

IMMATURE STAGES OF *HEZA INSIGNIS* STÅL (HETEROPTERA: REDUVIIDAE: HARPACTORINAE)

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Abstract.—The egg and five instars of the harpactorine *Heza insignis* Stål are described and illustrated. Descriptions include morphological and morphometrical characters of specimens reared in the laboratory.

Key Words: Heteroptera, Reduviidae, Harpactorinae, *Heza insignis*, eggs, nymphs

The genus *Heza* Amyot and Serville is comprised of 36 species (Maldonado Capriles 1990). Maldonado Capriles (1976) revised the genus and included a key to 28 or the 31 species known at that time. Maldonado Capriles (1983) added four new species, and, in the same year, Maldonado Capriles and Brailovsky (1983) described one more. *Heza insignis* Stål was described from Brazil, and adults were redescribed from specimens from Bolivia by Maldonado Capriles (1976).

The purpose of this paper is to describe the egg and nymphs of *Heza insignis* in an effort to complete the knowledge of the life cycle of this species.

MATERIALS AND METHODS

The material used in this study consists of eggs and specimens reared in the laboratory at the Instituto de Biología, UNICAMP (Universidade do Campinas), Campinas, São Paulo, Brazil. The material was preserved in 75% ethanol.

Terminology used for morphology follows that of Miller (1971) and Swadener and Yonke (1975).

The measurements are given in millimeters. Illustrations were made with a drawing tube on a Wild M-stereomicroscope.

Scanning electron micrographs of eggs and fifth instars were made from specimens mounted on stubs, sputter-coated with a gold palladium alloy, and studied with a JEOL T-100 SEM.

