of fifth in one), from anterior one-third of body to level of vent; upper edge of dark lateral stripe coppery brown from nape to posterior one-third of body; dorsal surface of head darker brown than rest of body; labials dark chocolate brown with brownish yellow spots within the dark field; adults with yellowish venters, young with bright red venter; venter also has a series of chocolate brown spots along each side of ventrals from throat to vent; dark spots more dense on caudals.

Comments: Merten's (1965) description of *P. plicatilis ecuadorensis* (from an unknown Ecuador locality and based on one specimen) leaves much to be desired concerning the relationships of the Amazonian populations. Our series falls well within the variation exhibited by *P. p. mimeticus* except for the presence of the lateral dark band on the first scale row (absent in *mimeticus*) and absent from the fifth (present in *p. mimeticus*), and occasionally an entire anal plate (divided in *p. mimeticus*). Based on squamative characters, our series appears to represent intermediates between *p. plicatilis* and *p. mimeticus*, because the wide range of squamative characters encompasses both extreme and median ranges of both races. The color variation of our series also encompasses that exhibited by *ecuadorensis* in at least one or more specimens. As *ecuadorensis* is known only from one specimen and from an unknown Ecuador locality, we suspect it to represent one of the variational patterns exhibited by our series and propose that *ecuadorensis* be placed in the synonymy of *P. plicatilis mimeticus* since it appears to fall closer to the variation exhibited by that population.

Pseustes poecilonotus polylepis (Peters)

(TCWC 20). A semiarboreal species found in primary forest and forest edge situations. Centro Unión (3♂, 1♀), Mishana (4♂, 2♀),

Moropon (4 ♂, 5 ♀), Yanamono (1 ♀). First record: this paper. Most of our specimens were taken either from the forest floor or from small shrubs and trees within the forest. One specimen was taken from the nest of Spix's Guan (*Penelope jacquacu*) about four meters above the ground, and had eaten one of the eggs. Hatchlings were taken in the months of March, August and December.

Taxonomic data are: scale rows 21-23-15 (10), 21-22-15 (1), 21-21-15 (4), 21-23-13 (3), 21-22-14 (1), keeling faint in hatchlings and juveniles, eight rows distinctly keeled posteriorly in adults, two apical pits present; anal plate entire; ventrals angulate, varying from 190-205 (\bar{x} = 197.7) in males, 200-210 (\bar{x} = 204.8) in females; caudals of males vary from 119-130 (\bar{x} = 123.8), females 117-131 (\bar{x} = 123.0); preoculars 1-1; postoculars 1-1 (2), 2-2 (19); loreal absent (2), 1-1 (18); temporals 2+2 (16), 3+1 (1), 2+2/3+2 (1), 2+2/2+3 (2); supralabials 7-7 (2), 7-8 (4), 8-8 (10), 8-9 (1), 9-9 (3); infralabials 11-11 (2), 11-12 (2), 12-12 (5), 12-13 (3), 12-14 (1), 13-13 (4), 13-14 (2), 14-14 (1); supralabials entering orbit 4+5+6 (13), 3+4+5 (2), 3+4+5/4+5+6 (3), 4+5/5+6 (1), 5+6/4+5+6 (1); maxillary teeth 16-17, gradually increasing in length posteriorly; LOA/tail ratios of males .259-.302 (\bar{x} = .275), females .250-.276 (\bar{x} = .261); maximum LOA of males 1,527, females 1,632 mm, with part of tail missing.

Individuals greater than a LOA of 900 mm are usually uniform light brown to dark brown dorsally, while those less than 900 mm have light brown to grayish brown ground color with 26-31 narrow, dark brown to dark gray crossbands. Venter usually grayish white to light brown with posterior edge of each ventral slightly darker; paraventral scale row and outer edge of ventrals frequently reddish brown on anterior one-third of body, and frequently with more pigment along angular area of ventrals forming an obscure pair of ventral stripes; lips cream; head uniform brown.

Comments: This subspecies is wide ranging in the Amazon Basin and tends to have characteristics attributed to *P. sexcarinatus* of northeastern Brazil. The presence of ventral stripes, number of maxillary teeth, scale rows, ventrals, caudals and other squamate characters fall within the variation exhibited by both species. It is possible that *P. sexcarinatus* and *poecilonotus* are conspecific, but until further studies are complete we suggest that the name *poecilonotus* be retained for the Amazonian populations.

Pseustes sulphureus sulphureus (Wagler)

(TCWC 2). A semiarborescent snake found in secondary and primary forest situations. Centro Unión (1 ♂), Mishana (1 ♂). First record: this paper. Both specimens were taken from low shrubs

in forest edge situations; other ecological information is lacking for this species, and it appears to be extremely rare in the Iquitos region. When threatened, we have observed this species to inflate its throat and anteriormost part of the body.

Taxonomic data are: scale rows 19-19-13, all rows keeled except first row, two apical pits present; anal plate entire; ventrals 210, 214; caudals 134, 137; preoculars 1-1; postoculars 3-3; subocular absent; loreal 1-1; temporals 1+2; supralabials 8-8; infralabials 10-11; supralabials entering orbit 4+5; LOA/tail ratios .266, .214; maximum LOA 1,594 mm.

Dorsum ground color grayish brown to light brown with 27 to 29 dark brown crossbands that are very narrow anteriorly, and very wide posteriorly; as the bands pass anterior to posterior along the body and become wider, a light brown spot appears within the band, eventually extending laterally and splitting the wide band into two obscure dark bands; light interspaces tend to have a dark spot within the light area dorsally, eventually extending laterally towards the posterior part of the body and forming another narrow brown band within the interspace; head and anterior part of neck brown, becoming darker brown posteriorly; ventrals light tan at the level of throat, becoming heavily pigmented with dark brown posteriorly; caudals entirely dark brown.

Rhadinaea brevirostris (Peters)

(TCWC 16). A relatively common terrestrial snake found in most vegetative habitats of the region. Centro Unión (5 ♂), Moropon (9 ♂, 2 ♀). First record: Pebas (Günther, 1868). Additional records: Requena (Myers, 1974). The majority of our series came from leaf litter and debris of the forest floor and associated cultivated fields. An adult female (LOA = 336 mm) taken in August contained two shelled, oviducal eggs that measured 5.1 X 24.1 mm and 5.5 X 24.7 mm. The stomach of one adult male from Moropon contained an adult microteiid (*Ptychoglossus brevifrontalis*).

