A NEW SPECIES OF THE MEALYBUG GENUS
CATAENOCOCUS FERRIS FROM ETHIOPIA
ON ENSETE VENTRICOSUM, A PLANT INFECTED BY A VIRUS
[HEMIPTERA, PSEUDOCOCCIDAE; MUSACEAE]

BY

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RÉSUMÉ

Une nouvelle espèce de Pseudococcine, Cataenococcus ensete n. sp., est décrite d’Ethiopie sur Ensete ventricosum (Musacene). La plante était atteinte d’une maladie à virus, probablement apparentée à celle provoquée par le banana streak virus mais il n’est pas encore prouvé que la cochenille en soit le vecteur. Une liste des espèces de Pseudococcines vivant sur les Musaceae en région afro-tropicale est également présentée.

Key words: Hemiptera, Coccoidea, Pseudococcidae, mealybugs, new species, Ensete, Musaceae, Ethiopia, virus.

The following species of mealybug was submitted for identification and commented by Maurice Jansen, Plant Protection Service, Wageningen, The Netherlands. It was sent originally by Dr. D. Peters, Wageningen Agricultural University, Wageningen, The Netherlands. Dr. Peters collected the mealybugs in Awasa, Ethiopia, from Ensete ventricosum, infected by a virus. All the ensete plants in the area, according to Dr. Peters, are infected with the virus, the young plants suffering more than the older plants. The virus has been tentatively designated “ensete streak virus” and is probably related to banana streak virus (a badnavirus) and sugarcane badnavirus. Although there is no direct evidence yet that the mealybug transmits the virus, the mealybug is described here to provide a name. This new species of mealybug has also been collected from Ethiopia earlier and shows some variation in the presence or absence of some minute characters.

Banana streak virus can be transmitted by the mealybug Planococcus citri (Risso) (LOCKHART, 1994). P. citri has also been reported by SU et al. (1997) as transmitting the virus to bananas in Taiwan. Sugarcane badnavirus, according to LOCKHART (1994), is readily transmitted from sugarcane to banana by the pink sugarcane mealybug, Saccharicoccus sacchari (Cockerell) but banana is not a normal host plant for this mealybug.
In the Afro-tropical Region, a number of mealybug species have been reported on Musaceae, a family comprising only the two genera Musa and Ensete. In addition to the new species, the mealybug species are listed here in case any are found to be transmitting viruses.

Abbreviations of depositories of mealybug specimens discussed here are as follows:
- MNHN, Muséum national d'Histoire naturelle, Paris, France.

**LIST OF MEALYBUG SPECIES FROM THE AFRO-TROPICAL REGION ON MUSACEAE**


*Ferrisia virgata* (Cockerell). – *Ghana*, on *Musa paradisiaca* (STRICKLAND, 1947); Tafo, on *Musa* sp., XI-1941 (G.S. Cotterell) (BMNH).


*Planococcus ficus* (Signoret!). – *Ethiopia*, on *Ensete ventricosum*, 5-XII-1980 (Eshetu) (BMNH).


*Cataenococcus ensete* sp. n. (Fig. 1)

Appearance in life not recorded. Adult female on microscope slide 2.80-4.00 mm long, 2.85-3.70 mm wide; anal lobes moderately developed, each with an apical seta 130-140 μm long, often displaced to dorsal surface, ventral surface sclerotized over most of area. Antennae each 450-550 μm long, with 8 segments. Legs well developed; hind trochanter + femur 370-430 μm long, hind tibia + tarsus 310-360 μm long; claw stout, 50.0-52.5 μm long. Ratio of lengths of hind tibia + tarsus to hind trochanter + femur 0.81-0.89. Ratio of lengths of hind tibia to tarsus 1.81-2.00. Translucent pores numerous on anterior and posterior surfaces of each hind coxa, present in
Fig. 1, *Cataenococcus ensete* sp. n.
moderate numbers on posterior surface of each hind trochanter and a few present distally on each hind tibia. Labium 300-320 μm long, slightly longer than clypeolabral shield. Circulus 115-200 μm wide, notched at each side and divided by intersegmental line. Ostioles well developed, each with inner edges of lips sclerotized and each lip with 8-15 setae and a concentration of trilocular pores. Anal ring 125-135 μm long, 90-95 μm wide, with 6 setae each 115-140 μm long. Cerarii probably numbering 18 pairs or limits of each cerarius difficult to determine because of presence of many intermediate cerarii, giving appearance of almost a continuous row. Anal lobe cerarii each with 2-29 conical setae (see below), largest about 25 μm long, 7.5 μm wide at base, sometimes with a few auxiliary setae or modified conical setae and a concentration of trilocular pores. Anterior cerarii each with numerous conical setae of different sizes and with trilocular pores, the cerarii divided and accompanied by intermediate cerarii.

