

Glossophaga soricina

A bat expanding 260 mm. and fairly common. General colour slightly reddish brown, a little darker on the back.

Habits. The tongue is long and extensible, and is much attenuated towards the tip where it is covered with strong, recurved papillae. This led Spix to describe the bat as a very cruel blood sucker, believing that the tongue was used to increase the flow of blood. This view is, however, altogether without foundation, and from the observations of Osburn and others, it is evident that the peculiarly-shaped tongue is used by the animal to lick out the pulpy contents of fruit. The food of the species of this group appears to consist of both fruit and insects, and the long tongue may be used for extracting the latter from the deep corollae of certain flowers. This bat is a flower visitor. It can be seen at various flowers in the Botanic Gardens. I have taken it on calabash flowers. It settles on the flowers.

Sleeping places. Caves.

Distribution. (L.W.—In 1934 one was shot on Long Circular Road and another at Caratal Road, Cumuto.)

Anoura geoffroyi

A rather uncommon bat of 280 mm. expanse. General colouration: brown on the back, a little brighter on the underside. It has a narrow snout with fine bristle round the lips.

Habits. Little known, but a likely flower visitor.

Sleeping places. Caves and hollow tree trunks.

Distribution. Tamana and Mt. St. Benedict.

Artibeus jamaicensis palmarum (*Artibeus lituratus palmarum*)

(L.W.—Three were shot in the belfry of the R.C. Cathedral on 14th March, 1934; one was very yellow. Five more were taken there on 7th April and these had young at the breast. Eight with six young were shot in a palm tree in front of the house on Trafford's Estate, Caura, on 13th April, 1934.)

DO BOAS LAY EGGS?

BY A. T. CARR

As a result of a photograph reproduced in the local press of a Boa constrictor which had laid eggs, a party of four members of the Trinidad Field Naturalists Club, including Mr. C. L. Williams (now President) and the writer visited the owner of the reptile to carry out investigations, and the following is the case history.

Mr. Nan Singh of B. Singh & Sons who kept a menagerie shop near to Major Knaggs' place on the Saddle Road at Santa Cruz, had become possessed of a Macajuel snake (*Boa constrictor*) some five months previously. The snake was confined in a cage which comprised 8 sheets of galvanized iron so arranged as to form an enclosure of 4 ft. by 6 ft. It was opened and subject to the direct rays of the tropic sun. When Mr. Singh found this constituted too much discomfort for the reptile, he would place two more sheets of galvanize on the top to provide shelter, but this increased the intensity of heat inside the enclosure. Realising this, he would occasion-

ally throw in a bucket of water on the reptile to cool it and also to saturate the ground upon which it lay.

The Singh shop was situated on a road famed for its scenic beauty and in consequence much frequented by motorists and tourists. They would frequently stop at the shop to purchase curios, and to view his collection of animals, and often these people would want the snake lifted out of its cage for closer inspection.

About 6.30 on the evening of Sunday, May 29, 1938, Mr. Singh, much to his surprise, noticed that his Macajuel snake had begun to lay eggs at intervals of about half an hour. Neither himself nor his wife retired for the night because of the unusual phenomenon, and the constant "groaning" of the reptile which Mr. Singh says went on all night. He described the peculiar sound as that of a bird being held down and crushed. By 4 a.m. when he at last retired there were 15 eggs laid. By 8 o'clock on that morning (Monday 30th) there were three more eggs, bringing the total deposited to 18 in number over a period of about 14 hours. These eggs were light reddish-brown in colour and soft to the touch, having a thin outer covering and, according to Mr. Singh, were of the consistency of a toy balloon.

On Tuesday morning at about 6 o'clock, some 22 hours after the last eggs were voided, the first baby snake punched his way out. Between 8 a.m. and 9 a.m. two more youngsters appeared. They were all attached to their eggs by a cord of about 7 inches long. By 11 a.m. two more snakes emerged. All were attached to their eggs for several days. Of the first three snakes two died, one having been crushed by the mother whilst she carelessly moved about the cage. On Sunday the 5th June, the date of our party's visit, and fully six days after the young snakes were born, the last two to emerge were still attached to their respective eggs. Eight days after birth, that is, on Tuesday, 7th June, one of them became free from the egg, and at midday of the 9th June—10 days after birth—this attachment dropped away from the last baby snake. Thus out of a total of 18 eggs only five hatched.

