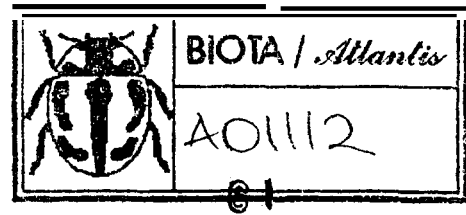


Bien aimé
D. Matile



Recent outbreaks of mealybugs on plantain (*Musa spp.*) in Nigeria including a new record for Africa and a description of a new species of *Planococcus* Ferris (Homoptera, Pseudococcidae)

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Résumé. - L'attaque de trois espèces de pseudococcines sur le plantain (*Musa spp.*) est discutée ici. Il s'agit de *Dysmicoccus brevipes* (Cockerell), espèce pantropicale et polyphage, et *D. grassii* (Leonardi) causant certaines des plus fortes infestations, cette dernière espèce étant signalée pour la première fois de l'Afrique continentale. *D. grassii* est une espèce répandue et polyphage en Amérique centrale et du Sud mais elle est présente aux îles Canaries depuis de nombreuses années où elle infeste le bananier. Cette espèce avait été identifiée précédemment comme *Pseudococcus comstocki* (Kuwana) et plus tard signalée sous son synonyme récent *D. alazon* Williams. Une nouvelle espèce de pseudococcine, *Planococcus musae* n. sp., est décrite et illustrée, sur des spécimens récoltés sur la banane plantain var. False Hom (*Musa spp.*). Bien que cette nouvelle espèce ait été trouvée sur des pieds montrant des symptômes de maladie à virus du bananier "banana streak virus", il n'y a aucune preuve actuellement que cette pseudococcine en soit un vecteur.

Summary. - Outbreaks of three species of mealybug on plantain (*Musa spp.*) in Nigeria are discussed. The species include *Dysmicoccus brevipes* (Cockerell), a tropicopolitan and polyphagous species, and *D. grassii* (Leonardi) causing some of the heaviest infestations, the first record of this mealybug for mainland Africa. *D. grassii* is a common and polyphagous species in Central and South America but it has been present for many years in the Canary Islands where it infests banana. It was misidentified there earlier as *Pseudococcus comstocki* (Kuwana) and later recorded under its junior synonym *D. alazon* Williams. A new species of mealybug, *Planococcus musae* sp. n., is also described and illustrated from specimens collected on False Horn plantain (*Musa spp.*). Although the new species was found on plants showing symptoms of banana streak virus there is no evidence that the mealybug is a vector.

Mots clés. - Homoptera, Pseudococcidae, *Dysmicoccus brevipes* (Cockerell), *D. grassii* (Leonardi), nouveau signalement, *Planococcus musae* n. sp., plantain, *Musa spp.*, Nigeria.

The following three species of mealybug infesting plantain (*Musa spp.*) (Musaceae) in Nigeria have been sent for identification by the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. One is the tropicopolitan and polyphagous species *Dysmicoccus brevipes* (Cockerell), already known from Nigeria, but masses of another species, *D. grassii* (Leonardi), have been found on False Horn plantain at two sites at Ikot Eyo and Ikot Akpan Eda in eastern Nigeria. This is the first record of this mealybug species on mainland Africa. *D. grassii* is known already from the Canary Islands where it is often injurious to bananas and it is a common polyphagous species in Central and South America. A third species of mealybug is here described as new in the genus *Planococcus* Ferris. It was found on False Horn plantain showing symptoms of banana streak virus at Kolo Creek, Nigeria, but there is no evidence that the mealybug is a vector. The new species is related to some other African species of *Planococcus* but it is not clear if it has been accidentally introduced to Nigeria recently. It is described here to provide a

name and in case control measures are implemented.

Plantain is a staple food in several countries of West and Central Africa (IITA, 1994). Although sub-Saharan Africa accounts for 35% of world production, the per capita consumption in some areas of Africa is much higher. Plantain is also an important source of rural income and any loss attributable to insect damage can seriously affect the local economy.

Dysmicoccus brevipes (Cockerell)

Dactylopius brevipes Cockerell, COCKERELL, 1893: 267

Dysmicoccus brevipes (Cockerell), FERRIS, 1950: 59.