Taxonomic data are: scale rows 17-17-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 149-167 (\bar{x} = 158.3), females 160, 161; caudals of males vary from 51-58 (\bar{x} = 54.5), females 54, 55; preoculars 1-1 (14), 1-2 (1), 2-2 (1); postoculars 2-2; loreal 1-1; temporals 1+2; supralabials 8-8; infralabials 8-8 (3), 9-9 (13); supralabials entering orbit 3+4+5; maxillary teeth 15-17 (\bar{x} = 16.1); LOA/tail ratios of males .209-.239 (\bar{x} = .221), females .209, .217; maximum LOA of males 370 mm, females 336 mm.

For excellent color notes on the species, see Myers (1974:204).

Comments: The squamation of our series falls within the variation exhibited by Ecuadorian populations rather than with those from Peru. Most of Myers' (1974) Peruvian material came from east central Peru, some 200-400 km south of our study area, where several rivers and deep valleys bisect part of the Amazonian drainage. From data on other groups of reptiles (Dixon, 1973, 1974) there may be some restriction of gene flow between the northwestern Peru-southern Ecuador population and that of central Peru.

Myers (1974:206) discussed the head coloration of several individuals from Peru, indicating that there may be a geographic trend from light colored heads in Colombia and northern Peru to dark heads in central Peru. Our entire series came from within a 50 km radius of Iquitos and five have dark heads, five have light heads, and six are intermediate, thus confirming the possibility of geographic trends from north to south, or, considerable amount of nongeographic variation in head color.

Rhadinaea occipitalis (Jan)

(TCWC 6). A relatively small species of terrestrial snake found in debris and leaf litter of secondary and primary forests. Centro Unión (5 ♂, 1 ♀). First record: this paper.

Taxonomic data are: scale rows 15-15-15 or 15-15-13, smooth, without apical pits; anal plate divided; ventrals of males vary from 176-179 (\bar{x} = 177.2), female 163; caudals of males vary from 76-78 (\bar{x} = 76.8), female 74; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+2 (5), 2+2 (1); supralabials 8-8; infralabials 8-8, 8-9 (1), 9-9 (3); supralabials entering orbit 3+4+5; maxillary teeth 15-17 (\bar{x} = 15.8); LOA/tail ratios of males .259-279 (\bar{x} = .269), female .264; maximum LOA of males 532 mm, female 360 mm.

For an excellent color description and photograph see Myers (1974:210).

Comments. This species is relatively uncommon in the Iquitos region. Myers (1974:209) gives an excellent description of the species from its known range. The number of ventrals of our female (163) differs considerably from the range of variation given by Myers (179-192), although Prado (1945) indicated the range of variation to be 160-194. Our largest male (532 mm) exceeded the known range of LOA (504 mm) presented by Myers (1974:209).

Rhinobothryum lentiginosum (Scopoli)

First record: Pebas (Cope, 1875). We have not seen specimens of this species from the Iquitos region, nor has any additional specimens been collected from the region following Cope's 1870 report of its presence.

This species is basically a black and red banded snake with black head shields that are edged in white. The dorsal scales are strongly keeled but somewhat smooth laterally; dorsal scale rows vary from 19 to 21 at midbody; ventrals vary from 245 to 278; caudals from 114 to 120; and the anal plate is divided.

Siphlophis cervinus (Laurenti)

(TCWC 2, USNM 1). A relatively rare snake in the region found in secondary and primary forest situations. Five km NNE Iquitos (2 ♂), Rio Momon (1 ♀). First record: Pebas (Cope, 1885). One specimen was found DOR on a paved road between Iquitos and the Rio Nanay Naval Station. Another specimen was found at the base of a large tree in the primary forest, and another in young secondary growth.

Taxonomic data are: scale rows 19 (18)-19-15, smooth, without apical pits; anal plate entire; pupil vertical; ventrals number 234, 240 ♂♂; 252 ♀; caudals number 113, 116 ♂♂, 111 ♀; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 2+3; supralabials 8-8 (2), 9-9 (1); infralabials 9-9 (4th and 5th much enlarged); supralabials entering orbit 3+4+5 (2), 4+5+6 (1); maxillary teeth 17, last two enlarged, grooved, separated from remainder by diastema; LOA/tail of ♂ .255, of ♀ .244; maximum LOA of males 615 mm, females 750 mm.

Head red with black edged scales and black punctuations scattered throughout; nape red, followed by black collar; remainder of body with 59 to 68 black chevrons that may or may not be evenly distributed over the body; tail similar to dorsum; venter yellow with dorsal chevrons occasionally meeting across the venter; each dorsal chevron separated from the other by white interspaces with black tipped scales.

Spilotes pullatus pullatus (Linnaeus)

(TCWC 10). A large arboreal species found in every habitat of the Iquitos region. Centro Unión (1), Indiana (1), Iquitos (1 ♂, 1 ♀), Mishana (1 ♀), Moropon (2 ♂, 1 ?), Santa Maria (1 ♀), Yanamono (1 ♀). First record: Iquitos (Carrillo de Espinoza, 1970). This species has been taken from the ground and in saplings and shrubs, orchard trees, and swimming in rivers. Very young juveniles were taken in the months of March, July and December.

Taxonomic data are: scale rows 12(14)-14(17)-10(12); keeled, with two apical pits; anal plate entire; ventrals of males vary from 221-226, females 226-232 (\bar{x} = 229.3); caudals of males vary from 117-124, females 107-114 (\bar{x} = 111.3); preoculars 1-1; postoculars 2-2; loreal 0-1 (2), 1-1 (8); temporals 1 (1), 1/1+1 (2), 1-1 (5), 1+1/1+2 (2); supralabials 6-6 (1), 6-7 (1), 6-8 (1), 7-7 (6), 8-8 (1); infralabials 8-8 (4) 8-9 (1), 9-9 (2), 9-10 (1), 10-10 (1), 10-11 (1); supralabials entering orbit 3+4 (8), 3+4/4+5 (2); maxillary teeth 19-21 (\bar{x} = 20.5), decreasing in size posteriorly; LOA/tail ratios of males .234, .238, females .221-.225 (\bar{x} = .223); maximum LOA of males 610 mm, females 2,170 mm, with one-half of tail missing.