During the time the snakes were attached to their eggs they did not move about, but were resting quietly in some corner of a large tub in which the surviving three and the remaining eggs were put. Mr. Singh says that there was a marked agility in the young after they became free from their eggs.

Six days after they were laid, that is on Sunday, 5th June, the eggs were dark brown in colour and tough and rubbery to the touch. They were ellipsoid in shape, about three inches long and about one inch in diameter. At this stage one was opened and found to contain a comparatively dry and congealed mass of brownish-yellow matter and at one corner of it was found what seemed to be a young under-developed snake, dead and compressed. On the 9th June—10 days after the eggs were laid—they were again examined. The eggs seemed to have shrunk a little in size. One was again opened and the same condition found as in the first egg. These are the facts of this case of egg-laying.

Here is what R. R. Mole, authority on Trinidad snakes, records:
"The young are produced alive and may be as many as 60 or perhaps an even higher number. Sometimes eggs, probably unfertilized are brought forth with the living young. They (macajuels) have been seen

to couple in December, January, February and March. Young ones have been born in May and the largest litter recorded in my notes was 63."

In his book "Snakes of the World", which to-day can be had at the Trinidad Public Library, Dr. R. L. Ditmars, Curator of Mammals and Reptiles at the New York Zoological Park, and a recognised world authority on the Ophidia, says in no uncertain terms that "The Boinae are viviparous". That is to say, all the members of the Boa sub-family (Constrictors and the Tree-boas formerly of the genus *Corallus*) bring forth their young alive.

It is interesting to note that Boulenger and Lydekker (both world famed authorities) had stated that there was one instance only on record in which both eggs and young were produced simultaneously. Unfortunately, the record does not state whether these eggs ever hatched.

It is perfectly clear then that there is much authoritative pronouncement on viviparity in the boas, as against the statement that they lay eggs.

From the facts outlined above this case would appear to be an abnormal and premature birth. All the facts point towards an abnormality of birth. It is abnormal that only five snakes emerged from these 18 eggs. It is abnormal that the young snakes should have remain attached to their eggs for so long a time, the last two until the 8th and 10th days after birth. In nature young born under normal circumstances are never so handicapped; it would be detrimental to the survival of the species. I have seen the birth of young snakes of a member of the boa sub-family, *Boa enydris*, formerly *Corallus cookii*. When the young emerged they were free of any such attachment and after a short while they were normal and lively.

I should attribute this abnormal birth of young macajuels to some physiological adverse conditions which may be due mainly to the unhealthy and overheated condition of the animal's cage, and possibly also to excessive handling throughout the period of gestation.

SHORT NOTES AND ISOLATED OBSERVATIONS

New Locality Records for the Paradox Frog

In 1933, Parker⁽¹⁾ suggested that early records of *Pseudis paradoxa* in Trinidad may have resulted from confusion with *Rana palmipes*. A year later he reported that Visey-Fitzgerald had collected some from a pond in Mayaro but had found them nowhere else⁽²⁾. In April of that year Urich collected a series of tadpoles and adults, and in the following August, Greenhall, too, collected tadpoles and adults, both collections coming from a pond in the Urich estate in Mayaro—probably the same pond from which Vesey-Fitzgerald's specimens had been taken. Mayaro, therefore, is the only locality from which this frog has been recorded in Trinidad.

Three new localities can now be reported. On 26th September, 1955, a large tadpole was brought to the Emperor Valley Zoo from the Plum Mitan rice fields near Biche, and recently I collected two adults from canals in the Iacos Swamp near Cedros. I also heard at least three individuals singing in the Apex Oilfields dam at Fyzabad in June 1956.

It therefore appears that this frog is more widely distributed in Trinidad than previous records indicated.

J. S. KENNY.