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Note

The Collection of an Adventive Exotic Thrips—*Cartomothrips* sp. (Thysanoptera: Phlaeothripidae)—in California

The purpose of this note is to record the collection of an exotic thrips, *Cartomothrips* sp., in California on the San Bruno Mountains in San Mateo County, on two occasions, the first in 1976 and the second in 1979. This genus was previously known to occur only in Australia and New Zealand.

The first collection was made during mid-day of September 9, 1976. This had been a hot day for what in the summer is frequently a cool foggy locality. While collecting on a rock outcrop, there had been many small thrips and micro-Hymenoptera that had been annoying to me. These had settled on my perspiring face and neck, with some walking about and some biting. Samples of these pestiferous species were made in addition to the Tachinidae that I visited this rock outcrop to collect. The thrips included one specimen of *Limothrips angulicornis* (Jablonowski) and 17 specimens of *Isoneurothrips australis* Bagnall. The Hymenoptera included two male *Copidosoma* sp. and one male Encyrtinae (? Ooencyrtini) of the family Encyrtidae (identified by Gordon Gordh), several specimens of *Inostemma* sp. of the family Platygastridae (identified by Paul M. Marsh), and four males of *Leptothorax* sp. of the family Formicidae (identified by Roy R. Snelling). When leaving the area by a path in open grassland with some shrubbery, the first *Cartomothrips* here recorded was felt crawling on the writer's face and it was collected. It was noted to be a much larger and darker thrips, in comparison to the smaller thrips collected earlier.

The specimens of thrips were sent to Tokuwo Kono, who identified the *Limothrips* and *Isoneurothrips* reported above, but was unable to identify the phlaeothripid. The female phlaeothripid specimen was then sent to Kellie O'Neill. In a letter dated February 4, 1977, she reported that Steve Nakahara had identified the specimen as a member of the genus *Cartomothrips* Stannard. O'Neill further commented that she had identified "an unknown species of *Cartomothrips* in 1969 from New Zealand, *Eucalyptus melidora* seed, intercepted at San Francisco (no. 43766), December. As far as Nakahara and I know (cataloguing of thrips stopped effectively in 1965 here) there are no other records of this genus, ..."

The second collection of a specimen (male) of a *Cartomothrips* (Fig. 1) was made on February 3, 1979, at the lower part of the Guadalupe Parkway, along Colma Creek, at the edge of a planting of *Eucalyptus globulus* Labillardière. The specimen happened to enter my insect net while I was collecting other insects. The large size and dark coloration of the thrips made me to suspect it as being a *Cartomothrips,* and this was subsequently confirmed by Nakahara.

The genus *Cartomothrips* was described by Stannard (1962, Proc. R. Entomol. Soc. Lond. (B) 31(3/4): 38) with two included species—*C. browni* Stannard (1962: 39–40) with type-data for the holotype female and two female paratypes "AUSTRALIA: McCrae, Arthur's Seat, Victoria" from "dead leafy wattle branches" (family Leguminosae) and *C. manukae* Stannard (1962: 40) with type-data for the holotype female and 19 female paratypes "NEW ZEALAND: Dusky Forest"

Fig. 1. *Cartomothrips* sp., male.

from "seed heads of manuka (*Leptospermum scoparium*)" (family Myrtaceae). Most recently, Mound and Walker (1982, J. Nat. Hist. 16: 305–313) have revised *Cartomothrips* and described two new species, one from Australia and the other from Australia and New Zealand—*C. laughlini* Mound and Walker with type-data for the holotype female and 19 female and male paratypes "AUSTRALIA, South Australia, Berri Forest Reserve, *Morgania glabra*" (family Scrophulariaceae), and *C. neboissi* Mound and Walker with the holotype from "AUSTRALIA, Victoria, nr. Alexandria, *Leptospermum ericoides*" (family Myrtaceae) and 27 paratypes from 3 localities in Australia and 12 paratypes from 9 localities in New Zealand, from beating manuka and kanuka (family Myrtaceae), dead wood, cut *Solanum mauritianum* Blanco (family Solanaceae), on *Daucus carota* L. (family Umbelliferae), and beating *Muehlenbeckia* sp. (family Polygonaceae). Mound has studied the two specimens of *Cartomothrips* collected in the San Bruno Mountains, and, in a letter dated 5 April 1982, commented that they may possibly represent an undescribed species.

Cartomothrips spp. are thought to be fungus-feeders on dead twigs and leaves

(Mound and Walker, 1982: 305). McClintock and Knight (1968, Proc. Calif. Acad. Sci. (4) 32(20): 587–677, 14 figs., 5 pls.) present a flora of the San Bruno Mountains that include several introduced plants of the Australian Realm on which fungal hosts may be associated. These include Green Wattle, *Acacia decurrens* Willdenow and two other acacias—*A. melanoxylon* R. Brown and *A. retinodes* Schlechtendal. *Eucalyptus globulus* (Blue Gum) which is a native of Tasmania and Victoria, Australia, occurs in stands on various parts of the San Bruno Mountains, including the Guadalupe Parkway.

Based on the casual encounters of this thrips that I have made, I suspect that *Cartomothrips* sp. may develop sizeable populations.

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Note

The Status of *Aphelinus varipes* (Foerster) and *Aphelinus nigritus* Howard (Hymenoptera: Aphelinidae)

The greenbug, *Schizaphis graminum* (Rondani) (Aphididae), was first recorded in the U.S. in 1882 (Webster and Phillips. 1912. U.S. Dep. Agric. Bur. Entomol. Bull. 110, 153 pp.). Its origin is unknown, but Webster and Phillips (1912) recorded it from Europe, Asia, and Africa by 1910. Howard (1908. Entomol. News 19: 365–367) described *Aphelinus nigritus* from six specimens (USNM type #12032) reared from the greenbug in South Carolina during the 1907 outbreak. *Aphelinus varipes* (Foerster) (1841. Beiträge zur Monographie der Pteromaliden Nees, 1. Heft. Aachen), was first introduced to California against *Aphis gossypii* Glover and later to Oklahoma against the greenbug (Jackson et al. 1970. J. Econ. Entomol. 63: 733–736). Specimens of *A. varipes* from Europe have also been sent to Missouri (R. Kirkland, personal communication) and Texas (F. Gilstrap, personal communication) for greenbug control.

Graham (1976. Syst. Entomol. 1: 123–146) studied the British *Aphelinus* and showed *A. varipes* to be a color-variable species. *Aphelinus nigritus,* however, has