DESCRIPTION

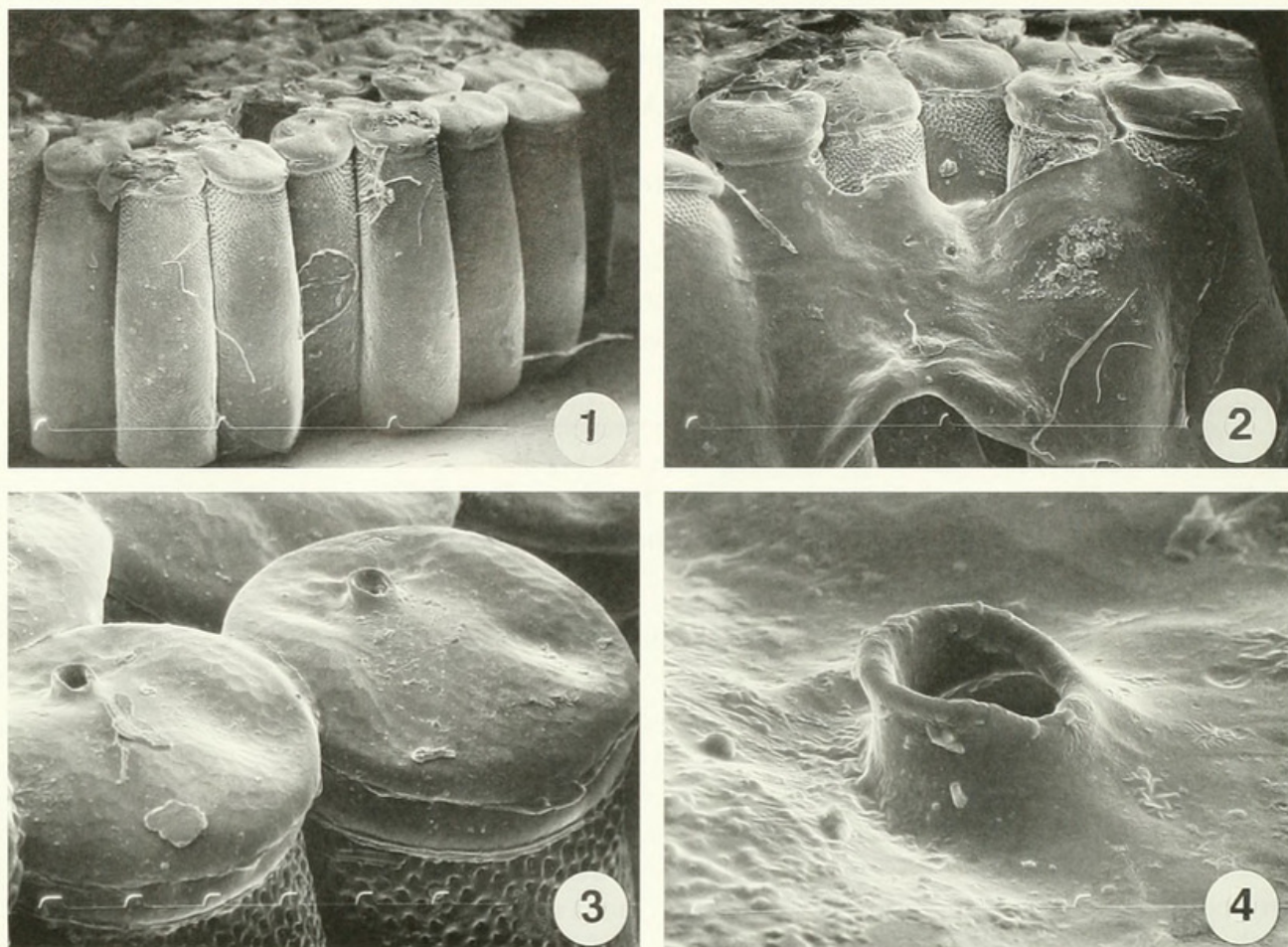
Heza insignis Stål

Egg. (Figs. 1–4).—Length 1.45–1.56 (\bar{x} = 1.48), diameter of operculum 0.37–0.46 (\bar{x} = 0.42). Ova of regular masses of dark brown eggs cemented by their margins (Fig. 2).

Cylindrical and elongated (Fig. 1), chorion (Fig. 3) provided with well developed perforations near apical extreme. Most of chorion and complete surface of operculum (Fig. 3) covered with a mucilaginous substance. Operculum with a lateral elevated pore (Fig. 4). Hexagonal ornamentation visible under substance covering operculum.

First instar (Fig. 5).—Total length 2.4–2.72 (\bar{x} = 2.53). Body (Fig. 5) not elongate.

Length of head 0.56–0.60 (\bar{x} = 0.58), width of head 0.28–0.29 (\bar{x} = 0.44). Head pyriform, homogenous pale brown without granulations. Pilosity on clypeus, pale brown. Eye prominent, red and brown. Width of eye 0.04–0.05 (\bar{x} = 0.045), interocular space 0.15–0.16 (\bar{x} = 0.156). Ocelli



Figs. 1–4. *Heza insignis*, eggs. 1, General aspect in lateral view. 2, Substance surrounding the eggs. 3, Chorion and operculum. 4, Pore of the operculum.

absent. Postocular region surrounded by a fine pale brown stripe. Rostral segments paler than rest of head. Pilosity present. Rostral length 0.65–0.74 mm (\bar{x} = 0.69), ratio of length of segments ca. 1:1.21:0.6. Antenna elongate, cylindrical, and filiform with pilosities, uniformly pale brown except two reduced bands in antennal segment 1. Antenna 2.82–3.40 long (\bar{x} = 3.18), ratio of length of segments ca. 1:0.43:0.55:0.5. Antennal segment 4 annulated. Neck differentiated from rest of head.

Thorax dark brown. Pronotum 0.23–0.26 (\bar{x} = 0.25), width of pronotum 0.21–0.23 (\bar{x} = 0.216). Pilosity and granulations absents. Spines of the anterior lobe absent. Median sulci present.