Body with yellow and black bands; anterior yellow bands diffuse with black streaks; posterior one-half of body with more black than yellow, tending to make anterior one-half of body appear lighter in color; ventrals yellow anteriorly with outer edge of venters black edged; venter becomes yellow and black banded posteriorly; snout yellow with black edged scales; top of head mostly black; juveniles with thin yellow, nuchal collar (absent in adults); lips yellow with black-edged scales.

Tantilla melanocephala melanocephala (Linnaeus)

(TCWC 15). A small, semifossorial snake found associated with cultivated fields and old secondary forests. Centro Unión (6 ♂, 1 ♀), Mishana (3 ♂, 1 ♀), Moropon (2 ♂, 2 ♀). First record: this paper. One young juvenile male was taken in June. One of four females contained oviducal eggs. The latter female was taken in November and contained three eggs that measured 7 X 26 mm, 7 X 27 mm and 7 X 29 mm.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 136-145 (\bar{x} = 140.5), females 142-153 (\bar{x} = 147.8); caudals of males vary from 41-52 (\bar{x} = 49.2), females 45-48 (\bar{x} = 46.3); preoculars 1-1; postoculars 1-2 (1), 2-2 (14); loreal absent; temporals 1+1 (11), 1+2 (2), 1+1/1+2 (2); supralabials 7-7; infralabials 6-6 (6), 6-7 (2), 7-7 (7); supralabials entering orbit 3+4; maxillary teeth 18 to 19, last two enlarged, grooved, separated from remainder by diastema; LOA/tail ratios of males .192-.235 (\bar{x} = .221); females .199-.220 (\bar{x} = .207); maximum LOA of males 322 mm, females 345 mm; postnasal in contact with preocular in 60% of sample; 1st pair of chinshields in medial contact behind mental in 26.7% of sample; frontal scale less than twice as long as wide in 100% of sample.

General ground color brown to grayish brown; median black line from dark nuchal collar to tip of tail; nuchal collar 4 scale

rows in length, bordered anteriorly and posteriorly by cream to yellowish bands that may or may not be complete; each scale of cream band usually edged with black or dark brown; a wide blackish brown lateral line (2.5 scale rows in width), edged with black, extending from nuchal collar to tip of tail; lateral dark line bordered above by cream to tan dorsolateral line (1.5 scale rows wide); ventrals and caudals white; top of head brown, with red spot from behind eye to edge of supralabials.

Thamnodynastes cf. pallidus (Linnaeus)

(TCWC 1, USNM 1). A rare, semiarboreal species restricted to the primary forest. Iquitos (1 ♂), Mishana (1 ♀). First record: this paper. One specimen came from beneath the bark of a standing dead log in the closed canopy forest, the other from a porch in Iquitos.

Taxonomic data are: scale rows 17-17-13 or 17-17-11, smooth, without apical pits; anal plate divided; ventrals number 139, 140; caudals 100, 101; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 2+1/2+2 or 2+3; supralabials 8-8; infralabials 9-9; supralabials entering orbit 4+5; maxillary teeth 18, 21, last two enlarged, grooved, separated from remainder by diastema; LOA/tail ratio .333, .343, LOA 439 mm.

Dorsal ground color pinkish tan with a series of nine irregular, brown bands on nape and anterior one-fifth of body; body bands reduce to a series of irregular shaped spots on middle of body, absent on posterior one-fourth of body; head brownish with dark brown spots scattered throughout; dark brown stripe present from eye to posterior angle of jaw; another below eye to lower edge of supralabials; throat and chin tan, with a few scattered dark brown spots; remainder of venter dark brown with large, obscure blackish brown spots scattered throughout.

Tripanurgos compressus (Daudin)

(TCWC 7). An arboreal species restricted to the closed canopy forest. Mishana (1 ♂, 1 ♀), Moropon (3 ♂, 1 ♀), Santa Maria (1 ♂). First record: this paper. Our specimens were found on the forest floor, on saplings, and on fallen logs. One specimen was taken from a log within a aguajal swamp. One hatchling was taken in the month of March.

Taxonomic data are: scale rows 19-19-15, smooth, two apical pits; anal plate entire; ventrals of males vary from 231-241 (\bar{x} = 236.6), females 237, 246; caudals of males vary from 106-117 (\bar{x} = 111.1); females 105, inc; preoculars 1-1; postoculars 1-2 (1), 2-2

(5), 2-3 (1); temporals 2+3; loreal 1-1; supralabials 8-8; infralabials 9-9; supralabials entering orbit 4+5; maxillary teeth 13-16 (\bar{x} = 14.0), last two enlarged, grooved, separated from remainder by diastema; LOA/tail ratio of males .219-.243 (\bar{x} = .233), females .215; maximum LOA of males 836 mm, females 852 mm (with part of tail missing).

Dorsum red and black banded, black bands vary from 36 to 48, all extremely narrow except for the nape band; nape band usually 12-19 (\bar{x} = 14.9) scale rows in length; head dark reddish brown to black in adults, bright red in hatchling; venter reddish to pinkish orange.

Xenodon rabdocephalus rabdocephalus (Wied)

(TCWC 28). A moderate sized, toad eating species found in secondary and primary forest situations. Centro Unión (5 ♂, 2 ♀), Mishana (8 ♂, 4 ♀), Moropon (2 ♂, 6 ♀), Santa Maria (1 ♀). First record: Pebas (Cope, 1870). All of our specimens came from the forest floor. Two females, taken in the months of December and June, contained 8 and 6 eggs respectively. One hatchling was found in the month of May. Only three of 28 stomachs contained food items; two contained the remains of the toad, *Bufo typhonius*, and one contained an *Eleutherodactylus* sp.

