

bercles ii of joints 8 and 12 on a rounded papilla, the other tubercles slightly or not prominent. Brown, dark dorsally, wood-brown and yellowish ventrally, finely waveringly and narrowly lined in dark brown; subventral fold sordid bluish white on joints 5 to 10; a white stigmatal band on joints 2 to 4 and 10 to 13, composed of a vague shading through which run fine whitish lines. Feet colored like the venter, those of joint 13 with a white line. Spiracles black ringed. Tubercles and setae black, the latter short.

*Stage I7.* (interpolated.) Head rounded, flattened, sometimes held flatly; mouth short, antennae small. Brown, obscurely mottled with darker; a pale line at the base of the clypeus to ocelli, the sides below and labium pale; width 2.1 mm. Body flattened cylindrical, thoracic feet moderate, appressed, the abdominal ones large. Tubercle ii of joint 8 conically produced, of 12 similar, but the pair more approximate, a pair of subanal prongs; else smooth, the other tubercles not elevated. Brown, the dorsum uniformly and smoothly so except in a distant white half-ring before the lump on joint 8 and whitish fine linings on the thorax and joints 10-13. Subventral fold narrowly whitish lined; venter pale, blotched in red, finely dark lined and with the tubercles dark. Venter of joints 10-13 broadly whitish; a series of medioventral elongate, dark brown patches.

*Stage I7.* Less smoothly purplish brown, more wood-brown, and more lined dorsally. Head 2.6 mm. Reddish and white points at the dorsal tubercles. Joint 3 held in a collared shape, lumpy on the sides and red streaked there. Feet bunched and head held erect or else the head held flatly without the collared prominence on thorax. Half ring before the lump on joint 8 distinct, white, the tubercles ii of this segment dark. Dorsum of joint 12 also with a pair of prominent tubercles; subventral fold raised. When fully fed the color became a light wood brown. Cocoon of a few coarse threads between leaves. Probably at least double brooded. Larvae from

Bellport, New York, the eggs August 7, mature larvae September 12th. Fed readily on apple, the natural food plant not determined.

#### BIBLIOGRAPHICAL NOTES.—X.\*

By SAMUEL HENSHAW.

BIOLOGIA CENTRALI-AMERICANA.—ORTHOPTERA. Vol. 1. By Henri de Saussure, Leo Zehntner, A. Pictet, and A. de Bormans. gen. sp.

Forficulidae, 1893, pt. 110, 111, p. 1-12.	14	41
Blattidae, 1893, pt. 111-113, p. 13-104; 1894, pt. 114, p. 105-123.	44	156
Mantidae, 1894, pt. 114-117, p. 123-197.	25	61
Gryllidae, 1894, pt. 117, p. 198-200; 1896, pt. 132, p. 201-216; 1897, pt. 133-135, p. 217-284.	34	106
Locustidae, 1897, pt. 135-139, p. 285-344; 1898, pt. 140, 142, 144, 145, p. 345-456; 1899, pt. 146, p. 457-458	87	272

Nine genera and 79 species of Blattidae, 12 genera and 53 species of Mantidae, 3 genera and 25 species of Gryllidae, and 20 genera and 107 species of Locustidae are noticed in the text that are not included in the above enumeration; these represent allied extralimital forms.

Of the 636 species recorded from Central America, 2 Forficulidae, 7 Blattidae, 6 Mantidae, 17 Gryllidae, and 14 Locustidae, a total of 46, are found in America north of Mexico.

Species of the following genera are figured:—

*Forficulidae*.—Ancistrogaster, 2. Anisobasis, 1. Diplatys, 1. \*Echinopsalis, 1. Forficula, 2. Labia, 1. Neolobophora, 2. Opisthocosmia, 1. Psalis, 1. Sparatta, 1. Sphingolabis, 2. Spongophora, 2.

\*For IX see Psyche viii, 141.