Dorsal surface with numerous thick setae 30-40 μm long, usually bluntly pointed with curved tips; abdominal segment VII with similar setae and larger flagellate setae, longest about 65 μm long; setae flanking anal ring flagellate, most noticeably longer, 50-75 μm long. Trilocular pores abundant. Discoidal pores present or absent; when present, numerous, each wider than a trilocular pore, widest on posterior abdominal segments. Minute ducts, each with a sclerotized rim and narrower than a single loculus of a trilocular pore, present or absent.

Ventral surface with normal flagellate setae. Ciseral setae each about 140 μm long, often displaced to dorsal surface. Obanal setae present, each about 130 μm long. Multilocular disc pores each about 7.5 μm in diameter, present in medial areas of abdominal segments VII and VIII, surrounding vulva, and a few present on posterior edge of abdominal segment VI. Trilocular pores numerous but not so abundant as on dorsum. Discoidal pores as on dorsum, present or absent, when present, scattered; 1 or 2 also situated next to each eye in most specimens. Minute ducts as on dorsum, present or absent. Oral collar tubular ducts of 3 main sizes. A large type, about 12.5 μm long, 5.0 μm wide, wider than a trilocular pore, present in marginal groups usually on abdominal segments V-VII and on head between antennal bases. An intermediate type, each about 10 μm long, 3.75 μm wide, also wider than a trilocular pore, present on inner edges of marginal groups of large type and around margins of anterior abdominal segments, thorax and head, but often varying in size; present also across posterior medial areas of abdominal segments V and VI. A small type, each narrower than a trilocular pore, usually occurring on inner edges of marginal groups of larger ducts on abdominal segments VI and VII and across medial areas of abdominal segments IV-VI.

**Holotype adult female**: Ethiopia, Awasa, on roots of *Ensete ventricosum* (Musaceae), 13-I-1997 (D. Peters), MNHN. **Paratypes adult female**: same data as holotype: 2 ♀, MNHN; 2 ♀, BMNH; 1 ♀, PPSW; -- Ethiopia, no data except 1989, 3 ♀, BMNH, 2 ♀, MNHN; -- Ethiopia, Wenago, 1850 m, on *Ensete ventricosum*, 5-XII-1983 (M. Bayissa), 2 ♀, BMNH.

*Cataenococcus ensete* exhibits considerable variation. In specimens from Awasa, the number of conical setae in each anal lobe cerarius varies from 2-8. This number varies from 5-7 in specimens listed without data, whereas in specimens collected at Wenago, these setae number 15-29. STRICKLAND (1947) has drawn attention to similar variation in *Paraputo anomalus* (Newstead) under its synonyms *P. ritchiei* Laing and *P. multispinosa* James.

The large discoidal pores illustrated are present in specimens from Awasa and specimens listed without data, but are absent from specimens collected in Wenago. Furthermore, there are no microducts in specimens without data but they occur in all the other specimens listed. Despite this variation we regard all the material at hand to be conspecific.

The microducts described are similar to those discussed by WILLIAMS & MILLER (1999) in the second-instar male of the mealybug *Quadrigalicoccus lauracearum* Williams & Miller and they have been found since in some other mealybug species. *C. ensete* comes very close to *C. ingrandi* Balachowsky in possessing oral collar tubular ducts, each wider than a trilocular pore situated around the ventral margins of the head, thorax and abdomen, an almost continuous zone of cerarii, and multilocular
disc pores on the posterior abdominal segments only. *C. ingrandi* is a polyphagous Central and South American species, originally described by BALACHOWSKY (1959) from Colombia on *Capparis pachaca*. It was redescribed by WILLIAMS & GRANARA DE WILLINK (1992) as possessing large-type oral collar tubular ducts between the anal lobes but these are never present in this position in *C. ensete*. Moreover, the dorsal setae flanking the anal ring in *C. ensete* are conspicuously longer than the other dorsal setae but in *C. ingrandi* they are only slightly longer. Among the Afro-tropical species, *C. ensete* is closest to *C. hypogaeus* De Lotto, described by DE LOTTO (1961) from Kenya on the roots of *Gelonium procerum*. In *C. hypogaeus*, however, the dorsal setae have swollen tips and the long flagellate setae anterior and lateral to the anal ring, are only slightly longer than the other dorsal setae although some setae posterior to the anal ring are long and flagellate. Furthermore, the hind trochanters and femora in *C. hypogaeus* lack translucent pores and these are present in *C. ensete*.

The epithet “*ensete*” is named from the plant genus *Ensete*, an Ethiopian vernacular name.

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AUTHORS CITED