Taxonomic data are: scale rows 19-19-15, smooth, one apical pit; anal plate entire; ventrals of males vary from 134-147 (\bar{x} = 139.8), females 138-150 (\bar{x} = 143.0); caudals of males vary from 36-50 (\bar{x} = 42.5), females 36-43 (\bar{x} = 39.0); preoculars 1-1 (11), 1-2 (8), 2-2 (6), 2-3 (2), 3-3 (1); postoculars 2-2 (24), 2-3 (2), 3-3 (2); loreal 1-1 (27), 1-2 (1); temporals 1+2 (11), 1+3 (10), 1+4 (1), 1+2/1+3 (5), 1+3/2+3 (1); supralabials 8-8; infralabials 9-9 (6), 9-10 (2), 10-10 (17), 11-11 (3); supralabials entering orbit 4+5; maxillary teeth 15-19 (\bar{x} = 15.8), last two enlarged, grooved, separated from remainder by diastema; LOA/tail ratios of males .130-.193 (\bar{x} = .163), females .132-.152 (\bar{x} = .143); maximum LOA of males 750 mm, females 875 mm.

Four color phases of adults, either 13-18 (\bar{x} = 14.7) brown or black bands on a light brown to dark brown ground color; or, uniform brown or black phase without bands; tail bands, when present, vary from 3-6 (\bar{x} = 4.0).

Comment. The banded color phases so closely resembles that of the common poisonous snake, *Bothrops atrox*, that the local populace believes this species to be extremely poisonous.

Xenodon severus (Linnaeus)

(TCWC 18). A toad eating snake commonly found in open fields and semi-open canopy situations in secondary forests.

Centro Unión (1 ♂, 1 ♀), Iquitos (1 ♂, 3 ♀), Mishana (2 ♂, 1 ♀), Moropon (4 ♂, 4 ♀), Santa Maria (1 ♀). First record: this paper. Our specimens came from a variety of habitats: grassy fields, river banks, shallow flooded fields, open secondary forests and cultivated fields. One adult female laid 19 eggs on 5 November and hatchlings were present in the months of January, February, April and July. Stomach contents consisted primarily of the remains of the frog genera *Letodactylus* and *Eleutherodactylus*, and the toad, *Bufo typhonius*. One stomach contained a large, black aquatic beetle.

Taxonomic data are: scale rows 21-21-17, smooth, one apical pit; anal plate divided; ventrals of males vary from 131-138 (\bar{x} = 133.1), females 134-141 (\bar{x} = 137.1); caudals of males vary from 36-41 (\bar{x} = 38.7), females 33-37 (\bar{x} = 35.5); preoculars 1-1; postoculars 2-2 (17), 3-3 (1); loreal 1-1; temporals 1+2 (16), 1+2/1+3 (2); supralabials 8-8; infralabials 10-11 (1), 11-11 (16), 11-12 (1), supralabials entering orbit 4+5; maxillary teeth 14-15 (\bar{x} = 14.8); last two enlarged, grooved, separated from remainder by diastema; LOA/tail ratios of males .126-.160 (\bar{x} = .136), females .120-.136 (\bar{x} = .128); maximum LOA of males 900 mm, females 995 mm.

Several color phases; dorsum yellowish brown with large irregular black blotches, dorsum black with irregular crossbands of yellowish brown; dorsum uniform greenish yellow; dorsum black with or without irregular yellowish brown spotting; body blotches, when present, vary from 6-9 (\bar{x} = 8.3); tail spots 2-3 (\bar{x} = 2.3); venter cream.

Xenopholis scalaris (Wucherer)

(TCWC 2). A relatively small, secretive species restricted to the primary forest floor. Centro Unión (1 ♀), Santa Maria (1 ♂). First record: Nauta (Cope, 1874). Our male specimen came from the leaf litter of the forest floor and a hatchling female was taken 22 November from beneath a fallen log.

Taxonomic data are: scale rows 17-17-17, smooth, without apical pits; anal plate entire; ventrals of male number 143, female 137; caudals of male number 33, female 32; preoculars 1-1; postoculars 2-2; loreal 1-1; temporals 1+2 (1), 1+1/1+2 (1); prefrontals fused; supralabials 7-8 (1), 8-8 (1); infralabials 7-7 (1), 8-8 (1); supralabials entering orbit 3+4 (1), 4+5 (1); maxillary teeth 17, last two enlarged, grooved, separated from remainder by diastema; LOA/tail ratio of male .152, female .164; LOA of male 329 mm, females 122 mm.

Ground color reddish brown with a brick red vertebral stripe extending from nape to tail; each side of body with 23 to 29 black bands that are opposite or alternating with those of the

opposite side and split by the red vertebral line; bands may appear to fuse dorsally but obscured by vertebral line; 6 to 9 similar bands on tail; each scale within ground colored areas edged with black within ground color interspaces; thin horizontal dark brown bar extending across posterior edge of parietals and united with first dorsal spot; head reddish brown with fine darker vermiculations; upper edge of supralabials edged with dark brown; lower lips, chin, throat and venter cream.

Bothrops atrox (Linnaeus)

(TCWC 86). The most common poisonous snake of the region and present in nearly all habitat situations. Centro Unión (9♂, 10♀), Indiana (1♂, 1♀), Iquitos (1♂, 1♀), Mishana (14♂, 9♀), Moropon (16♂, 15♀), Paraiso (1♂, 1♀), Santa Maria (1♂, 4♀), Yanamono (1♂, 1♀). First record: Napo and upper Marañon (Cope, 1868). Additional records: mouth of Rio Napo (Cope, 1875), Pebas (Cope, 1885). Our specimens have been taken from fallen logs and debris in clearings, orchards, young and old secondary growths and primary forest; occasionally specimens were found in trees, shrubs and saplings. Most of the adult animals were found on the ground while many of the juveniles were found in small shrubs and trees.

Young individuals were found to feed upon centipedes (*Scolopendra* sp.), toads (*Bufo typhonius*), and lizards (*Gonatodes humeralis*, *Mabuya mabouya*, *Arthrosaura reticulata* and *Kentropyx pelviceps*); adult stomachs contained various kinds of rodents. One adult female (LOA 1,252 mm) taken in September contained 17 well developed embryos (3♂, 14♀), that ranged from 161 to 205 mm LOA. Another female taken in July contained 22 developing embryos that averaged about 100 mm LOA. Fitch (1970) indicates that the majority of young are born between the months of August and September and numbers of young vary from 8 to 17.

