

by a raised cluster of sensilla; galea a slight elevation. Labial palp a raised cluster of sensilla.

Material studied: Numerous larvae from near Gombak Field Studies Center (30 km N Kuala Lumpur), #139.

***Polyrhachis bihamata* (Drury)**

Figure 9

FIFTH INSTAR (=MATURE) LARVA. Length (through spiracles) ca. 11.5 mm. Similar to *P. muelleri* except as follows. Body hairs moderately numerous. Of 6 types: (1) 0.05-0.175 mm long, 5- to 10-branched, branches all in same plane, few on T1 and AX, numerous elsewhere; (2) 0.05-0.26 mm long, unbranched on dorsal and lateral surfaces of T1 and all surfaces of AX, on ventrolateral surfaces of T2-AIX; (3) 0.05-0.18 mm long, with stout basal portion, lanceolate with denticulate border, a few on each somite; (4) up to ca. 1.56 mm long, whip-like, on ventrolateral surfaces of T1-AIV and dorsal surfaces of AII-AVI (14 on AII, 16 on each AIII-AIV, 12 on each AV-AVI); (5) ca. 1.0 mm long, 2- to 5-branched, adjacent to type 4 hairs; (6) ca. 0.33 mm long, uncinuate, on dorsum, 14 on AVII, 8 on each AVIII-AIX, 6 on AX. Cranium subhexagonal, integument with short arcuate ridges and short rows of minute spinules; a small elevated area dorsolateral to each antenna. Head hairs moderately abundant (ca. 72), 0.05-0.26 mm long. Labrum with ca. 10 hairs and 6 sensilla on anterior surface. Labial palp a low knob.

FOURTH INSTAR LARVA. Length (through spiracles) ca. 8.6 mm. Similar to mature larva except as follows. Head hairs fewer (ca. 50), shorter (0.038-0.1 mm long), denticulate. Maxillary palp a short rounded peg; galea shorter but still digitiform. Labial palp similar to maxillary palp.

THIRD INSTAR LARVA. Length (through spiracles) ca. 7.6 mm. Similar to fourth instar except as follows. Head hairs of 2 types: (1) 0.05-0.11 mm long, unbranched, denticulate apically; (2) 0.125-0.16 mm long, 2- to 5-branched. Labrum with ca. 18 hairs (0.03-0.06 mm long), unbranched, with heavy base and slender tip. Maxillary apex digitiform, spinulose; palp a short frustum. Labial integument with short ridges, palp a short rounded knob.

SECOND INSTAR LARVA. Length (through spiracles) 4.9-5.1 mm. Similar to third instar larva except as follows. Integument sparsely spinulose. Body hairs sparse. Of 4 types: (1) 0.038-0.175 mm long, deeply 2- to 7-branched, on all somites; (2) 0.05-0.18 mm long, with stout shaft and denticulate apex, especially numerous of T1 and AX; (3) at least 0.8 mm long, whip-like, on all somites; (4) 0.25-0.33 mm long, uncinuate, on T2-AI and AVI-AX. Cranium subtrapezoidal, widest ventrally. Head hairs moderately numerous (ca. 53), 0.125-0.175 mm long, slightly curved shaft and sparsely to densely denticulate apex.

FIRST INSTAR LARVA. Length (through spiracles) 2.3-3 mm. Similar to second instar except as follows. A ventrolateral swelling on each side of T1. Body integument with minute spinules, those on venter of anterior somites and AIX, AX more prominent. Body hairs largely confined to area dorsal to spiracles, sparse. Of 2 types: (1) 0.075-0.8 mm long, uncinuate, shortest of T1 and AX; (2) up to at least 0.8 mm long, whip-like. Head hairs less numerous (ca. 32). Of 2 types: (1) 0.05-0.25 mm long, longest flexuous; (2) 0.05-0.075 mm long, uncinuate. Labrum with rugose integument; ca. 14 hairs (0.012-0.025 mm long) and 14 sensilla on anterior surface; ventral surface rugose; posterior surface rugose, with 12 sensilla. Mandible subtriangular, wider than long. Maxillary apex short paraboloidal, with short rows of minute spinules; palp a low knob, galea a short cone. Labial palp a small knob.

Material studied: Several larvae from Fenting Highlands (50 km N Kuala Lumpur) #173.

Polyrhachis lamellidens F. Smith (1970:649)