

## APPENDIX B

### ON A COLLECTION OF BATS FROM THE CAVES OF JUMANDI AND THE SURROUNDING AREA

#### 1. Summary

This report concerns a collection of more than 70 specimens of bats, corresponding to some 11 species, of which only one, Desmodus rotundus, inhabits the interior of the caves of Jumandi. Information on their ecology, feeding habits and reproduction is presented herein.

#### 2. Method

The process of observation and capture took place between the 1st and 4th of November 1979.

The specimens were collected using silk nets hung in various places: the main entrance to the cave; the small access hole, known locally as the 'chimney'; above a stream in front of the caves, and on the other side of the River Misahualli.

The identification of the specimens was carried out in the Biology Museum of the Escuela Politecnica Nacional (M.E.P.N.) and were examined by Dr. Alfred Gardner\*. The collection comprised of 40 specimens, the majority of which are preserved in alcohol or as skins with craniums. The skins are kept in the M.E.P.N.

#### Emballonuridae

##### 1. Cormura brevirostris (Wagner 1845)

Distribution: This species is only known in Ecuador from a few specimens from the eastern tropical region.

Material: One female specimen (skin with cranium) collected from the access opening to the caves.

Measurements: Total length 50mm, forearm 47.4, foot 12, tail 13, ear 1?, length of cranium 16.6, basal condyle 14.7, zygomatic width 8.8, postorbital constriction 4.7, width of cranium 8, weight 9.5g.

Observations: A number of individuals were flying around the shakehole entrance to the caves and probably live in the dense vegetation around the entrance.

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Phyllostomidae

2. Micronycteris megalotis (Gray 1842)

Distribution: This species has been recorded in the tropical regions on both sides of the Andes.

Material: One male specimen (skin with cranium) collected above the stream.

Measurements: Total length 47, forearm 37.7, foot 9, tail 11, ear 15, length of cranium 19.2, basal condyle 16.6, zygomatic width 9.4, postorbital constriction 4, width of cranium 7.7, weight 7g.

Observations: The specimen was collected on the other side of the River Misahualli in a net located in a small forest.

Food: Remains of fruit were found in the stomach.

Reproduction: There were no signs of sexual activity.

3. Tonatia s. silvicola (D'Orbigny 1834)

Distribution: Very common in the eastern tropical region, but recorded only once in the western region at Urbina in the Province of Esmeraldas (2).

Material: One female specimen (alcohol) collected from above the stream.

Measurements: Total length 70, forearm 54.8, foot 16, ear 35, tail 17, weight 16g.

Observations: The only specimen was captured in a net hung over a stream near the River Misahualli, Jumandi.

Food: Remains of fruit.

Reproduction: Adult male sexually inactive.

4. Phyllostomus hastatus (Pallas 1767)

Distribution: This species is found in the tropical regions of Ecuador on both sides of the Andes.

Material: Three male specimens (alcohol) collected from above the main entrance to the caves.



Measurements: Total length 90, 100, 85; forearm 84, 81.5, 83.6; foot 18, 20, 18; ear 26, 27, 23; tail 22, 20, 22; weight 76.5g, 87g, 85g.

Observations: These three specimens, collected from the cave entrance, were caught in nets as they were catching insects above the pool outside the entrance.

Food: Vegetable remains, including fruit and seeds.

Reproduction: These three adult males were sexually inactive.

5. Glossophaga soricina (Pallas 1976)

Distribution: The species is known from tropical areas on both sides of the Andes.

Material: Five specimens, 3 female, 2 male (4 in alcohol, 1 as skin with cranium) collected from the shakehole entrance to the Jumandi caves and must live in the vegetation around the opening.

Food: Remains of fruit and pollen were found in the gastrointestinal duct.

Reproduction: The females contained embryos of 16 and 17mm in length

6. Anoura caudifer aequatoris

Material: One female specimen (skin with cranium) collected above the stream.

Measurements: Total length 45, forearm 35.7, foot 10, ear 12, tail 5, length of cranium 22.4, basal condyle 22.4, zygomatic width 9.5, postorbital constriction 4.7, cranium width 9 weight 10g.

Observations: The only specimen was collected in the net hung over the stream near the River Misahualli.

Food: Remains of fruit.

7. Carollia perpicillata (Linnaeus 1758)

Distribution: The species is widely distributed in tropical and sub-tropical areas and in temperate valleys.



Material: Twelve specimens, 9 female, 3 male (alcohol) collected from the main entrance and from above the stream.

Measurements: Average of n=10: total length 52, forearm 42.1, foot 13, ear 17, tail 11.

Observations: This species is found in abundance on both sides of the Ecuadorean Andes. Together with the 12 specimens collected, we caught another 30 which were set free.

Food: Remains of fruit and seeds were found in their stomachs.

Reproduction: 8 of the 9 females contained embryos of between 18 and 22mm.

8. Sturnira l. lilium (Geoffroy 1844)

Distribution: The species has only been found in the eastern tropical region of Ecuador.

Material: Two female specimens (alcohol) collected from the main entrance and the shakehole entrance.

Measurements: Total length 56, 62; forearm 40.8, 41; foot 13, 13; ear 14, 13; weight 23, 23g.

Observations: These specimens were collected from the main entrance to the caves and from above the stream using a silk net.

Reproduction: The two females contained embryos of 19 and 22mm.

Food: Seeds and remains of fruit were found in the stomachs.

9. Vampyrops infuscus (Peters 1881)

Distribution: Recorded only in the eastern tropical region.

Material: Nine specimens, 7 female, 2 male (alcohol and 1 skin with cranium) collected from main entrance and small cave, on the other side of the River Misahualli.

Measurements: Average of n=7: total length 75, forearm 56, foot 15, ear 18, weight 42g. N=1, cranium length 31.5, basal condyle 28.3, zygomatic width 18.5, postorbital constriction 7, cranium width 12.6



Observations: At about 200m. from the caves of Jumandi and on the other side of the River Misahualli there is a small cave. One can easily walk through the entrance but then it gets smaller until the roof is only a few cm.s above the water level. There, one can hear the activity of this species of bat. On the cave walls near the entrance hung several specimens, easily recognisable for their characteristic dorsal stripe, colour and size.

Food: There were remains of fruit and seeds in both the fur and the stomach.

Reproduction: Males and females sexually inactive.

10. Artibeus spp.

Twelve specimens of this genus were collected and ten were set free. Collected near the cave entrance and near the River Misahualli, they have not yet been classified, but they are similar to lituratus or jamaicensis. Several of the specimens had seeds stuck to the fur.

11. Desmodus rotundus (E. Geoffroy St. Hillaire 1810)

Distribution: It is one of the species that is widely distributed throughout the country to an altitude of a little over 3000m. Today, it is the only species that lives in the interior of the caves of Jumandi. Among the stalactites on the ceiling of a side tunnel there lives a colony of some 20 individuals. According to the local inhabitants a large number of bats used to live in the caves, possibly of several species. However, a campaign four years ago to eradicate the Vampire bats using the chemical Difenadione resulted in the death of all these animals, and it is only recently that the Vampires have begun to reinhabit the caves. Nevertheless, the cattle of this region are attacked by these animals.

J. Hernández y Cadena (3) records the collection of Lonchorhina aurita in this cave, which confirms that other species of bat formerly inhabited the interior of the cave.



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