Taxonomic data. There is considerable variation and sexual dimorphism in the Iquitos population of *B. atrox*. The data have been treated by sex and summarized in Table 2.

The general color pattern consists of various shades of brown with 13 to 21 (usually 17-18) rectangular or trapezoid body bands that may or may not unite middorsally; the bands are usually a darker shade of brown than the ground color with either one or two dark brown areas within the upper edge of the band and two within the lower edge of the band; head usually brownish with an obscure dark brown postocular stripe; ventrals and caudals dusky; young with distal one-half of tail yellow or yellowish orange.

| CHARACTER | MALES (N = 44) | FEMALES (N = 42) |
|--------------------|--|--|
| *Ant. Scale Rows | 22-27 (24.3) 1.1 | 23-29 (25.8) 1.4 |
| *Mid. Scale Rows | 23-27 (24.6) .87 | 24-29 (26.2) 1.2 |
| *Pos. Scale Rows | 19-21 (20.0) .97 | 19-23 (20.7) 1.2 |
| *Ventrals | 187-203 (194.6) 4.4 | 191-209 (197.8) 4.4 |
| *Caudals | 65-75 (71.2) 2.4 | 57-72 (65.1) 3.5 |
| *Tail/LOA Ratio | .136-.169 (.153) .74 | .122-.147 (.136) .64 |
| *Interoculars | 3-8 (6.6) .97 | 6-9 (7.3) .81 |
| Preoculars | 2-2 (in all) | 2-2 (in all) |
| Postoculars | 2-2(30), 2-3(2), 3-3(3) | 1-2(1), 2-2(30), 2-3(3), 3-3(4) |
| Suboculars | 1-1(29), 1-2(4), 2-2(1), 2-3(1) | 1-1(37), 1-2(1), 2-2(1) |
| Supraoculars | Large in all | Large in all |
| Supralabials | 7-7(32), 7-8 (3), 8-8(9) | 7-7(34), 7-8 (2), 8-8(1) |
| Infralabials | 8-9(2), 8-10(1), 9-9(14) 9-10(8), 10-10(10), 10-11(1) 11-11(9) | 8-9(2), 9-9(6), 9-10(8), 10-10(17), 10-11(3), 11-11(1) |
| Internasal Contact | Yes (22), no (15) - (59.4%) | Yes (35), no (4) - (89.7%) |
| Max, LOA (mm) | 1,257 | 1,388 |
| Anal Plate | Entire (in all) | Entire (in all) |
| Postocular Stripe | Present (in all) | Present (in all) |

Table 2. Sexual variation in *Bothrops atrox* from the Iquitos region, Peru. For standard counts and measurements (*) numbers in parentheses represent the mean, immediately followed by the standard deviation.

Bothrops bilineatus smaragdinus Hoge

(TCWC 11). A relatively small, arboreal viper associated with old secondary and primary forest situations. Centro Unión (2 ♂, 3 ♀), Mishana (1 ♂, 4 ♀), Moropon (1 ♂). First record: Pebas (Cope, 1870). Our entire series was taken from small trees, shrubs and saplings along forest trails, edges of creeks and fields. Stomach contents included the tree frog genera *Osteocephalus* and *Hyla*, small birds and mammals. One female captured in June contained four oviducal eggs that showed no embryonic development. The eggs ranged in size from 12.5 to 15.0 mm by 9.5 to 12.0 mm. Campbell (1973) observed four eggs in a female captured in January from the Iquitos region that showed no embryonic growth.

Taxonomic data are: scale rows 27-(23-29, \bar{x} = 26.5)-(17-20, \bar{x} = 19.1), keeled, no apical pits; anal plate entire; ventrals of males vary from 190-204 (\bar{x} = 196.0), females 194-206 (\bar{x} = 197.3); caudals of males vary from 67-73 (\bar{x} = 69.5), females 58-73 (\bar{x} = 64.9); preoculars 2-2; postoculars 2-2 (9), 2-3 (2); supralabials 7-7 (8), 8-8 (2), 9-9 (1); infralabials 9-9 (2), 10-10 (4), 10-11 (1), 11-11 (3), 11-12 (1); postocular stripe faintly present; internasals in contact (100%); 2nd supralabials entering facial pit scale; scales between supraoculars 5-9 (\bar{x} = 6.2); LOA/tail ratios of males .140-.149 (\bar{x} = .145), females .111-.149 (\bar{x} = .135); maximum LOA of males 573 mm, females 737 mm.

Dorsum and head light green to bright green, with small black spots scattered throughout, but frequently concentrated on the upper anterior part of the dorsum; first scale row of body yellow, forming a continuous paraventral line from throat to tip of tail; chin and throat yellow; ventrals and caudals yellow except for extreme outer edge of ventrals, which are green.

Bothrops brazili Hoge

(TCWC 3). A relatively rare viper found only in the primary forest. Centro Unión (1 ♂, 2 ♀). First record: this paper. Our specimens represent the first records for Peru and were taken from leaf litter situations of the forest floor. The stomach of the adult contained a rodent belonging to the family *Echimyidae* and a juvenile had eaten a lizard, *Alopoglossus atriventris*. A very young individual was captured in the month of January.

Taxonomic data are: scale rows 27-25-20 (♀), 27-25-19 (♂), keeled, without apical pits; anal plate entire; ventrals of male number 180, females 181; caudals of male number 59, females 50, 51; preoculars 2-2; postoculars 2-2 (2), 2-3 (1); supralabials 8-8; infralabials 10-10 (1), 11-11 (1), 12-12 (1); scales between supra-

oculars 7-8 (\bar{x} = 7.3); internasals in medial contact (66.6%), 2nd supralabial bordering facial pit; postocular stripe faint; LOA/tail ratio of male .134, females .118, .127; maximum LOA of male 910 mm, females are juveniles.

Ground color brown with 17 to 18 dark brown triangular body bands in the shape of an "A", whose apex may or may not coalesce mediodorsally; sides and apex of triangle have dark edged scales while the center and bottom have scattered dark edged scales; usually one to two small dark brown spots ventrolaterally between adjacent triangles; venter and caudals dusky; a faint light postocular stripe; dark postocular stripe absent in this species.