*Blattidae*.—*Achroblatta*, 6. *Anaplecta*, 3, 4. *Anisopygia*, 1. *Archimandrita*, 5. *Blabera*, 5. *Blatta*, 4. *Cacoblatta*, 5. *Caloblatta*, 3. *Calolampra*, 3, 4. *Capucina*, 6. *Cerati-  
noptera*, 3. *Choriseoneura*, 2. *Epilampra*, 4. *Eurycotis*, 4. *Hemiblabea*, 5. *Hemipterota*, 2. *Holocompsa*, 3. *Homoeogamia*, 3, 5. *Hypnorna*, 3. *Ischnoptera*, 3, 4, 6. *Latindia*, 5. *Loboptera*, 1. *Megaloblatta*, 5. *Nyctobora*, 4. *Panchlora*, 5, 6. *Paralattindia*, 5. *Pelmatosilpha*, 4. *Plectoptera*, 3, 4. *Pseudophyllodromia*, 3. *Rbicnoda*, 4. *Temnopteryx*, 3, 4. *Theganopteryx*, 4. *Thyrsocera*, 3.

*Mantidae*.—*Acanthops*, 6. *Acontista*, 6. *Angela*, 8. *Choeradodis*, 9. \**Hagiotata*, 8. *Harpagonyx*, 8. *Litaneutria*, 8. *Mantoida*, 10. *Melliera*, 7. *Mionyx*, 9, 10. *Musonía*, 10. *Oligonyx*, 9. *Phasmomantis*, 7. *Phyllo-  
mantis*, 6. *Pseudomiopteryx*, 9. *Spanionyx*, 10. *Stagmatoptera*, 8. *Stagmomantis*, 7, 9. *Theoclytes*, 6, 10. *Thrinaconyx*, 10. *Vates*, 6, 10.

*Gryllidae*.—*Amphiacustes*, 12. *Amusus*, 12. *Aphonus*, 13. *Apithes*, 13. *Arachnomimus*, 12. *Cyrtoxiphus*, 11. *Diatrypus*, 13. *Ectatoderus*, 11. *Ectecous*, 12. *Endacustes*, 12. *Gryllodes*, 11. *Gryllus*, 11. \**Heterecous*, 13. *Liphoplus*, 11. *Nemobius*, 11. *Oecanthus*, 12. *Orocharis*, 13. *Orochirus*, 13. *Paragryllus*, 12. *Paroecanthus*, 13.

*Phyllogryllus*, 13. *Prosthaecustes*, 12. *Rhipipteryx*, 11. *Thamnoscirtus*, 13. *Tridactylus*, 11.

*Locustidae*.—*Acanthodis*, 20. *Amblycorypha*, 16. *Anaulacomera*, 16. *Anchiptolis*, 20. \**Argvrtes*, 15. \**Basileus*, 19. *Bliastes*, 20. \**Caloxiphus*, 21. \**Celidophylla*, 22. *Ceuthophilus*, 14. \**Championica*, 20. *Chlorophylla*, 22. \**Chloroscirtus*, 15. *Cocconotus*, 20. *Conocephalus*, 19. *Copiephora*, 19. *Ctenophlebia*, 16. *Cycloptera*, 22. *Diophanes*, 21. *Ectemna*, 15. *Eriolus*, 19. \**Euacris*, 21. *Glaphyrosoma*, 14. *Gongrocnemis*, 20. *Gryllacris*, 15. \**Hemideopsylla*, 15. *Homilia*, 15. *Hyperphrona*, 16. *Idiarthron*, 20. *Ischnomela*, 21. *Lirometopum*, 19. *Lobophyllus*, 18. *Lophaspis*, 21. *Microcentrum*, 16, 17. *Mimetica*, 22. *Nannotettix*, 21. *Paragenes*, 16. *Petaloptera*, 17. *Peucestes*, 18. \**Phoberopus*, 14. *Phriza*, 16. *Phylloptera*, 16. *Platyphyllum*, 20. *Posidippus*, 18. *Pyrgocorypha*, 19. *Schoenobates*, 14. *Scopiorus*, 21. *Scudderia*, 15. *Stenopelmatus*, 14. *Stilpnochlora*, 17. *Syntechna*, 17. *Tanusia*, 22. \**Thamnobates*, 20. *Thysdrus*, 19. *Turpilia*, 16. *Typophyllum*, 22. *Xiphidium*, 19.

New genera are preceded by an \*; the figure after the name of the genus indicates the number of the plate.

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