

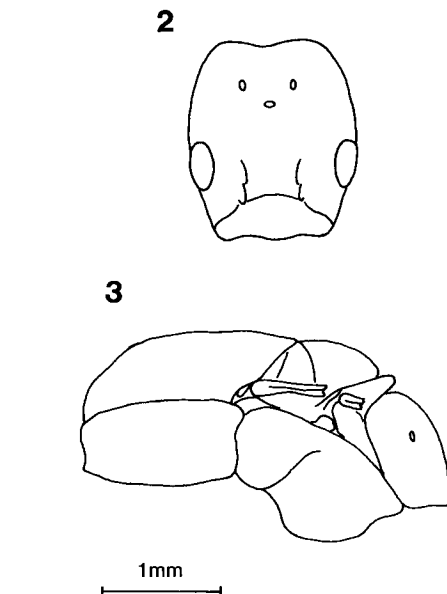
Figure 1. Bimodal distribution of GTC (number of setae on second gastric tergite of queens, exclusive of posterior row) for *Azteca alfari* group species. A. Samples of queens from throughout Costa Rica (see Material Examined under species treatments). B. Samples of queens from Venezuela, Estado Barinas.

lose and the other lightly pigmented and densely pilose (here referred to *A. alfari* sensu stricto and *A. ovaticeps*, respectively).

In Costa Rica, a character that separates the two species is the number of standing setae on the second gastric (fourth abdominal) tergite, exclusive of the posterior row. A survey of 81 queens from localities throughout Costa Rica reveals a strongly bimodal distribution for this character (Fig. 1). For a quantitative character such as seta number, a unimodal distribution would be expected were the sample from a single panmictic population. A sample from Venezuela revealed less differentiation based on abdominal setae (Fig. 1), but queens were strongly differentiated into two forms by the presence or absence of a dense brush of setae on the clypeus (Figs. 6, 11).

That the *alfari* group is composed of two sympatric species is also suggested by Harada (1982). In her study of *Cecropia*-inhabiting ants of Brazil, she observed a “brown form” and a “black form” of *A. alfari* queens from the Manaus area. Although color is not diagnostic, *A. ovaticeps* queens are usually light to dark brown, whereas *A. alfari* queens are typically black.

Alternative explanations for dimorphism include ecotypic variation in phenotype or intraspecific genetic polymorphism. Ecotypic variation is an unlikely explanation for the two forms because of the fine spatial scale on which they co-occur. Colonies of the two species are found inhabiting adjacent trees, and saplings frequently contain queens of both species. Intraspecific genetic polymorphism cannot be ruled out, but no cases of intracolony



Figures 2, 3. *Azteca ovaticeps* (syntype queen). 2. Frontal view of head. 3. Lateral view of mesosoma.

polymorphism have been observed, either among siblings or between colony queens and offspring. The two forms are probably non-interbreeding sympatric populations; they are different species.

AZTECA ALFARI GROUP

DIAGNOSIS (QUEEN)

Obligate inhabitants of Cecropia trees; head longer than wide (HL 1.50–1.72, CI 0.778–0.863), sides evenly convex, and occipital border neither broadly cordate nor deeply excavated (Fig. 2); scapes in repose fall about mid-way between upper margin of eye and occipital border (SL 0.71–0.85); eyes elliptical to somewhat reniform (EL 0.37–0.45); mandibles 7-toothed; mesosoma shape as in Figure 3; *mandibles largely nitid* with large, piligerous foveae, becoming alveolate at base; head, mesoscutum, and mesoscutellum densely and minutely punctate, dorsum of gaster minutely alveolate; body and appendages covered throughout with fine appressed pubescence; standing setae always present on dorsal and ventral surfaces of head, and on dorsum of pronotum, mesoscutum (often setae nearly absent), mesoscutellum, propodeum, petiole, and first gastric tergite; second gastric tergite always with a posterior row of setae, setae variably present anterior to this; standing setae variably present on femora, but *essentially absent on tibiae* (tibial setae, when present, restricted to the tibia apex, and rarely 1 to a few short setae irregularly placed elsewhere on the shaft); *scapes generally devoid of setae* except at apex, occasionally up to 10 short, subdecumbent setae of irregular lengths and spac-