Bothrops castelnaudi Dumeril, Bibron and Dumeril

(TCWC 2). A relatively rare viper found in the primary forest. Centro Unión (1 ♂), Moropon (1 ♀). First record: this paper. Our specimens were found along the primary forest trail near a clearing. One was taken from the forest floor, the other from a small shrub. The stomach of the adult contained the remains of a marsupial mammal.

Taxonomic data are: scale rows 27-27-21, keeled, anal plate entire; ventrals of male number 243, female 238; caudals of male number 81, female 80; preoculars 2-2; postoculars 3-3; scales between supraoculars 3, 5; supralabials 7-7; infralabials 11-11; 2nd supralabials bordering facial pit; internasals in medial contact (100%); LOA/tail ratio of male .145, female .143; maximum LOA of male 1,110 mm, females 434 mm.

Ground color greenish olive, occasionally yellowish; with 27 to 28 dark brown, rectangular body blotches (usually higher than wide) positioned so that they occasionally alternate with the blotch on opposite side; blotches are divided vertically and horizontally by fine, bright green or yellow lines; a vertical series of small dark brown, secondary spots between the primary blotches; upper surface of head with dark brown, round spots, curving bars and combinations of both; postocular stripe present, usually well defined; labials and part of ventrals dusky brown with small spots of bright green and yellow which extends onto the second row of dorsal scales.

Bothrops hyoprurus Amaral

(TCWC 3). A small species of viper found in secondary and primary forest situations. Centro Unión (1 ♂, 1 ♀), Moropon (1 ♀). First record: this paper. Our specimens came from the forest floor near the vicinity of water. The stomach of one of the specimens (small male) contained a lizard, *Alopoglossus atriiventris*. Nicéforo (1938) found a rodent, *Zygodontomys* sp., in the stomach of an adult female.

Taxonomic data are: scale rows 25(27)-32(17)-17(19), keeled, anal plate entire; ventrals of male number 129, females 130, 131; caudals of male number 47, females 46, 48; preoculars 2-2; postoculars 2-2; internasals in contact (33.3%); no supralabials contacting facial pit; keel of scale shorter than scale; scales between supraoculars 8-9 (\bar{x} = 8.3); supralabials 7-7 (2), 8-8 (1); infralabials 9-9 (2), 10-11 (1); LOA/tail ratio of male .174, females .133, .152; maximum LOA of male 384 mm, females 675 mm.

Ground color dusky yellow or grayish tan with 18 to 19 dark brown trapezoidal (occasionally rectangular) blotches on each side of body, blotches may be opposite or alternating; blotches may be wider or more narrow than ground color interspaces; anteriorly, the lower anterior and posterior edges of blotches with a small chocolate brown spot; posteriorly, the small spots merge with the dark edge of each blotch and are somewhat obscure; lips, chin, throat and venter ivory, with some areas of ventrals somewhat dusky brown.

Lachesis muta muta (Linnaeus)

(TCWC 1, PS 3). The largest of the vipers and found in secondary and primary forest situations. Iquitos (2 skins, sex unknown), Mishana (1 skin, sex unknown), Moropon (1 ♀, head and tail). Two complete specimens (Iquitos, 1 ♂; Puerto Almendras, Rio Nanay, sex unknown) were also examined. First record: this paper. All specimens were taken at night, three were found on forest trails, one in secondary growth and one from a grassy field near a village. The local natives indicate that this species spends the daylight hours under fallen trees, in hollows at the base of trees and in other underground holes. Fitch (197) indicates that this species lays 12 eggs but the reproductive season is not known. Carrillo de Espinoza (1970) states that the stomachs she examined contained mammals, birds and amphibians.

Taxonomic data are: scale rows 35(39)-35(38)-24(27), (39)-35(38)-24(27), keeled, anal plate entire; ventrals of male 225; caudals of male 37, followed by 13 transverse rows of very small pointed scales. In the entire series examined the range of ventrals is 215-228, caudals 33-37, followed by 13-14 transverse rows of small pointed scales in two specimens with complete tails; preoculars 2-2; postoculars 2-2; scales between supraoculars 12 to 15; 4 to 5 rows of scales between orbit and supralabials; second supralabial bordering facial pit; supralabials 9-9; infralabials 14-14; maximum LOA of complete specimens 2,460 mm, largest skin with head and tail incomplete, 2,670 mm.

Ground color yellowish tan with a rose tint; dorsum with 30 to 32 large, dark brown to blackish rhomboidal blotches along

the vertebral line, more or less forming inverted triangles laterally; blotches frequently dark edged with light centers; 4 to 6 tail bands more bold than those of the dorsum; dorsal surface of head yellowish tan, with a few small, brown spots; postocular stripe usually distinct, bordered above by yellowish white line; venter ivory.

Micrurus filiformis subtilis Roze

(TCWC 7). A small very slender coral snake found around human habitation. Centro Unión (2 ♂), Iquitos (1♂, 1♀), Mishana (3 ♂). First record: this paper. All of our specimens except one were found in cracks of walls and floors and among debris on the ground around human habitation. This species is nocturnal and rarely seen during the day above ground. One specimen was taken from the stomach of a crocodilian, *Paleosuchus trigonatus*. Stomachs contained the remains of small invertebrates.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 270-282 (\bar{x} = 277.2), female 300; caudals of males vary from 33-35 (\bar{x} = 34.0), female 30; preoculars 1-1; postoculars 1-1 (1), 1-2 (2), 2-2 (4); loreal absent; temporals 1+1; supralabials 7-7; infralabials 6-6 (4), 7-7 (3); supralabials entering orbit 3+4; gulars preceding ventrals 3-5 (\bar{x} = 4.2); LOA/tail ratios of males .064-.073 (\bar{x} = .069), female .057; maximum LOA of males 595 mm, female 282 mm.

Pattern of 14-17 (\bar{x} = 15.7) triads consisting of three wide black rings separated by very narrow yellow rings; each triad separated from the next by broad red ring that is generally equal in width to central black ring of triad; two similar triads on tail; snout black, followed by white band across prefrontals, followed by black band to anterior one-third of parietals, followed by red band to 3rd or 4th scale row behind parietals.

