

observation that *P. avium* differs from *P. avioide* by the less impressed sculpture, by the denser pilosity, and by longer antennal scapes (*P. avium* SI 87.3–88.6, *P. avioide* SI 81.8–83.3).

The measurements of Brown and de Andrade are not consistent, especially for the *P. avioide* material she examined. Brown noted measurements for the three collections (workers $n = 19$) as HL 0.92–0.98, HW .091–0.98, CI 96–101 SL 0.90–0.99. Brown did not calculate SI. De Andrade notes that for her *avium*: HL 1.05–1.12, HW .090–0.94, CI 84.5–85.7 SL 0.93–0.97, SI 87.3–88.6 and *P. avioide*, HL 1.10–1.16, HW .092–0.97, CI 82.1–85.1, SL 0.90–0.96, SI 81.8–83.3. Note that CI for Brown ranged from 96–101, while for De Andrade, CI ranged from 82.1–85.7.

One possible reason for these differences is the differences of HW and SL definitions. Based on the definitions presented above, I re-measured the type material using a calibrated micrometer (see Methods above). Measurements are presented in Table 3. These measurements confirm the relative differences between the Brown collections. However, when samples from the seven new collections are included, these differences become less distinct. The seven collections in the study, have even less impressed sculpture than *P. avium*, similar pilosity as *P. avium*, and longer antennal scapes than both *P. avium* and *P. avioide* (SI 98–103). Based on this study of Brown's material and the new collections in this study, I identify all these collections as one species.

The variation observed in these collections is interesting in such a small area. It is possible that because *P. avium* has ergatoid queens, and disperses presumably by budding with low dispersal ability, the complex topography of Le Pouce contributed to the observed variation. The possible restriction of the remaining population to the single forest patch at the base of the southeast peak, however, could severely limit the observed variation in the future.

***Proceratium google* Fisher, sp. nov.**

Figs. 14–17.

TYPE MATERIAL.—HOLOTYPE: Worker. MADAGASCAR: Antsiranana, 11.0 km WSW Befingotra, Réserve Spéciale Anjanaharibe-Sud, 14°45'S, 049°27'E, 1565 m, 16 Nov 1994 (coll. B.L. Fisher) sifted litter, montane rainforest, Collection code: BLF1232(6) — CASENT0100367, (CASC) PARATYPES: 2 workers with same data as holotype but with specimen codes CASENT010068 (BMNH), CASENT0100369 (MCZC); 1 worker 9.2 km WSW Befingotra, Réserve Spéciale Anjanaharibe-Sud, 14°45'S, 049°28'E, 1280 m, 5 Nov 1994 (coll. B.L. Fisher), CASENT0100370; (CASC); and 1 worker same as latter but collected at 1200 m on 9 Nov 1994, CASENT0100371 (CASC).

DIAGNOSIS.— The following character combination differentiates *P. google* from all its congeners: abdominal segment IV tergite evenly rounded posteriorly, without concave impression near apex and not hypertrophied; truncate median clypeal lobe; low nodiform petiole without peduncle but with blunt anteroventral tooth; fore tibia with a basal spine, frontal carinae separate and diverging posteriorly; posterior dorsum of mesosoma and propodeal spines granulate-foveolate. *P. google* is easily distinguished from *P. diplopyx*, the only other described *Proceratium* from Madagascar, by the shape of the tergite of the abdominal segment IV. In *P. diplopyx*, the tergite is with a deep

TABLE 3. Measurements and scape index of type material and new collections. MCZTYPE32216 is the holotype of *Proceratium avium*, MCZTYPE35017 is the holotype of *Proceratium avioide*.

Specimen number	HW	SL	SI
MCZTYPE35017	0.97	0.92	95
MCZTYPE32216	1.01	0.96	96
CASENT0055844	0.98	1.01	103
CASENT0055842	0.99	1.00	101
CASENT0059012	0.97	0.99	102
CASENT0059013	1.03	1.01	98
CASENT0059026	1.00	1.01	101
CASENT0059030	0.99	1.01	102
CASENT0059029	1.01	1.00	98
min	0.97	0.92	95
max	1.03	1.01	103