Although this mealybug is common throughout Africa, including Nigeria, on a wide range of plants, it has been found recently at Onne in eastern Nigeria by C. Pasberg-Gauhl, 16.ii.1994, on the plantain cultivar Agbagba, apparently showing symptoms of banana streak virus. The same mealybug species has also been found at Imiring on plantain, 22.ix.1993. Specimens of *D. brevipes* are also available from Kadde in Ghana, collected recently on False Horn plantain, cultivar Apantu, 16.V.1994, by C. Pasberg-Gauhl.

The mealybug is commonly known as the "Pineapple Mealybug" but it is polyphagous and one of the most widespread of mealybugs. Although it is of no surprise to find *D. brevipes* on plantain in Nigeria, the recent outbreaks coincide with those of two other mealybug species in eastern Nigeria.

Dysmicoccus grassii (Leonardi)

Pseudococcus grassii Leonardi, LEONARDI 1913: 59.

Dysmicoccus alazon Williams, 1960: 239. Synonymised by MAROTTA, 1990: 71.

Dysmicoccus grassii (Leonardi), MAROTTA, 1990: 71.

This species was described originally from specimens on banana imported from the Canary Islands to Rome. WILLIAMS (1960) described *Dysmicoccus alazon* on banana imported from the Canary Islands to England and Egypt. The species is, nevertheless, polyphagous as shown by PEREZ *et al* (1984a, b) in detailed studies of the morphology, including the adult male, and of the biology. MACDOUGALL (1926) gave an account of the damage in the Canary Islands caused by this mealybug, under the name *Pseudococcus comstocki* (Kuwana), a misidentification. He reported that the feeding of hundreds of scales on the leaves results in decreased output. The mealybugs invade the axis which bears the bunches of fruit and from there they pass to the fruits causing premature ripening. PEREZ *et al.* (1984b) discussed the possibility of integrated control in the Canary Islands despite limited control by the coccinellid *Cryptolaemus montrouzieri* (Mulsant).

WILLIAMS & GRANARA DE WILLINK (1993) reported on the occurrence of the mealybug, as *D. alazon*, in Central and South America including the West Indies, on a wide variety of plants but rarely on *Musa spp.* It is probably under reasonable control there by natural enemies. The mealybug may have been introduced from the New World to the Canary Islands early in the present century.

It has now been found in southeast Nigeria, the first time on mainland Africa, where masses of the mealybug on False Horn plantain are reported at two sites. At Ikot Eyo many mealybugs were found under dry leaf sheaths attached to the pseudostem up to 1.5-2.0 mm high, 9.xi.1994, collected by F. Gauhl. At Ikot Akpan Eda there were many mealybugs (the highest density recorded) found under dry leaf sheaths, 1.xii.1994, also