Micrurus hemprichii ortonii Schmidt

(TCWC 6). A coral snake found only in the primary forest. Centro Unión (1 ♀), Mishana (3 ♂, 1 ♀), Moropon (1 ♂). First record: Pebas (Schmidt, 1953A). All of our specimens were taken from leaf litter of the forest floor. Our females were not gravid, but Schmidt (1953A) examined a female with two oviducal eggs that measured 7 X 25 mm. The stomach contents of one of our specimens consisted of two arthropods, *Peripatus* sp. (Onychophora).

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate entire; ventrals of males vary from 177-185

(\bar{x} = 181.0), females 178, 179; caudals of males vary from 29-31 (\bar{x} = 30.0), females 23, 24; preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1; gulars preceding ventrals 2-4 (\bar{x} = 3.0); supralabials 7-7; infralabials 7-7; supralabials entering orbit 3+4; LOA/tail ratios of males .090-.098 (\bar{x} = .093), females .083, .093; maximum LOA of males 882 mm, females 566 mm.

Pattern consists of 5-6 (\bar{x} = 5.3) body triads of extremely wide black rings separated by narrow white rings, each triad separated by narrow orange rings; one triad on tail; top of head from snout to posterior edge of parietals black, followed by red area from behind eyes, edge of parietals, to one to three scale rows behind parietals.

Micrurus langsdorffi langsdorffi Wagler

(TCWC 14, PS 5). A small coral snake found in most habitats of the Iquitos region. Iquitos (1 ♂), Mishana (5 ♂, 4 ♀), Moropon (5 ♂, 4 ♀). First record: Napo and Marañon (Cope, 1868). Additional records: Pebas (Günther, 1868). Iquitos, Rio Nanay Basin (Soini, 1974). Our specimens came from leaf litter or debris of the primary forest, open and semiopen secondary forests, cultivated fields and forest edge situations. The digestive tracts contained the remains of colubrid snakes.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 202-209 (\bar{x} = 205.7), females 219-229 (\bar{x} = 224.5); caudals of males vary from 46-56 (\bar{x} = 48.5), females 32-37 (\bar{x} = 33.8); preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1 (17), 1+2 (2); gulars preceding ventrals 2-4 (\bar{x} = 3.0); supralabials 7-7; infralabials 7-7; supralabials entering orbit 3+4; LOA/tail ratios of males .136-.165 (\bar{x} = .150), females .079-.097 (\bar{x} = .086); maximum LOA of males 685 mm, females 761 mm.

Pattern consists of red rings alternating with yellow, brown or black rings (three color phases) separated dorsally by transverse rows of white specks and ventrally by narrow white cross bars; body rings vary from 18-44 (\bar{x} = 32.3), tail rings 5-11 (\bar{x} = 7.7); of the three color phases, we have two specimens with black rings, three with brown rings, and fifteen with yellow rings; all dorsal scales are usually edged posteriorly with dark brown or black.

Micrurus lemniscatus helleri Schmidt and Schmidt

(TCWC 8). A coral snake which frequents the more open habitats of the Iquitos region. Centro Unión (1 ♂, 1 ♀), Indiana (1 ♂, 1 ♀), Moropon (1 ♂, 1 ♀), Yanamono (2 ♂). First record: Pebas

(Cope, 1870). Additional records: Iquitos (Cope, 1875). Our series was taken from secondary forests, orchards and pastures. One female (LOA 830 mm) taken in June contained five oviducal eggs and another (LOA 1,160 mm) taken in July contained six oviducal eggs. The largest eggs measured 8 X 31 to 12 X 38 mm, respectively. One stomach contained an eel, *Symbranchus marmoratus*, another a caecilian, *Oscacelia bassleri* and a third, two blind snakes, *Typhlops brongersmianus*.

Taxonomic data are: scales 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 225-238 (\bar{x} = 231.4), females 251-258 (\bar{x} = 254.7); caudals of males vary from 31-39 (\bar{x} = 35.5), females 37-40 (\bar{x} = 38.3); preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1; gulars preceding ventrals 3-4 (\bar{x} = 3.9); supralabials 7-7; infralabials 7-7; supralabials entering orbit 3+4; LOA/tail ratios of males .085-.096 (\bar{x} = .090), females .087-.088 (\bar{x} = .0876); maximum LOA of males 1,043 mm (with part of tail missing), females 1,160 mm.

Pattern consists of 9-11 (\bar{x} = 9.9) body triads of wide black rings separated by narrow yellow rings; each triad separated by a broad red ring; 1-2 (\bar{x} = 1.6) triads on tail; total number of red rings vary from 10 to 12; anterior part of head black followed by narrow yellow ring across prefrontals, followed by broad red nuchal ring extending to scale rows 3 to 5 behind parietals.

Micrurus narducci (Jan)

(TCWC 2). An extremely elongated coral snake found only in the primary forest. Centro Unión (1 ♂), Mishana (1 ♂). First record: Pebas (Cope, 1870). Additional record: Iquitos (Hoge and Romano, 1965). Both of our specimens were taken from the leaf litter of the forest floor.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals number 222, (inc.); caudals 25 (one inc.); preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1; supralabials 7-7; infralabials 7-7; supralabials entering orbit 3+4; gulars preceding ventrals 3; four infralabial shields touching genials on each side; LOA/tail ratio of male with complete tail .064; maximum LOA 235 mm.

Pattern consists of 26 oval, orange bands on the venter that extend upon the body to the level of the 4th and 5th scale rows; bands occasionally complete middorsally, but dorsum most frequently entirely black; three orange bands on ventral surface of tail; head black with orange ring crossing supraoculars, frontals and parietals.

Remarks. There are three species of closely related coral snakes that present a difficult systematic problem. These are *Micrurus*

collaris, *karlschmidti* and *narducci*, all formerly belonging to the genus *Leptomicrurus*. Available information suggests that these species occur within the confines of the Amazonian forest; that the numbers of ventrals, caudals, labials, temporals, body bands, etc. overlap; that color may be the only useful character that will separate two of the three species. Our specimens agree in part, with the data presented by Hoge, et. al. (1966) Romano (1971) for *karlschmidti*. The number of ventrals (222) is near the number known for *karlschmidti* (219) and lower than the minimum range of *narducci* (231-315). However, the color patterns are identical.