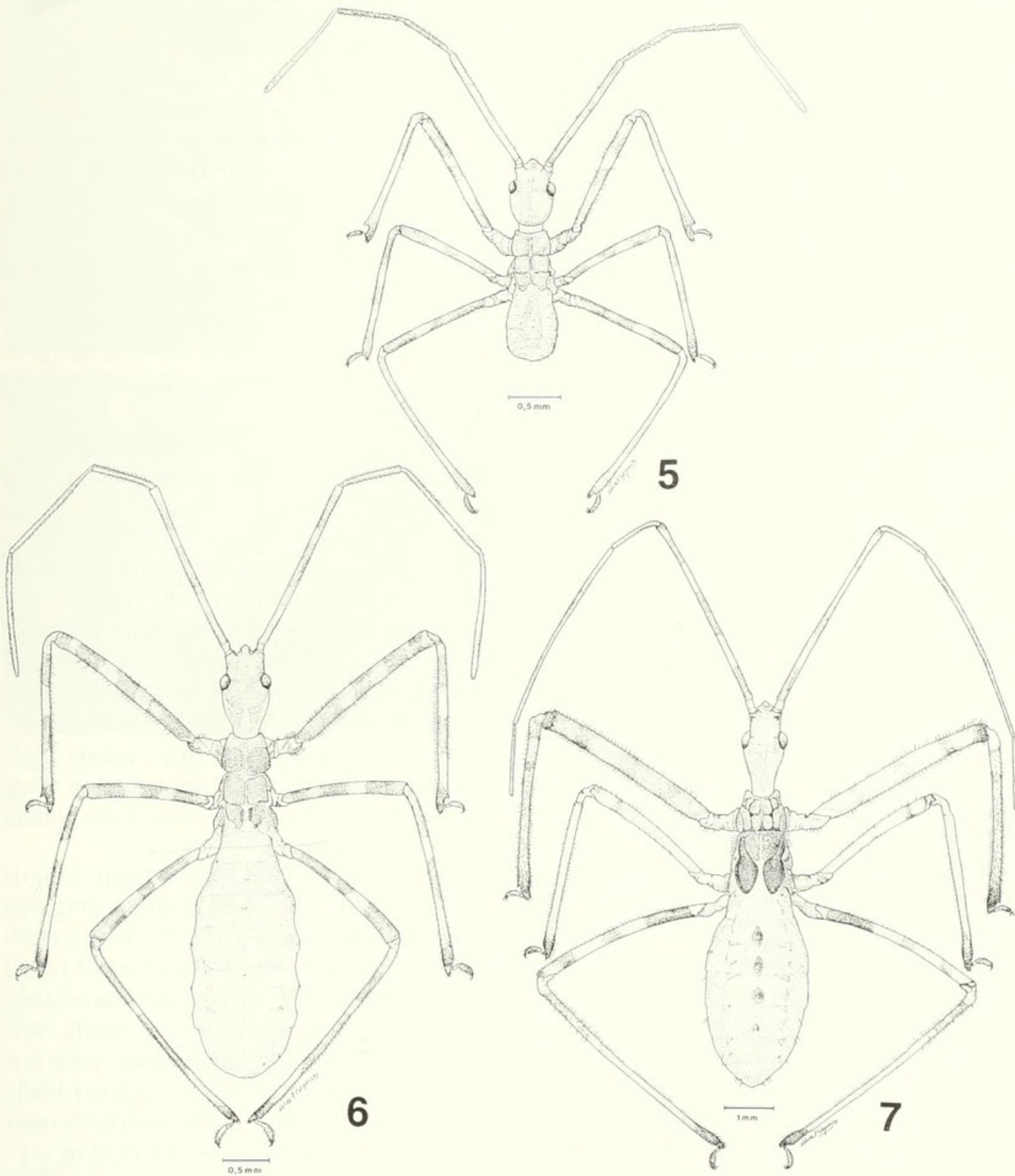
Legs pale brown, pilose. Two pale brown bands on femora and tibiae 1, 2 and 3. Tarsi dark brown.

Wing pads absent.

Abdominal length 0.43–0.46 (\bar{x} = 0.44), abdominal width 0.23–0.26 (\bar{x} = 0.24), abdomen pale brown. Abdomen rounded, light brown. Scent glands not visible.

Second instar (Fig. 6).—Total length 5.44–6.16 (\bar{x} = 5.86). Form (Fig. 6) and color similar to previous instar.

