vestiges. Mid-ventral prothoracic tubercles displaced laterally by the leg vestiges and a large median welt, which lies across anteroventral part of segment and is apparently not homologous with the tubercles. Each tubercle bears a single median nipple-like papilla, except the prothoracic ventrolaterals, which each carry 2 papillae, the anterior one with a pair of minute bristle-like sensilla. Tubercles and papillae vary in size and shape, as shown in the figures. Integument, apart from the surfaces of the tubercles, densely papilligerous; papillae 0·003–0·005 mm. high, arranged generally in transverse rows. Pilosity completely lacking.

Cranium large, subcircular in anterior view, slightly concave behind. Head naked, except for a few sensilla and some minute hairs. Antennae a pair of low flat subcircular elevations, each with 3 sensilla. Mouthparts only moderately prominent. Labrum small, semicircular, breadth at base slightly more than twice length; apical border entire, with a few small sensilla; posterior surface densely spinulose, the spinules arranged in arcuate rows. Mandibles long, narrow, moderately sclerotised, not greatly expanded at base; apex slightly curved posteriorly and drawn into a strong mesally inclined tooth, with 2 much smaller teeth on its inner border. Maxillae hemispherical. Palpi not peg-like, each represented by a group of 3 sensilla shaped as shown in figure 6. Galea closely adjacent to palpal sensilla, a relatively very small finger-like structure with a slender apical process. Labrum prominent. Palpi reduced similarly to those of maxillae, each represented by a group of 4 sensilla, shaped as shown in figure 7. Opening of sericteria small, slit-like. Hypopharynx spinulose, the spinules arranged in many short arcuate rows.

The *Probolomyrmex* larva is distinguished from those of all other known ponerine ants by the shape of the body and the unique posterodorsal suspensory organ, which is analogous (but clearly not homologous) with the dorsal "doorknob" tubercles found in some genera of the tribe Ponerini (*see* G. C. and J. Wheeler, 1952, 1964).

Pupa

This stage is known only for *P. angusticeps*, the pupae of which are unusual in that they lack cocoons. A very few other ponerine ants, including some species of *Amblyopone*, *Discothyrea* and *Ponera*, share this same negative characteristic. It is not a universal character in any of these genera and may not be in *Probolomyrmex*.

(3) *Life History and Biology*

Very little is known concerning the biology of *Probolomyrmex*. The few available ecological details indicate that most of the extra-Australian collections were made in rain-forest, or in islands of native forest in plantations. Nests in such situations are apparently located in leafmould or fragments of rotting wood on the forest floor. A shift in ecological preferences may have taken place in the evolution of the Australian *P. greavesi*; both collections of this species were made in drier forest types (open *Eucalyptus* woodland and an exotic *Pinus* plantation), in which the nests were located in the soil under rocks.

Some features of the social biology of *P. angusticeps* are described below (see page 360). These are based on the only known observations of a live colony of *Probolomyrmex*; unfortunately it is impossible to estimate whether certain features, particularly the peculiar aspects of larval and pupal life and such details as colony size and composition, are normal for the genus. Direct positive feeding records are not available, although the holotype worker of *P. brevirostris* was taken in a termite nest, where it may have been seeking prey. It is noteworthy that several other ponerine genera (*Discothyrea* and *Proceratium*), which have similar oral and anterior head structure to that of *Probolomyrmex*, are evidently obligatory arthropod egg predators (Brown, 1957). All known sexual forms of *Probolomyrmex* are of the normal winged type, so that colony proliferation probably includes a mating flight, as is usual in ants.

(4) *Systematic Position of the Genus*

Until recently *Probolomyrmex* was affiliated with *Proceratium*, *Discothyrea*, and other genera synonymous with them, in the spurious tribe Proceratiini Emery. This group was disbanded by Brown (1952, 1958), who showed that the "proceratiine habitus" of its included genera has evidently been convergently derived in several