

rounded (or ellipsoidal) foveae having thick, curving walls; or [1] at least those foveae on vertex and adjacent to scrobes with angular borders, and separated by thin, lamellar walls.

*Sculpture (cephalic) (major workers).*

**Character 1, states:** foveae [0] relatively small; or [1] large. **Character 2, states:** frons [0] lacking costate sculpture; or [1] sculpture present.

#### CHARACTERS ON CLYPEUS, MANDIBLES AND ANTENNAE

*Clypeal index.* The shape of the region of the clypeus between the frontal carina was measured as  $100 \times W/H$  where "W" is the minimum distance between the raised edges of the frontal carina, and "H" is the distance from the posteriormost point on the frontal area to the base of the medial clypeal hair. **Character states:** [0] at most 125; or [1] > 125.

*Clypeal rugae (minor workers).* Two longitudinal rugae extend through the clypeus from near the bases of the lateral clypeal hairs, delineating a medial clypeal region between them (e.g., Fig. 15). **Character states:** these rugae are [0] absent or incomplete; or [1] well-developed.

*Funicular index.* An index of funicular thickness: maximum width of funicular segments II and III (which are similar in shape) divided by the average length of the same segments (half the combined lengths of the segments). **Character states:** funiculi [0] thick, with index > 1.20 (or > 1.50 in majors); or [1] thinner.

*Lateral hair on clypeus (minor workers).* Long hair projecting forward at either side of medial hair from anterior margin of clypeus (Fig. 3). **Character states:** base of each lateral clypeal hair [0] not completely enclosed by a low wall; or [2] hair in a well-developed oval fovea (Fig. 3).

*Medial hair on clypeus (minor workers).* Hair projecting forward from ante-

rior margin of clypeus medially (Fig. 3).

*Medial clypeal lobes (minor workers).* A small, narrow projecting lobe located immediately to either side of medial clypeal hair, and mesad to the lateral clypeal hair (Fig. 3). **Character states:** lobes [0] feebly developed; or [1] strongly projecting.

*Medial projection (major workers).* **Character states:** [0] anterior margin of clypeus without a projecting medial lobe, although often with low, feebly rounded lobes (e.g., Fig. 17); or [1] projection present (Fig. 25).

*MI (Mandible index).*  $100 \times ML/HL$ .

*ML (Mandible length).* Distance between basal condyle and apical tooth of mandible.

*SI (Scape index) (minor workers; little variation in majors).*  $100 \times SL/HW$ . **Character states:** [0] at most 90; or [1] > 90.

*SL (Scape length).* The maximum length of the scape (excluding the wide flange at its base and the basal radicle beneath it).

*Ventral mandibular tooth (minor workers).* A tiny inward-projecting denticle present along the medioventral border of each mandible, where, in majors, a massive blunt projection is invariably present. **Character states:** denticle [0] absent, or [1] present.

#### CHARACTERS ON TRUNK AND LEGS

*Femur concavity.* **Character states:** ventral surface of each femur [0] convex or somewhat flattened; or [1] with a well-developed concave groove (at least in hind femora).

*Femur pilosity.* **Character states:** [0] each femur with at most two erect to sub-erect hairs visible in profile (in which case hairs typically present proximad on ventral face of shaft); or [1] hairier. *FLI (Femur length index).*  $100 \times HFL/HL$ . **Character states:** index [0] at most