Length of head 0.47–0.49 (\bar{x} = 0.47), width of head 0.25–0.26 (\bar{x} = 0.256). Head more elongate than in first instar. Eye conspicuous and red. Width of eye 0.05–0.07 (\bar{x} = 0.06), interocular space 0.15–0.18 (\bar{x} = 0.17). Ocelli absent. Postocular region as in first instar. Rostral segments dark brown distad, pale proximad. Rostrum 0.44–0.49 long. (\bar{x} = 0.46), ratio of length of segments ca. 1:0.71:0.43. Antenna 2.45–2.5 long (\bar{x} = 2.48), ratio of length of segment ca. 1.0:32:0.67:0.73. Color of antennal seg-



Figs. 5–7. *Heza insignis*. 5, First instar. 6, Second instar. 7, Third instar.

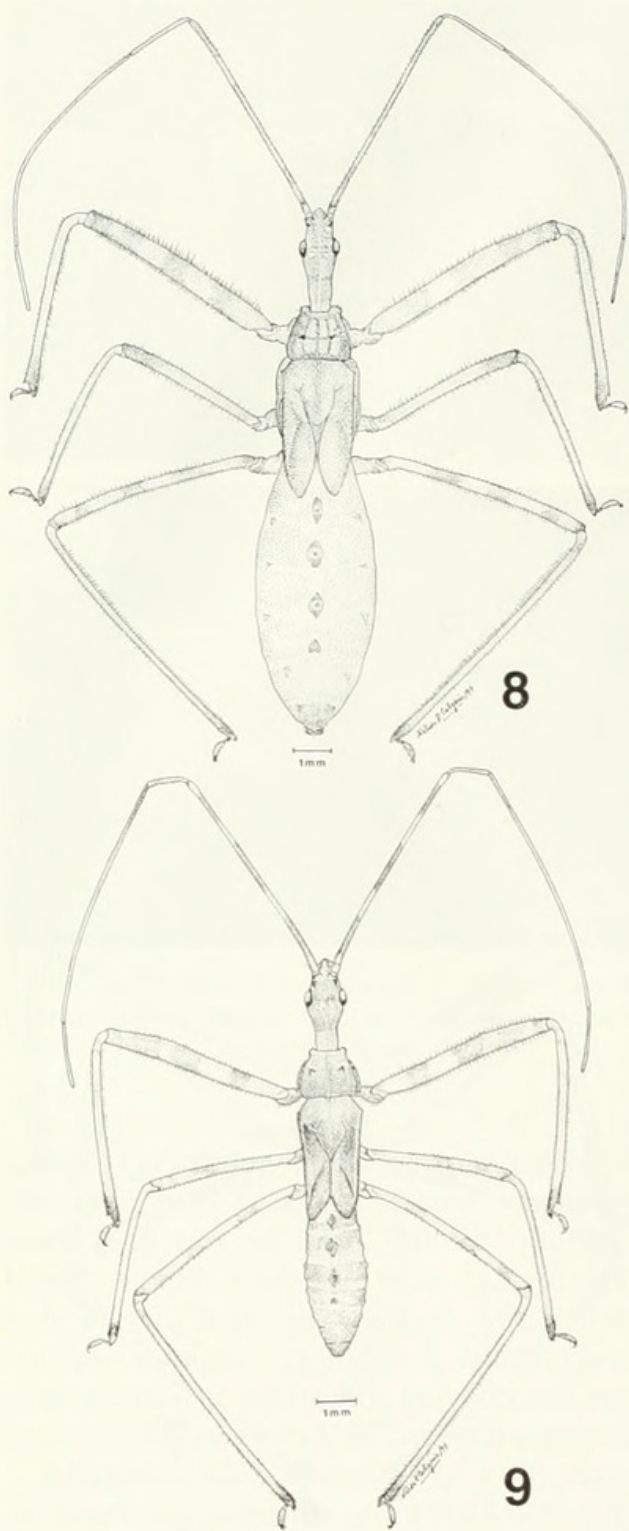
ments and ornamentation of segment 4 as in previous instar. Neck more differentiated from rest of head than in first instar.

Thorax dark brown. Pronotum 0.19–0.21 long (\bar{x} = 0.2), width of pronotum 0.28–0.29 (\bar{x} = 0.28). Median sulci present.

Wing pads 0.23–0.25 long (\bar{x} = 0.24), color dark brown.

Abdominal length 1.12–1.2 (\bar{x} = 1.17), abdominal width 0.56–0.60 (\bar{x} = 0.57). Abdomen less rounded than in first instar. Scent glands present on posterior border of abdominal segments 3–5, color not different from the rest of the abdomen.

