Palaemnema

Color pale ivory with the more heavily sclerotized areas of the labium (palps and distal convexity of mentum), mandibles (toothed margins), and legs (tarsal claws and comb-like setae of tibiae) of gradulated shades of brown. Gills almost uniformly tinted with brown on the specimen figured but much lighter on two less mature specimens. Head, thorax, and abdomen with extremely faint patterns as indicated in figure I. Ratio of widths of head, prothorax, pterothorax, segment 2, segment 10 equals:

Head flattened rectangular, four-fifths as long as wide, sides almost parallel, hind angles rounded. Fine hairs in transverse line anterior to the posterior margin of the head and continuous with the posterior margin of the eyes. Smaller hairs in a pattern over the head. Antennal segments (fig. 5) of the following relative lengths: 12:23:25:19:11:8:6.

Labium (fig. 2) shaped somewhat like that of a gomphine; when at rest reaching almost to the posterior edge of the prothorax. Prementum almost rectangular, distal and proximal margins equal in width, widest point two-thirds from distal end. Median lobe (ligula) convex, prominent, distal margin finely striated; cleft almost as deep as convexity, (margin unstriated) (fig. 11)
Striations, when labium examined under 100X and 430X magnification proved to be bases of spines protruding from the margin. Each spine (fig.12) is trumpet-shaped with the free margin divided into numerous 1/4 to 8 long and or outside + numerous small teeth of inner side. several short needle-like points. Base of each spine surrounded by a less sclerotized oval area separated from margin. Spines 13 in number on each side of median cleft with a group of 14 hairs on each side of the spines.

Labial palps smooth with neither setae nor serrations, each bearing a long movable hook with a heavy tapered tooth. On examination of the inner surface of the prementum with 100X and 430X magnification, half-moon shaped markings either indentations or rasp-like projections were revealed. These were present in 18 alternately arranged rows in the middle sector, bordered laterally by more closely arranged tiny dots.

Mandibles (figs.2, 4) each with four large incisor teeth (primary incisors, Gloyd 1963) on distal margin. Process on inner side of each mandible movable; that of right mandible with two medium-sized teeth (secondary incisors Gloyd) and of the left mandible truncated with twelve minute teeth and with a small, narrow, inwardly-directed spine mid-way toward base.
Maxillae (fig. 8') with three pairs of narrow hooks and one apical hook twice as long as the other six on each lacinia. Both margins of the palps and inner margin of lacinia with setae.

Lateral gills, each about 1/2 total length of body, saccoid, somewhat triquetral, tapering to the caudal filament one-sixth total length of gills. Minute colorless hairs on one-fifth of dorsal ventral ridges of expanded portion of lateral gills. Two gills missing from specimen figured. On a smaller specimen the middle gill is a little shorter than the lateral gills and is not saccoid. On another small specimen the middle gill is somewhat inflated.

The developing valves of the ovipositor are a little longer than segment nine. (Fig. 10)

Immature larva studied. Total length 19mm., gills 6mm, abdomen 9mm, hind femur 3mm.