

# Taxonomic Notes on *Pseudococcus elisae* Borchsenius, a Mealybug New to the Hawaiian Fauna (Homoptera: Pseudococcidae)<sup>1</sup>

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## ABSTRACT

The discovery in Hawaii of a Central American banana-infesting mealybug, *Pseudococcus elisae* Borchsenius, is discussed. The adult female stage is illustrated and morphological characters which are useful in separating this species from the closely related *Pseudococcus affinis* (Maskell) (formerly known in Hawaii under its synonym *P. obscurus* Essig) are enumerated. Host and distribution data for *P. elisae* are also given.

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*Pseudococcus elisae* was described from specimens taken on bananas from Columbia at Leningrad, U.S.S.R. (Borchsenius 1948). Because the description was not fully illustrated and the type specimens were not readily available, this name has been largely ignored by western coccid taxonomists. During 1967, I was asked to identify specimens of a mealybug which was reported to be heavily infesting banana fruit on plantations in Central America. After consulting Borchsenius' paper, it was apparent that an examination of authentic specimens of *P. elisae* would be necessary to determine if the Central American species was identical. In 1968, through the efforts of the late Professor Howard McKenzie of the University of California, Davis, the holotype of *P. elisae* was obtained on loan from the Zoological Institute of the Academy of Sciences of the U.S.S.R., in Leningrad. Professor McKenzie died before he could study the holotype specimen. However, both Dr. Douglas Miller of the USDA, ARS, Insect Identification Laboratory at Beltsville, Maryland and I examined the type and concluded that the Central American specimens from banana were conspecific with it.

Nakahara (1981) reported *P. elisae* from the Hawaiian Islands on the basis of a single quarantine interception at Honolulu during 1959. However, because extensive collecting by myself and others failed to find this mealybug, it was not believed to be established here until quite recently.

During December 1984 *P. elisae* was intercepted in quarantine in California on red ginger, *Alpinia purpurata*, from Kaneohe, Oahu. A collection made at the source of the infested ginger by A. Endo, R. Macpiniae and K. Teramoto, of the Hawaii State Department of Agriculture, confirmed the presence there of an established population. More recently (June 1985) *P. elisae* was collected at Hoolehua, Molokai on *Aglaonema* sp. by P. Conant and R. Heu. As of July 1985, these have been the only confirmed occurrences of *P. elisae* in Hawaii. In view of the economic importance of this species to the banana industry of Central America, it should be treated as a potentially serious new pest in Hawaii.

In the descriptive notes which follow, *P. elisae* is contrasted with the closely related species *P. affinis* (Maskell). The latter, which also occurs in Hawaii, has been known here previously under two different names. First misidentified as *P. maritimus*

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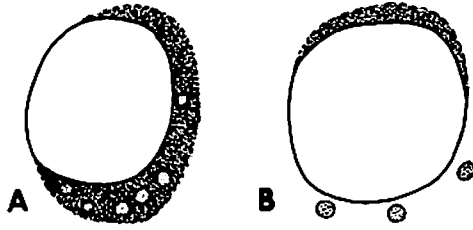


FIGURE 2. Female eyes with paraocular discoidal pores and dermal sclerotization; A, *Pseudococcus elisae* Borchsenius; B, *P. affinis* (Maskell).

Ehrhorn (Zimmerman 1948), it was later identified as *P. obscurus* Essig (Beardsley 1963). The later name is now considered to be a synonym of *P. affinis*. For a discussion of synonymy and redescriptions of both *P. affinis* and *P. maritimus* (not known to occur here) see Miller, Gill and Williams (1984).

*Pseudococcus elisae* Borchsenius (figs. 1, 2A)

*Pseudococcus elisae* Borchsenius 1948, Bul. Entomol. Research 39:419; Nakahara 1981, Proc. Hawaii. Entomol. Soc. 23:413.

The adult female is quite similar to that of *P. affinis* (Maskell), but differs in possessing a distinct collar-like, faintly sclerotized area around the lower part of each eye, which normally bears several (usually 4 to 9) small discoidal pores (fig. 2A). In *P. affinis* there are usually 1 to 4 such pores, occasionally as many as 6, on or near the lower margin of each eye, but the distinct ocular collar is not developed (fig. 2B). This is the most reliable character which I have found to separate *P. elisae* and *P. affinis*. An additional, somewhat less reliable difference involves the shape of the hind tibia and the number of small translucent pores (micropores) which it bears. In *P. affinis* the hind tibiae usually are somewhat swollen, widest near the middle of their length, and normally bear 50 to 150 translucent pores. In *P. elisae* the hind tibiae are of nearly uniform width throughout their length in most specimens (fig. 1). However, in a few specimens the tibiae are slightly wider near the middle, and in this respect they are similar to those specimens of *P. affinis* in which the tibiae are exceptionally narrow. The number of translucent pores in the hind tibiae of *P. elisae* specimens which I have examined ranged from 20 and 80.

Another described species which belongs to this complex is *Pseudococcus neomaritimus* Beardsley (1966) which was based on specimens from the Mariana and Caroline Islands of Micronesia. *P. neomaritimus* possibly should be treated as a synonym of *P. elisae*. However, there are minor differences between available specimens of these two forms. *P. neomaritimus* lacks the translucent pores on the hind femora which are present in all specimens of *P. elisae* and *P. affinis* which I have examined. *P. neomaritimus* has a weakly developed ocular collar, similar to that of *P. elisae*, but the number of ocular discoidal pores is somewhat less, ranging from 2 to 6 in the four specimens examined. These differences may not be significant, but more material should be studied before *P. neomaritimus* is synonymized.

Distribution and Hosts: I have identified specimens of *P. elisae* taken on bananas from localities in Costa Rica, Guatemala, Honduras and Panama. In addition, I have identified specimens of this species, sent to me by United Fruit Company entomologists in Honduras, from the following hosts: *Acalypha setosa*, *Cissus sicyoides*,

*Physalis pubescens*, *Piper tuberculatum*, *Rivinia humilis*, *Urera elata* and *Zingiber officinale*. I have also seen specimens taken on banana and on *Aglaonema* sp. from Central America in quarantine at Honolulu. I have identified *P. elisae* from *Acacia* sp. and from Mango, collected at Kingston, Jamaica, and from Tarawa, Gilbert Islands on *Acalypha* sp., *Brassia oleracea* var. *capitata* (cabbage), *Lycopersicon esculentum* (tomato), and *Pluchea odorata*.

It is evident that *P. elisae*, like *P. affinis*, can infest a wide range of host plants. At this writing, it has been taken in Hawaii only on red ginger (*Alpinia purpurata*) and *Aglaonema*.

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