

Matua from Pacific islands, 29 Jan 1952, Dept of Agriculture, Auckland (NZAC).

OTHER MATERIAL: ND: 1 major, 5 minors, Kerikeri, Long's orchard, 18 Jan 1956, K. A. J. Wise, ex rotting orange (NZAC). 6 minors, Kerikeri, Homestead, 17 Jan 1956, K. A. J. Wise, ex rotting orange (NZAC). 1 minor, Kerikeri, 19 Mar 1946, W. Cottier (NZAC). 2 minors, Kerikeri, 19 Mar 1941, W. Cottier (NZAC). 9 majors, 53 minors, (60 larvae) (Acc. No. 1596), Kaikohe, 29 Aug 1972, D. G. Gibbs, nest in failing pasture (PANZ). 1 major, 1 minor (Acc. No. 2414), Kerikeri, 13 Feb 1974, Gosney, lawn (as *P. megacephala*) (PANZ). 8 majors, 12 minors, 9 reproductives, Kapiro, Waipapa [near Kerikeri], 14 Mar 1974, R. A. Cumber (NZAC). 2 majors, 3 minors, Kerikeri, Aroha I., 6 Jun 1981, E. C. S. Little, indoors (NZAC). 6 majors, 1 minor (Acc. No. 7370), Kerikeri, 24 Nov 1995, W. M. Sims, in samples of plant material for analysis (PANZ/NZAC). AK: 3 majors, 3 minors (Acc. No. A140), Auckland, Nov 1981, Mrs G. Gibson, in garden (PANZ). 1 major, 1 minor, 1 reproductive, Ep-som, 22 Dec 1984, E. C. S. Little (NZAC).

DISTRIBUTION: Australia; New Zealand—ND, AK.

REMARKS: Cumber (1959) remarks on having seen this species (as *Pheidole yarrensis* Forel) in Kaikohe and at Whangaparaoa (AK).

DISCUSSION

Interceptions

N.Z. Plant Protection Centre—Lynfield interception records (not included, owing to their large number) show that *Pheidole* is the most commonly intercepted genus of ant on the New Zealand border, recorded on average three times a month. The most common areas of origin are the Pacific, Asia, and Australia, as contaminants on timber, fresh fruit and produce, and in containers or holds of ships. Identification to species level is not always possible owing to the lack of keys to this genus, but all ant interceptions, including *Pheidole* species, are given quarantine status. Produce coming into New Zealand is thoroughly inspected; however, when an entire nest of *Pheidole* sp. is found inside an orange with only an ant-sized exit hole, or an entire nest arrives inside a section of raw sugar cane, the scale of the task can be appreciated. It is easy to see why *P. megacephala* became established around the former City Markets (fruit, produce, and flower auction) on the Auckland waterfront. As the markets have now

been relocated, the population's main food source is probably food scraps in public rubbish bins in the area. It is noteworthy that the recently established Argentine ant *Linepithema humile* co-exists with *P. megacephala* in the same area.

Current and potential distribution

Three species of the genus *Pheidole* are distributed through the northern North Island of New Zealand; one record from Fiordland is considered questionable. All three species have been collected from the Auckland region. *Pheidole vigilans* has also been collected from Northland, and *P. rugosula* has also been collected from Waikato.

Pheidole megacephala, the big-headed ant, is believed to be native to Africa, but now rates as one of the most widespread and economically important of all pest ants in the world. It invades houses, stores, and factories, and is known to tend homopterans injurious to garden and horticultural crops. *P. megacephala* is generally held by naturalists (e.g., Solem 1970; Hölldobler & Wilson 1990) to be one of the agents most destructive to the lowland native Hawaiian invertebrate fauna. It was first recorded in New Zealand in 1942 in Newmarket, Auckland (Port Agricultural Service Digest records 1952, but specimens in NZAC have 1942 on their label data). From 1965 to 1972 it was intercepted 135 times (PAS Digest No. 73/1, June 1973). It is clear that *P. megacephala* is now established in Auckland at several localities, most notably at the former site of the City Markets, where it was recently collected again at a site originally collected in 1979. However, since this species is pantropical in distribution, it is possible that climatic factors will restrict its spread, so that it is unlikely to become an important threat to the endemic invertebrate fauna throughout New Zealand. Warwick Don (University of Otago) has determined five minors labelled "East Sisters (Sister?) I., The Sisters, Chatham Is, 12 Feb 1974, A. Wright" as *P. megacephala*, but considers the record to be questionable (pers. comm.).

P. rugosula (first recorded in New Zealand in 1958) is the most commonly collected of the three *Pheidole* species. Australian in origin, it has been collected extensively from the urban areas of central Auckland, but not from Northland. The record from Secretary Island, Fiordland, is puzzling. Since no other specimen of *Pheidole* has yet been recorded south of Waikato, we are inclined to view this as a wrongly labelled specimen. However, the records of *P. rugosula* from a Morrinsville garden and the Raglan waterfront indicate that this species could