

A New Species of *Pauesia* (Hymenoptera: Braconidae, Aphidiinae) From Georgia and Introduced Into South Africa Against the Black Pine Aphid (Homoptera: Aphididae)¹

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ABSTRACT A new North American species of the braconid genus *Pauesia* is described from Georgia. This species has been introduced into South Africa where it has become effective in the biological control of the black pine aphid, *Cinara cronartii*.

KEY WORDS *Biological control, aphids, black pine aphid, parasitic wasp, Braconidae, Aphidiinae, Pauesia, Cinara cronartii, Pauesia cinaravora.*

The black pine aphid, *Cinara cronartii* Tissot and Pepper, is a native of the southeastern United States where it is associated with the rust *Cronartium fusiforme* Hedgc. and Hunt on trunks or branches of pine trees. This aphid was first discovered in South Africa in 1974 and occurs in damaging numbers during winter when pine trees are slow growing or dormant (van Rensburg 1979, 1981). In 1982 and 1983 a search for natural enemies was made in Georgia and Florida by N. J. van Rensburg (Plant Protection Research Institute, Pretoria, Republic of South Africa) with the discovery of an undetermined species of *Pauesia* attacking the aphid (Kfir et al. 1985). This wasp was released in several areas in the Transvaal and Natal and has become established. The following description is presented to provide a name for this species.

The genus *Pauesia* Quilis is a small group of 14 North American species (about 45 worldwide) which is distinguished from most other aphidiine genera by the large wide areola on the propodeum (Fig. 3). The only taxonomic study of this genus was made by Smith (1944) who presented a key and descriptions to the species which he placed in the subgenus *Protaphidius* of the genus *Aphidius*.

Hosts are restricted to aphids in the subfamily Lachninae. Most of the North American species of *Pauesia* attack aphids in the genus *Cinara* Curtis, but one has been recorded from species of *Schizolachnus* Mordvilko. Tissot and Pepper (1967), in their description of *Cinara cronartii*, stated "The braconid *Aphidius* (*Protaphidius*) *bicolor* Ashmead has been reared from it." I have not been able to locate any specimens which would substantiate this record, but it is possible these parasites were actually the new species described herein.

Pauesia cinaravora n. sp.
(Figs. 1, 3-7)

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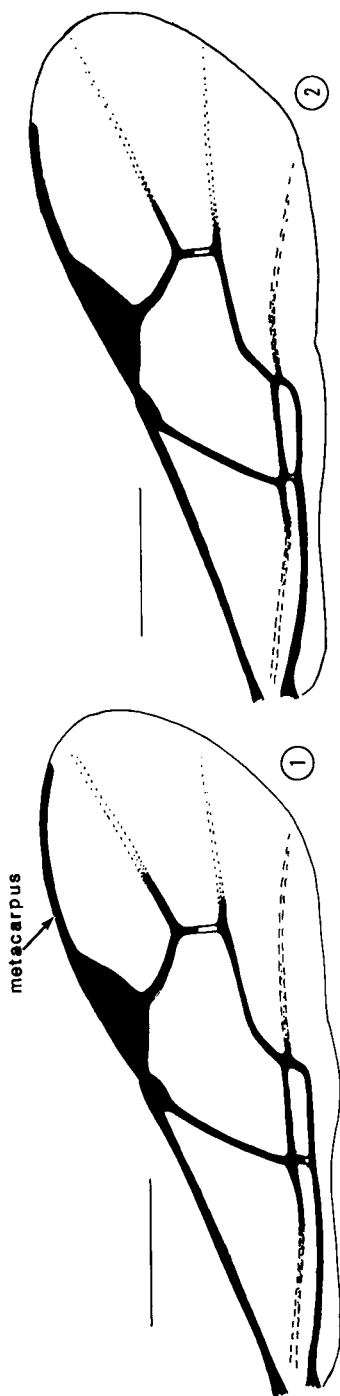


Fig. 1-2. Fore wings of *Pauesia* spp. 1. *P. cinaravora* n. sp. 2. *P. takomaensis* (Smith). Scale bar = 0.2 mm.