Third instar (Fig. 7).—Total length 8.06–8.96 (\bar{x} = 8.44). Body (Fig. 7) elongate.



Figs. 8-9. *Heza insignis*. 8, Fourth instar. 9, Fifth instar.

Length of head 1.66-1.79 (\bar{x} = 1.74), width of head 0.83-0.89 (\bar{x} = 0.87). Head pyriform, uniformly dark brown with pilosity and rugosities. Eye red, prominent and rounded. Width of eye 0.22-0.23 (\bar{x} = 0.228), interocular space 0.37-0.40 (\bar{x} =

0.38). Ocelli absent. Postocular region similar to second instar. Rostral segments pale brown with pilosities. Rostral length 2.4-2.64 (\bar{x} = 2.5), ratio of length of segments ca. 1:0.81:0.27. Antenna 10.24-14.08 (\bar{x} = 12.18), ratio of length of segments ca. 1:0.25:0.71:0.48. Base of antennal segment 1 with dark spine. Segments 3-4 annulated. Neck well differentiated.

Thorax dark brown with pilosities and granulations. Pronotum 0.96-1.2 long (\bar{x} = 1.09), width of pronotum 0.88-0.96 (\bar{x} = 0.93). Anterior lobe with two spines and carina that extends laterally.

Legs uniformly pale brown, except some specimens showing two or three bands paler on femora and tibia 1 and 2. Pilosity as in second instar.

Wing pads dark brown. Length of wing pads 0.23-0.25 mm (\bar{x} = 0.23 mm).

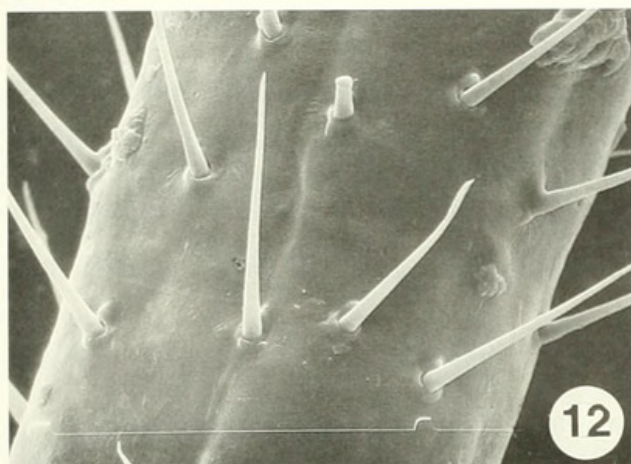
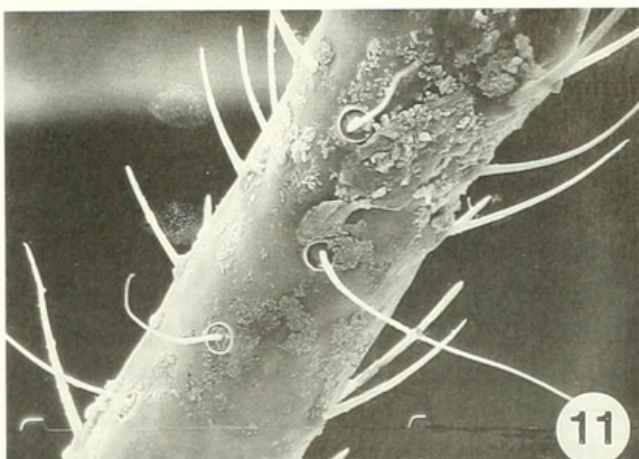
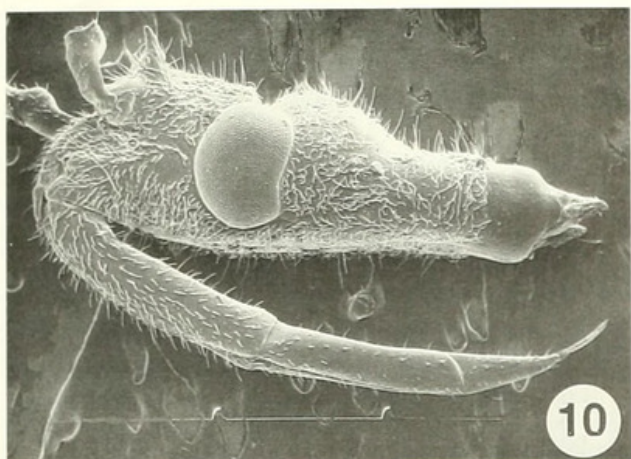
Abdominal length 3.71, abdominal width 1.4-1.53 (\bar{x} = 1.46). Abdomen fusiform pale brown with granulosities. Scent glands well developed on abdominal segments 3-5, consisting in a light brown papila with dark brown bases. Segment 6 with a dark brown spot in same position as scent glands of anterior segments.

