

Length of pupal stage

Specimen No. 1: Moulded to pupa between 4.15 and 7.15 p.m. on 3rd Sept., 1954; emerged on 16th Sept. between 8.30 and mid-day. Pupal period 12+ days.

Specimen No. 15: Moulded to pupa on night of 11th Nov., 1954; imago emerged in the afternoon of 25th Nov. Pupal period 13+ days.

Specimen No. 18: Moulded to pupa on night of 22nd Nov., 1954; imago emerged before 8.30 a.m. on 6th Dec. Pupal period 13 days.

Specimen No. 29: Moulded to pupa on the night of 29th Jan., 1956; imago emerged between 7.30 and 8.30 a.m. on 12th Feb. Pupal period 13 days.

SUMMARY

The life history of *Papilio cresphontes* has been studied. Observations on the caterpillar include measurements of growth and certain points of behaviour. The duration of the stages are: egg, 4 days; larva, 16 to 26 days; pupa, 13 days; total, 33 to 43 days.

ACKNOWLEDGEMENTS

I wish to thank Mr. F. Ambard for bringing to my attention the early moults and Mr. A. G. Gabriel of the British Museum (Nat. Hist.) for identifying the butterfly.

REFERENCE

- (1) Kaye, W. J. A Catalogue of the Trinidad *Lepidoptera Rhopalocera* (Butterflies). Memoirs Dept. Agric. Trinidad & Tobago, No. 2, 1922.

BATS OF TRINIDAD

BY ARTHUR M. GREENHALL

(Curator, Royal Victoria Institute Museum, and Zoologist, Department of Agriculture, Port-of-Spain, Trinidad, B.W.I.)

The purpose of this paper is to list the bats of Trinidad and to record those which have been reported or collected since the last comprehensive list of mammals of Trinidad appeared in 1936 (1). The first list of Trinidad Mammals appeared in 1892 (2).

During the course of bat investigations in connection with the anti-rabies programme of the Department of Agriculture several species new to Trinidad have been collected and need to be recorded. Several of our finds are still unidentified and will not be included. Identifications in other instances have not been clarified but have been included. As an aid to zoologists, the species listed by Vesey-FitzGerald and Thomas will be added.

	1936	1892
1956 LIST	VESEY-FITZGERALD	THOMAS
<i>EMBALLONURIDAE</i> —Sac-Winged Bats		
1. <i>Rhynchiscus naso</i> (Wied)	<i>R. naso</i> Wied	<i>Rhynchonycteris naso</i> .. Wied
2. <i>Saccopteryx bilineata</i> (Temminch)	<i>S. bilineata</i> Temm.	<i>S. bilineata</i> , Temm.
3. <i>Saccopteryx leptura</i> (Schreber)	<i>S. leptura</i> Schreber	<i>S. leptura</i> , Schr.
4. <i>Peropteryx macrotis trinitatis</i> (Miller)	<i>P. trinitatis</i> Miller	<i>Saccopteryx canina</i> , Wied.
5. <i>Diclidurus albus</i> (Wied) or <i>virgo</i> Thomas	<i>D. albus</i> Wied	
<i>NOCTILIONIDAE</i> —Fish-Eating Bats		