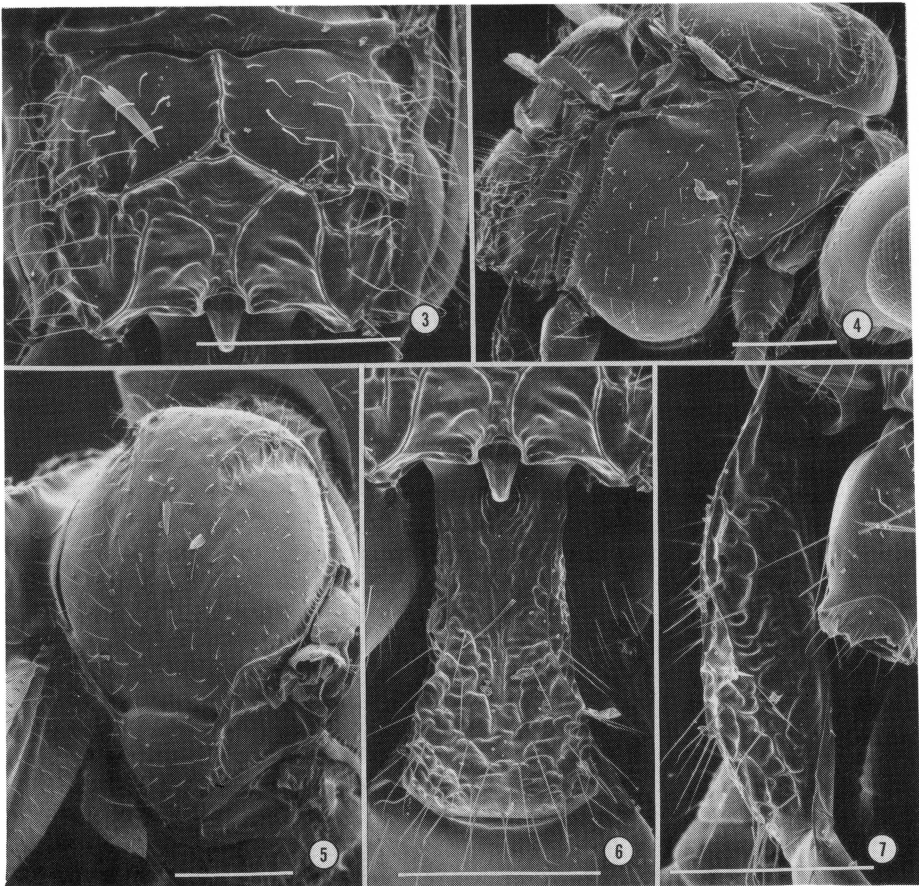


Fig. 3-7. Scanning electron micrographs of *Pauesia cinaravora* n. sp. 3. 3. Propodeum, dorsal view. 4. Thorax, lateral view. 5. Mesonotum, dorsal view. 6. Petiole, dorsal view. 7. Petiole, lateral view. Scale bar = 0.5 mm.

Female. Length of body: 2.3-2.7 mm (mean 2.5 mm in 23 specimens). Color: head dark brown, face occasionally yellow, at least yellow just below antennal insertions; mouthparts yellow; scape yellow, pedicle brown, yellow at apex, flagellomeres dark brown; thorax brown to dark brown, prothorax occasionally honey yellow at least on lower half, mesonotum and propodeum occasionally honey yellow on lower half; legs yellow or honey yellow; first abdominal segment (petiole) honey yellow, second segment brown, yellow at base, remainder of segments dark brown; ovipositor sheaths dark brown. Head: length of eye about 4.5 times malar space; face about twice as wide between eyes as long between clypeus and antennal sockets; antenna usually with 18 antennomeres, occasionally with 19, middle flagellomeres short, about 1.5 times longer than wide, first flagellomere slightly longer than second. Thorax: mesonotum (Fig. 5) smooth and polished,

occasionally rugulose or punctate anteriorly, notauli indicated only anteriorly for about $\frac{1}{3}$ their length, scrobiculate; pro- and mesopleura (Fig. 4) smooth and shining; propodeum (Fig. 3) rugose laterally and within wide areola, areola margined by strong dorsal and lateral carinae. Wings (Fig. 1): stigma of fore wing about 3 times longer than wide; metacarpus at least as long as stigma, sometimes longer, distance along wing margin between apex of metacarpus and radius equal or less than first segment of radius; first and second segments of radius about equal in length, intercubitus about half length of first segment of radius. Abdomen: first segment (petiole) slightly wider at apex than at spiracles, rugulose dorsally and laterally, smooth near base (Figs. 6, 7); ovipositor sheaths bluntly rounded, distinctly hairy, hair about as long as hair on abdominal terga.

Male. Essentially as in female except antenna with 20-21 antennomeres.

Type Material. Holotype female: Athens, Georgia, USA, November 1982, N. J. van Rensburg, host *Cinara cronartii*. Deposited in U. S. National Museum, Washington (USNM). Paratypes: 1 male, same data as holotype; 1, female, 1 male, Hartwell, Georgia, December 1982, host *Cinara pinivora*; 7 females, 5 males, Athens, Georgia, USA, October 1983, N. J. van Rensburg, host *Cinara cronartii*; 14 females, 8 males, Jessievale, Transvaal, South Africa, June 1988, N. J. van Rensburg, host *Cinara cronartii*. Deposited in the USNM and the South African National Collection of Insects, Pretoria.

Etymology. The species name is based on the generic name of the host, *Cinara*, and the Latin *voro*, to devour, in reference to its attacking aphids in this genus.

Remarks. This species will run to *P. takomaensis* (Smith) in the key to North American species of *Pauesia* by Smith (1944) by virtue of its nearly unicolorous thorax and short notauli. However, *cinaravora* n. sp. is distinguished by the longer metacarpus in the fore wing which is usually longer than the stigma (Fig. 1) (in *P. takomaensis* (Fig. 2) the metacarpus is slightly shorter than the stigma), and by the fewer antennomeres (*P. takomaensis* has 19-20).

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