nian satellite or satellite belt and to continue monitoring Neptune appulses and occultations.

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Myrmecia pilosula, an Ant with Only One Pair of Chromosomes

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A new sibling species of the primitive Australian ant *Myrmecia pilosula* has a chromosome number of $n = 1$. C-banding techniques confirm that the two chromosomes of workers are homologous. Males are haploid, as in other Hymenoptera, and their somatic cells contain only a single chromosome. This new species is potentially of great importance in both laboratory and field studies on gene organization.

A MINIMAL CHROMOSOME NUMBER provides a simple and ideal system for genetic study. Until now, a chromosome number of $n = 1$ has been found in only one eukaryote, the nematode *Parascaris equorum univalens* (*1*). This nematode has a highly aberrant genetic system with a single pair of holocentric or polycentric chromosomes only in the germ cell line (*2*). Somatic cells contain numerous small chromosomes produced by fragmentation of the large pair of chromosomes during zygotic cleavage (*2*).

Standard insect chromosome preparation techniques were used (*3*). Chromosome spreads were made from the diploid somatic tissues of worker ovary follicle cells and worker pupal and prepupal cerebral ganglia. Spreads were also made from the haploid male pupal and prepupal cerebral ganglia. C-banding was achieved with routine staining with Stains-all (Serva, Heidelberg). Consistent and convincing G-banding was not achieved, however (*4*).

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All 20 worker chromosome preparations revealed large numbers of chromosome spreads containing only two large chromosomes. The chromosomes are of identical size and are both submetacentric with identical arm ratios. C-banding confirmed that the two chromosomes are homologous (Fig. 1A). All 15 male chromosome preparations showed numerous cells containing only a single chromosome. The chromosome was clearly identical in banding and morphology to the worker chromosomes (Fig. 1B).

Myrmecia pilosula (F. Smith) is of particular interest in studies on karyotype evolution. Originally described as one species, it is now known to consist of several karyotypically distinct sibling species. Other sibling species of *M. pilosula* have diploid chromosome numbers of 9, 10, 16, 24, 30, 31, and 32 (*3*).

The new sibling species discussed here was collected from Tidbinbilla Nature Reserve near Canberra, Australia, on 24 February 1985. The colony collected contained winged males and females plus a mated queen together with pupae and more than 100 workers. The colony has successfully reared workers and males in the laboratory.

Unfortunately, attempts to find further $n = 1$ colonies at Tidbinbilla and nearby locations have so far been unsuccessful. The search is hampered by the presence of other *M. pilosula* siblings currently indistinguishable morphologically from the $n = 1$ sibling. A taxonomic study of the *M. pilosula* group is therefore a high priority.

Eusocial insects tend to have higher chromosome numbers than their phylogenetic relatives (*5*), although the reason for this trend is in dispute (*5, 6*). The discovery of this highly eusocial insect with the lowest known insect chromosome number was therefore particularly unexpected.

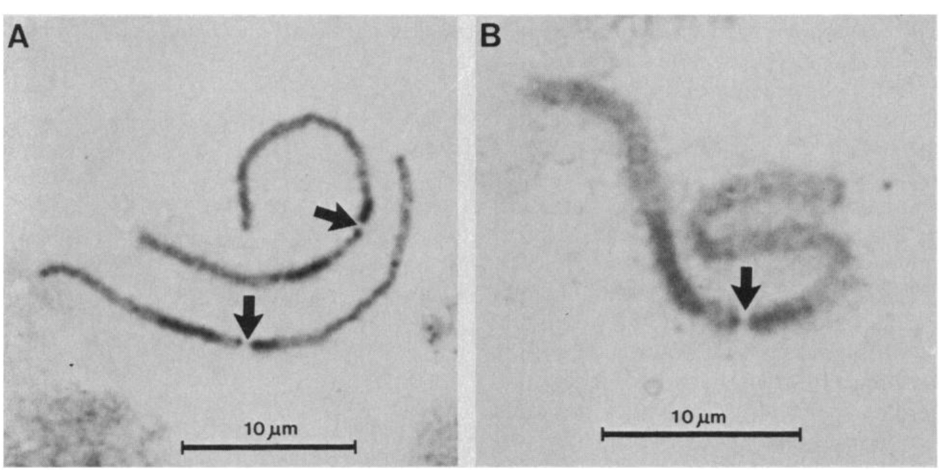

Fig. 1. Chromosomes from prepupal cerebral ganglia. (A) Worker prometaphase chromosomes. Identical C-banding provides evidence for homology of the two chromosomes. (B) Male prometaphase chromosome. Chromosomes consistently display a large centromeric C-band on the short arm and a smaller centromeric C-band on the long arm. Most of the short-arm C-band is not immediately adjacent to the centromere, though a very small portion of the short-arm C-band is centromeric. Arrows indicate position of centromere.

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