

External male genitalia (Figs. 8 and 9). Clasper about three times as long as broad, approximately cylindrical and with a blunt, heavily chitinized apical portion. Claspers normally strongly convergent and acutely angled on last abdominal segment. External female genitalia (Fig. 7). Papillae three segmented; all approximately equal length and evenly haired over all surfaces. Slightly or strongly divergent.

PUPA. Length 10–14 mm in male and 12.0–17.5 mm in female. Male pupae with the distinctly convergent claspers visible and female pupae with the distinctly divergent papillae visible.

LARVA. Length 3–5 mm when newly hatched; 30–40 mm when fully mature. Width of fully grown larva 1.0–1.5 mm. Colour generally creamy white, head brown.

Head: Well chitinized, bent ventrally. Labrum with pair of distinct comb-like plates at anterior extremity of a narrow band of chitin which arises from anterior margin of chitinized portion of labrum. Each comb with about 10 long teeth equal to the length of the comb. Mandibles (Fig. 5) with two strong and two weak teeth on apical margin and one tooth on inner surface at about apical third. Maxilla (Fig. 6) with approximately 10 distinct teeth in row along outer margin. Antenna vestigial and in form of low hemispherical protuberance. Large sensory area ventral and a smaller sensory area posterior to antennae. Pair of small papillae at caudal end.

Egg. Spherical. Pale yellow, changing to rouge just before hatch.

Diameter 0.75 mm.

HOLOTYPE. Wellington (G. V. Hudson coll.). In the collections of the Australian Museum, Sydney.

#### MATERIAL EXAMINED

ADULTS. Waipu: Waipu Caves, 50 yards in, 12/9/1959, 2 ♂; 150 yards in, 25/10/1959, 1 ♂, 1 ♀ (*B. M. May*); Caves, 26/9/1959, 1 ♀; pupae collected 26/9/1959, adults emerged 28/9/1959, 2 ♀, 30/9/1959, 2 ♀, 2/10/1959, 1 ♀, 5/10/1959, 1 ♂, 7/10/1959, 1 ♀ (*A. M. Richards*). Waitakere Ranges: Swanson, waterworks tunnel, caught on wing, 23/9/1956, 1 ♂, 2 ♀ (*R. W. Taylor*); Swanson, waterworks tunnel, bred ex pupae, 30/6/1959, 8 ♂, 8 ♀, (*A. M. Richards* and *R. A. Harrison*); Swanson, waterworks tunnel, 14/2/1960, 1 ♂, 1 ♀ (*in cop.*), (*A. M. Richards*); Titirangi, waterworks tunnel, 18/10/1959, 1 ♀, 1 ex.; emerged 23/10/1959, 1 ♀, (*A. M. Richards*). Port Waikato: Puriri Caves, 1/8/1959, 1 ♀ bred ex pupa (*B. M. May*). Matira: Gaskells Cave, 50 yards in, 14/9/1958, 2 ♂, taken *in cop.* on ♀ pupal exuviae (*B. M. May*). Te Awamutu: Karamu Cave, emerged ex pupa 17/8/1957, 1 ♀ (*B. M. May*). Te Kuiti: Waipuna Cave, emerged ex pupa, 2/2/1957, 1 ♂ (*B. M. May*); Hollow Hill Cave, 9/8/1958, 1 ♂ (*B. M. May*). Waitomo: Bred from larva, 1 ♀, 1926 (*A. Tonnoir*) (*Auck. Mus.*); glow-worm Cave, Demonstration chamber, 3/11/1954, 2 ♀; 11/6/1955, 1 ♂, 1 ♀; 22/6/1956, 1 ♂, 1 ♀; 15/7/1959, 8 ♂ 1 ♀; 16/7/1959, 1 ♀ (*A. M. Richards*); Bush near Aranui Cave, bred ex pupa collected 14/7/1959, emerged 16/7/1959, 1 ♀ (*S. A. Rumsey*); Gardners cut, 25/10/1959, 1 ex. (*D. Smith*). Wellington: Botanical Gardens, bred from larva collected 4/4/1889, 1 ex.; pupae collected 24/4/1926; 1 ♀ emerged 13/9/1926; 1 ♂ emerged 4/11/1926 (*G. V. Hudson*) (*Dom. Mus.* Wellington). Nelson: Aniseed Valley, 17/1/1956, 1 ex (*E. S. Gourlay*) (*Ent. Div. Nelson*).

PUPAE. Waipu: Waipu Caves, 26/9/1959, 2 ♂, 2 ♀ (*A. M. Richards*). Waitakere Ranges: Swanson, waterworks tunnel, 30/6/1959, 2 ♀ (*A. M. Richards* and *R. A. Harrison*); Titirangi, waterworks tunnel, 18/10/1959, 1 ♂ (*A. M. Richards*). Waitomo: Waitomo Cave, 8/6/1955, 1 ♀; 15-16/7/1959, 1 ♂, 4 ♀ (*A. M. Richards*).

LARVAE. Waipu: Waipu Cave, 26/9/1959, 7 ex. (*A. M. Richards*); 25/10/1959, 1 ex. (*B. M. May*). Waitakere Ranges: Swanson, waterworks tunnel, 30/6/1959, 6 ex.; 6/7/1959, 1 ex. (*A. M. Richards*); 30/6/1959, 6 ex. (*A. M. Richards* and *R. A. Harrison*). Te Kuiti: Waipuna Cave, 11/1/1958, 5 ex. (*K. A. J. Wise*). Waitomo: Glow-worm Cave, Grotto, 16/7/1959, 7 ex.; 18/9/1959, 12 ex. (*A. M. Richards*); White's Cave, 25/10/1959, 50 ex.