Within the large genus *Azteca*, a few species are obligate inhabitants of *Cecropia* trees (Benson, 1985; Longino, 1989). These are *A. coeruleipennis* Emery, 1893, *A. constructor* Emery, 1896, *A. muelleri* Emery, 1893, *A. xanthochroa* (Roger, 1863), and *A. alfari* Emery, 1893. The latter three are species complexes with numerous infraspecific taxa. Species in the *A. alfari* complex can be distinguished from all other obligate *Cecropia* inhabitants by the lack of standing setae on the tibiae and scapes.

In this report, the *A. alfari* group is defined and revised. The species group is interpreted as a complex of two closely related, polytypic species, broadly sympatric in the Neotropics.

MATERIALS AND METHODS

COLLECTIONS

Collections are referred to by the following acronyms, following Arnett and Samuelson (1986).

LACM: Natural History Museum of Los Angeles County, Los Angeles, CA, USA
MCSN: Museo Civico de Storia Naturale "Giacomo Doria," Genoa, Italy
MCZC: Museum of Comparative Zoology, Cambridge, MA, USA
MHNG: Museum d'Histoire Naturelle, Geneva, Switzerland
USNM: National Museum of Natural History, Washington, DC, USA

Much of the non-type material on which this study was based is from personal, LACM, and MCZC collections. Personally collected material from Costa Rica, Colombia, and Venezuela has been deposited in LACM and national collections of the countries of origin.

METHODS

Measurements were made at 63× magnification, with an ocular reticule, and are accurate to the nearest 0.01 mm. All measurements are presented in mm. Sculpture terminology generally follows Harris (1979). Drawings of queens and workers were made freehand using a Zeiss dissecting microscope with an eyepiece grid. Male antennae were illustrated by photographing either dry-mounted specimens or slide-mounted antennae and tracing from the projected negatives. The following characters are used:

HL: Head length (workers and queens), measured in frontal view (occipital border and anterior border of clypeus in same plane of focus) along the midline, from a point level with the posteriormost points of the occipital lobes to the anterior border of the clypeus.
HW: Head width (workers and queens), measured in frontal view across the widest portion of the head above the eyes.
SL: Scape length, not including basal neck and condyle.
EL: Eye length on longest axis.
WL: Weber's length (workers and queens), straightline distance from anteriormost point of pronotum (near pro-mesonotal suture for queens) to posteriormost point of metapleural lobe, accurate to 0.05 mm.

The following indices are reported:

CI: HW/HL
SI: SL/HW

The following setal counts are used:

GTC: Number of standing setae on second gastric (fourth abdominal) tergite exclusive of posterior row, including portion of tergite that wraps laterally to the ventral side of the abdomen. Counted on queens only. The posterior row continues up the lateral margins of the tergite (on the ventral surface of the gaster). When GTC > 5, the setae are usually somewhat symmetrically arranged on the abdominal dorsum, with fewer on the lateral portions of the tergite.
MSC: Number of standing setae on mesonotum of workers. Very fine, short setae are included in the count, and often these fine setae are only visible at particular angles and proper lighting. When more than 10 setae are present, counting is difficult and requires constant repositioning of the specimen. Counts are made up to 19 setae, after which specimens are scored as ≥20. Also, this character is subject to specimen age bias, due to rubbing and presumed progressive loss of setae.

Measurement data are presented in tabular form to aid in comparing the two species. In choosing material to measure, an attempt was made to minimize nonindependence of samples due to close genetic relatedness. Usually only one specimen per caste per colony was measured, and from at most three colonies per collecting site.

For worker measurements, a single worker was chosen from among the largest workers in a nest series. Interpretation of measurement data is difficult for the polymorphic workers of *Azteca*. There are prolonged ontogenetic and/or colony size-specific changes in worker size distribution and color (pers. obs.). Workers in incipient colonies are small and darkly pigmented. Larger and/or older colonies exhibit a great variability in color and maximum worker size, but the largest and lightest-colored workers are generally from very large colonies. Allometric head-shape change produces variable head shape both within and between colonies. These conditions make worker size and head shape poor taxonomic characters. Worker measurements are reported here to distinguish the *A. alfari* group from other species groups, rather than to differentiate species within the group.

The frequent occurrence of sympatric sibling species in the *A. alfari* group, coupled with imprecise designation and labeling of type material by early workers, has resulted in uncertainty regarding types, and occasionally syntype series consist of more than one species. I have found it necessary to make extensive use of lectotype designations to fix names and establish synonymy. For many taxa, I have designated lectotypes from what I judge to be a single nest series (based on data labels), from the available syntype material.

EVIDENCE FOR SYMPATRIC SPECIES

Azteca alfari group queens can be found in large numbers colonizing *Cecropia* saplings (Longino, 1989). Prior to dominance by a single colony, each internode of a sapling may house one or more founding queens. At several sites, I have found that *A. alfari* group founding queens occur in two discrete forms: one darkly pigmented and sparsely pi-