We suspect that the wide range of variation in numbers of ventrals exhibited by *narducci* suggests that *karlschmidti* may only be a populational variant of the former species since they maintain nearly identical color patterns. It is possible that examined specimens of *narducci* may include individuals of *karlschmidti* that comprise those specimens with the lower range of ventrals. *Micrurus collaris* has a light collar situated more posterior (end of parietal to second scale row of neck) and a 0+1 condition of the temporal scales. However, Romano (1971) has shown that the temporal condition varies to 1+1, a condition that is normal for the other two species. *Collaris* has a low number of ventrals (215-230) but may represent the opposite end of a cline from the Colombia-Peru-Brazil contact zone (*narducci-karlschmidti*) to the mouth of the Rio Amazonas (*collaris*).

We believe that a conservative approach is required and retain the current status of *Micrurus collaris*, but suggest that *karlschmidti* may be a race of *narducci*. If our original assumption is correct, then *Micrurus collaris* is the oldest available name and should be utilized for this rassenkreis.

Micrurus putumayensis Lancini

(TCWC 5, PS 4). A coral snake found in primary and slightly open, old secondary forests. Centro Unión (5♂, 4♀). First record: Centro Unión (Soini, 1973). All of our specimens were found beneath shrubs or upon the leaf litter of the forest floor. Most individuals were found actively crawling about during the early daylight hours. Stomachs contained the remains of colubrid snakes.

Taxonomic data: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 197-208 (\bar{x} = 201.8), females 220-226 (\bar{x} = 222.8); caudals of males vary from 47-51 (\bar{x} = 49.0), females 32-35 (\bar{x} = 33.3); preoculars 1-1; postoculars 2-2; loreal absent, temporals 1+1 (8), 1+2 (1); gulars preceding ventrals 3-4 (\bar{x} = 3.3); supralabials 7-7; infralabials 7-7; supralabials entering 3+4 (LOA/tail ratios of males .151-.160 (\bar{x} = .155), females .075-.096 (\bar{x} = .087); maximum LOA of males 760 mm, females 805 mm.

Pattern consists of 7-12 (\bar{x} = 9.6) black body rings (2-3, \bar{x} = 2.3, on tail) that alternate with yellow rings, all forming complete rings; yellow rings usually more narrow than black rings; dorsally, posterior edge of yellow scales edged with black, frequently obscuring yellow rings, but yellow rings always distinct ventrally; anterior surface of head black from snout to posterior edge of parietals, followed by yellow nuchal collar four scale rows in length; chin black with last few labials and gulars yellow, with dense black pigment scattered throughout.

Micrurus spixii obscurus (Jan)

(TCWC 23, PS 4). A large coral snake restricted to closed canopy forests. Centro Unión (5♂, 3♀), Iquitos (1 yg.), Maniti (1♂), Mishana (7♂, 3♀), Moropon (1♂), Quebrada Blanco, Rio Tahuayo (1♂, 1♀), Santa Maria (2♂, 2♀). First record: Iquitos (Schmidt, 1953B). This species was most frequently found below fallen logs, in leaf litter, or crossing forest trails. Stomachs contained the snakes *Atractus collaris*, *Leimadophis pygmaeus*, *Lio-phis chrysostomus*, and the lizard, *Kentropyx pelviceps*. A pair was found copulating at 0935 hrs, 29 July 1975. The male had inserted the left hemipenis. There is marked sexual dimorphism in size, with males always much larger than the female.

Taxonomic data are: scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals of males vary from 200-223 (\bar{x} = 210.0), females 206-217 (\bar{x} = 212.9); caudals of males vary from 17-23 (\bar{x} = 19.4), females 15-22 (\bar{x} = 18.9); preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1 (24), 1+1/1+2 (1), 1+2 (2); gulars preceding ventrals 3-5 (\bar{x} = 3); supralabials 7-7; infralabials 7-7; supralabials entering orbit 3+4; LOA/tail ratios of males .044-.062 (\bar{x} = .051), females .045-.054 (\bar{x} = .052); maximum LOA of males 1,315 mm, females 820 mm.

Pattern consists of 5-7 triads of black rings on the body and one incomplete triad on the tail. The triads are separated by 5-7 wide red rings and the black rings within each triad by a pair of wide yellow rings; the red rings are usually broader than the black rings; and the yellow rings are equal to or slightly wider than the central black rings; head usually divided into three color zones, snout yellow to level of eyes, followed by narrow black band from supraoculars to middle or posterior edge of frontal (passing through eye to labials on each side), followed by wide red band covering parietal and temporal regions; frequently, yellow areas have black edged scales.

Micrurus surinamensis surinamensis (Cuvier)

(TCWC 3, PS 2). A large coral snake usually found associated with aquatic habitats. Centro Unión (1♀), Mishana (1♀), Moropon

(3 ♀). First record: Iquitos (Cope, 1875). Our specimens were found on the banks of rivers, creeks, and lakes, and frequently in the water. An adult female (LOA 1,235 mm) captured in February contained 11 oviducal eggs that ranged from 25.0 X 41.5 to 28.0 X 55.5 mm. The stomachs of our series contained the digested remains of fish; Schmidt (1952) recorded an eel, *Symbranchus marmoratus*, in a stomach of one specimen.

Taxonomic data are: (all ♀♀) scale rows 15-15-15, smooth, without apical pits; anal plate divided; ventrals vary from 170-174 (\bar{x} = 171.8); caudals 31-34 (\bar{x} = 32.2); preoculars 1-1; postoculars 2-2; loreal absent; temporals 1+1; gulars preceding ventrals 3-5 (\bar{x} = 4.2); supralabials 7-7; infralabials 7-7; supralabials entering orbit, 4th only; LOA/tail ratios .103-.117 (\bar{x} = .111); maximum LOA, 1,235 mm.

Pattern consists of 7-8 (\bar{x} = 7.3) black and yellow triads that are separated by rather wide red rings (4-14 dorsals in width); always one and one half triads on the tail; central black rings are very wide, while the marginal black and yellow rings are narrow; entire head red to the posterior edge of the cephalic scales, with each scale black edged; a narrow black ring posterior to parietals, followed by narrow yellow ring, followed by broad black ring.

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