

berryi of the Tennessee Eocene, long considered to be a ponerine, was recently placed in the horntail family Pseudosiricidae by Smith (1978) and by Rasnitsyn (1980). F. M. Carpenter, the original describer of this species, concurs with this placement (Carpenter, personal communication). Finally, a winged queen found in the mid-Eocene oil shales of Messel, Germany, has been placed in either the Dolichoderinae or Formicinae by Gahl and Maschwitz (1977). This is a reasonable approximation, but the specimen is so poorly preserved that an alternative subfamily assignment—even to some as yet unrecognized, extinct group—cannot be excluded.

It is clear, then, that in order to understand the key events of ant evolution the most crucial time frame in which to study fossils is the Upper Cretaceous to Middle Eocene. I report here two recent important finds: the first ants from the Cretaceous amber of Canada, representing a new species of *Sphecomyrma*; and a small sample of workers from the mid-Eocene amber of Arkansas, representing three of the most advanced subfamilies of ants (Myrmicinae, Dolichoderinae, Formicinae).

***Sphecomyrma canadensis*, new species**

(Figs. 1, 2)

Diagnosis. Closely resembling *S. freyi* of the New Jersey amber (Magothy Formation, mid-Cretaceous) in most of its visible traits, differing in its smaller size (Head Width of holotype 0.66 mm as opposed to 1.00 mm in *freyi*), somewhat more robust alitrunk, and proportionately shorter third funicular segment (which is about as long as the second funicular segment, as opposed to slightly more than twice as long in *freyi*).

Holotype worker. Head Width 0.66 mm, Head Length 0.66 mm, Scape Length 0.50 mm, length of alitrunk 1.32 mm. A relatively well-preserved worker collected *in situ* in the Cretaceous "Canadian amber" deposits near Medicine Hat, Alberta. J. F. McAlpine, CAS 330, deposited in the Biosystematics Research Institute, Ottawa, Canada.

Paratype worker. Length of alitrunk 1.57 mm. A poorly preserved worker in the Medicine Hat amber provisionally placed in the same species as the holotype. J. E. H. Martin and J. F. McAlpine, CAS 205, deposited in the Biosystematics Research Institute, Ottawa, Canada.