- | | | |
|--|---|--|
| 6. <i>Noctilio l. leporinus</i>
(Linnaeus) | <i>N. leporinus</i> L. | <i>N. leporinus</i> ,
Linn. |
| PHYLLOSTOMIDAE—Leaf-Nosed Bats | | |
| 7. <i>Chilonycteris personata</i>
Wagner | | |
| 8. <i>Chilonycteris r.</i>
<i>rubiginosa</i> (Wagner) | <i>C. rubiginosa</i> Wagn. | <i>C. rubiginosa</i> , Wagn. |
| 9. <i>Pteronotus d. davyi</i> Gray | <i>P. davyi</i> Gray | <i>Chilonycteris davyi</i> , Gray |
| 10. <i>Mormoops m. megalophylla</i> Peters | <i>Mormoops megalophyllum</i>
Peters | <i>M. megalophylla</i> ,
Peters |
| 11. <i>Micronycteris m.</i>
<i>megalotis</i> Gray | <i>M. megalotis</i> Gray | <i>M. megalotis</i> , Gray |
| 12. <i>Micronycteris minuta</i>
Gervais | | |
| 13. <i>Micronycteris hirsuta</i>
(Peters) | | |
| 14. <i>Micronycteris platyceps</i>
Sanborn | | |
| 15. <i>Micronycteris nicifori</i>
Sanborn | | |
| 16. <i>Lonchorhina aurita</i>
Tomes | <i>L. aurita</i> Tomes | <i>L. aurita</i> , Tomes |
| NOTE: There is still doubt as to the validity of this as a <i>bona-fide</i> record for Trinidad. I have not collected any. | | |
| 17. <i>Tonatia venezuelae</i> Lyon | | |
| 18. <i>Authorhina crenulata</i>
(Geoffroy) | | |
| 19. <i>Phyllostomus d.</i>
<i>discolor</i> Wagner | <i>Phyllostoma discolor</i>
Wagn. | |
| 20. <i>Phyllostomus h.</i>
<i>hastatus</i> Pallas | <i>Phyllostoma hastatum</i>
Pallas | <i>P. hastatum</i> , Pall. |
| 21. <i>Trachops chirroshus</i>
(Spix) | | |
| 22. <i>Vampyrus s. spectrum</i>
Linnaeus | <i>Vampyrus spectrum</i> L. | |
| 23. <i>Glossophaga s. soricina</i>
Pallas | <i>G. soricina</i> Pallas | <i>G. soricina</i> , Pall. |
| 24. <i>Anoura g. geoffroyii</i>
Gray | <i>Anoura geoffroyi</i>
Pallas | <i>Anura geoffroyi</i> , Gray |
| 25. <i>Choeroniscus intermedia</i>
Allen & Chapman | <i>Choeronycteris</i>
<i>intermedius</i> Chap. | |
| 26. <i>Carollia p. perspicillata</i>
(Linnaeus) | <i>Hemiderma brevicauda</i>
Wied | <i>H. brevicaudatum</i> , Wied |
| 27. <i>Sturnira l. lilium</i>
Geoffroy | <i>S. lilium</i> Geoff. | <i>S. lilium</i> , Geoff. |
| 28. <i>Uroderma bilobatum</i>
Peters | <i>U. bilobatum</i> Peters | |
| 29. <i>Vampyroptus helleri</i>
Peters | | |
| 30. <i>Vampyrodes caraccioli</i>
Thomas | <i>V. caraccioli</i> Thos. | <i>Vampyroptus caraccioli</i> ,
Thos. |
| 31. <i>Chiroderma villosa</i>
Peters | <i>C. villosa</i> Peters | <i>C. villosum</i> , Peters |
| 32. <i>Artibeus jamaicensis</i>
<i>trinitatis</i> Anderson | <i>A. planirostris trinitatis</i>
K. And. | <i>A. perspicillatus</i> , L. |
| 33. <i>Artibeus lituratus palmarum</i>
Allen & Chapman | <i>A. jamaicensis palmarum</i>
Allen & Chap. | <i>A. planirostris</i> , Spix |
| 34. <i>Artibeus c. cinereus</i>
Gervais | <i>A. quadrivittatis</i> Peters | <i>A. quadrivittatis</i> Peters |
| 35. <i>Enchisthenes harti</i>
(Thomas) | <i>E. harti</i> Thos. | <i>A. harti</i> , Thos. |
| 36. <i>Centurio senex</i> Gray | | |

DESMODONTIDAE—Vampire Bats

37. *Desmodus r. rotundus* Geoffroy *D. rufus* Wied *D. rufus*, Wied

38. *Diaemus youngi* Jentink

NATALIDAE—Funnel-Eared Bats

39. *Natalus stramineus* Gray *N. stramineus* Gray

FURIPTERIDAE—Smokey Bats

40. *Furipterus horrens* Cuvier *F. horrens* F. Cuv.

THYROPTERIDAE—Disk-Winged Bats

41. *Thyroptera tricolor* T. *tricolor* Spix *T. tricolor*, Spix
albigula (G. M. Allen)

VESPERTILIONIDAE—Vespertilionid Bats

42. *Myotis n. nigricans* (Schinz) *M. nigricans* Wied *Vespertilio nigricans*
Wied

43. *Myotis albescens*
Geoffroy

44. *Lasiurus borealis* subsp.? *frantzii*?? (Peters)

45. *Dasypterus e. ega* Wied *D. ega* Wied

46. *Rhogeessa io* Thomas or
R. tumida H. Allen

MOLOSSIDAE—Free-Tailed Bats

47. *Cynomops p. planirostris*
(Peters)

48. *Tadarida b. brasiliensis*
(Geoffroy)

49. *Promops centralis*
Thomas

50. *Molossus r. rufus* True

51. *Molossus r. nigricans* Miller *M. rufus* Wied *M. rufus*, Geoff.

NOTE: It is almost impossible to determine which subspecies of *M. rufus* the 1892 and 1936 lists refer to. I arbitrarily assign *M. r. nigricans* to them since it is by far the commoner of the two subspecies.

52. *Molossus m. major* (Kerr) *M. obscurus* Geoff. *M. obscurus*, Geoff.

Summary: The 1956 list includes 52 species and subspecies.

The 1936 list includes 34 species.

The 1892 list includes 26 species.

REFERENCES

- (1) Vesey-FitzGerald, D. 1936 "Trinidad Mammals" Tropical Agriculture, 13:161-165.
(2) Thomas, Oldfield. 1892 "A preliminary list of the mammals of Trinidad" Journal Trinidad Field Naturalist Club 1:158-168.

NOTES ON SOME TRINIDAD BATS

BY F. W. URICH

WITH ADDITIONAL OBSERVATIONS

BY LUDOLF WEHEKIND

Saccopteryx bilineata

A pretty brownish bat almost black on the back, and light brown mouse colour on the underside. Two white lines run down the sides of the back from the shoulder blades to the end of the body. This as well as the next species has a peculiar little pouch or sac nearly large enough to hold a pea in the wing membrane in front of the arm in the male sex.