Fourth instar (Fig. 8).—Total length 10.11-11.90 (\bar{x} = 11.21). Body (Fig. 8) similar to previous instar 1.15 (\bar{x} = 1.10).

Length of head 2.04-2.17 (\bar{x} = 1.82), width of head 1.02. Eye red and more conspicuous than in third instar. Width eye 0.12-0.16 (\bar{x} = 0.14), interocular space 0.8. Ocelli absent. Postocular region less rounded than in previous instar. Rostral length 3.28-3.68 (\bar{x} = 3.49), ratio of length of segments ca. 1:0.94:0.47. Antenna 17.76-19.04 long (\bar{x} = 18.18), ratio of length of segments ca. 1:0.22:1.13:0.3.

Thorax dark brown with pilosity and granulations. Pronotum 1.6-1.84 long. (\bar{x} = 1.7), width of pronotum 2.0-2.08 (\bar{x} = 2.04). Median sulci present and lateral sulci conspicuous.

Legs similar to those of the previous instar, femur 1 densely pilose on internal margin; wing pads 4.0-4.4 long (\bar{x} = 4.13).



Figs. 10–13. *Heza insignis*, fifth instar. 10, Head, lateral view. 11, Antennal segment 2 and a trichobothria. 12–13, Antennal segment 4.

Abdominal length 4.48–5.63 (\bar{x} = 5.2), abdominal width 1.4–2.04 (\bar{x} = 1.82). Abdomen pale brown, elongate with granulations. Connexivum with dark spots. Scent glands on segment 3–5, segment 6 as in third instar.

Fifth instar (Figs. 9–13).—Total length 13.31–14.59 (\bar{x} = 13.9). Body (Fig. 9) elongate, dark brown.

Length of head 1.92–2.17 (\bar{x} = 2.08), width of head 1.15. Head (Fig. 10) pyriform, homogenous dark brown without granulations. Dark brown pilosity. Eye prominent, red and rounded. Outlined red ocelli present. Width of eye 0.07–0.05 (\bar{x} = 0.06), interocular space 0.8–0.96 (\bar{x} = 0.9). Ocelli conspicuous red. Postocular region not rounded with a fine stripe pale brown. Rostral segments paler than the rest of head, without rugosities or granulosities. Rostral length 3.6–3.84 (\bar{x} = 3.7), ratio of length of

segments ca 1:0.95:0.36. Antenna 15.23–20.24 long (\bar{x} = 18.14), ratio of length of segments ca 1:0.52:0.97:0.3. Antenna elongate, cylindrical and filiform, pilosity dark brown. Segment 2 with a trichobothrium as in Fig. 11. Segments 3 and 4 (Figs. 12–13) as in previous instar. Base of antennal segment 1 with one conspicuous dark brown spine (Fig. 10).

Thorax dark brown with pilosities and granulosities. Pronotum 2.00–2.24 long. (\bar{x} = 2.08), width of pronotum 2.16–2.40 (\bar{x} = 2.32). Anterior lobe with two conspicuous dark brown spines and carina extending laterally. Median sulci and lateral sulci present.

Legs similar to those of present in fourth instar.

Wing pads 4.4–4.8 long (\bar{x} = 4.64), color dark brown.

Abdominal length 6.65–7.55 (\bar{x} = 7.29), abdominal width 3.2–4.48 (\bar{x} = 3.84), abdo-

men laterally darker. Abdomen elongate dark brown, reduced pilosity, granulated not rugated. External margin of connexivum darker. Scent glands as in previous instar.

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