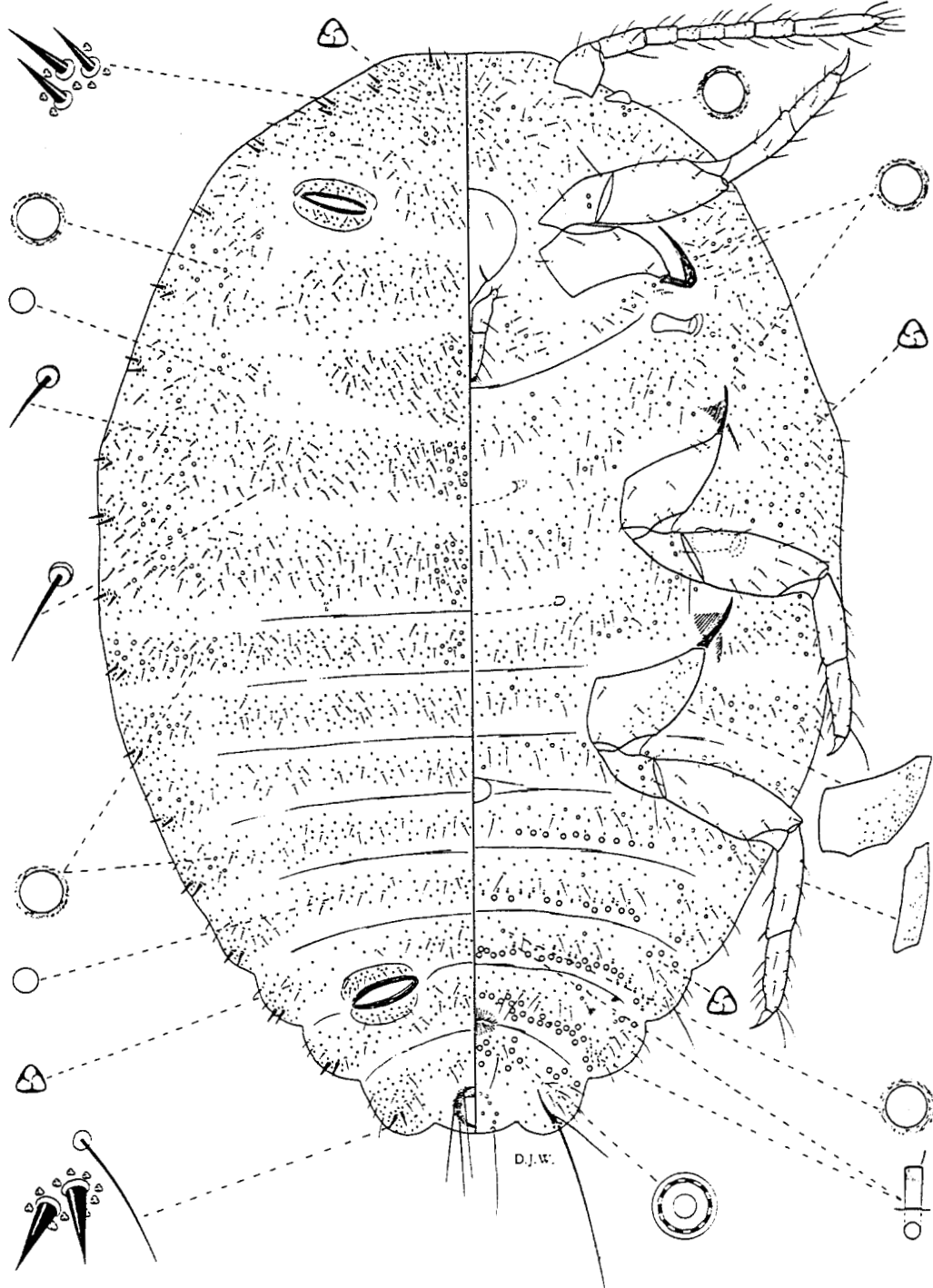


Fig. 1 - *Planococcus musae* sp. n.

collected by F. Gauhl. Another colony collected at the same time is also recorded on plants dying from viral infection.

Although these new infestations must cause anxiety to plantain and banana growers in Nigeria, there is the added concern that *D. grassii* is polyphagous. If the outbreaks remain unchecked then the species could spread throughout tropical Africa.

Planococcus musae sp. n. (fig. 1)

Appearance of adult femaie in life not recorded. Adult femaie on microscope slide broadly oval, attaining a length of 2.3 mm; anal lobes well developed, each with an apical seta 160-220 μ m long and a ventral anal lobe bar. Antennae each 310-350 μ m long, with 8 segments. Legs well developed; hind trochanter + femur 210-240 μ m long, hind tibia + tarsus 200-220 μ m long, always shorter than trochanter + femur, claw about 37 μ m long. Ratio of lengths of hind tibia + tarsus to hind trochanter + femur 0.91-0.95. Ratio of lengths of hind tibia to tarsus 1.10-1.44. Translucent pores present on both surfaces of hind coxa and on posterior surface of hind tibia. Labium 150-160 μ m long, about same length as clypeolabral shield. Circulus 40-50 μ m wide, round to oval, not divided by intersegmental line. Ostioles well developed, wide, each with inner edges of lips sclerotised and each lip with a few setae and tnlocular pores. Anal ring 55-65 μ m wide, with 6 setae each about 85-90 μ m long, shorter than apical setae. Cerarii numbering 18 pairs. Anal lobe cerarii each with 2 conical setae about 20 μ m long surrounded by a loose group of trilocular pores on a membranous area. Anterior cerarii each with 2 robust conical setae about 17 μ m long, slightly smaller than the anal lobe conical setae, with a few trilocular pores; third or ocular cerarii each usually with 3 conical setae.

Dorsal surface with many short, robust setae, usually flagellate but occasionally blunt, varying in length but the longest on mid-dorsum about 20 μ m long. Multilocular disc pores absent. Tnlocular pores numerous, evenly distributed. Discoidal pores unusual, of 2 sizes. A small type almost the same size as a trilocular pore. present mainly on the abdomen except for a few scattered on head and thorax; on the abdomen they occur in medial and lateral groups and across the segments. A large type, each usually about 5 μ m in diameter and only slightly smaller than a multilocular disc pore, present in conspicuous groups on the medial areas of the thorax and first abdominal segment; present also in marginal and submarginal groups on head, thorax and segments I-IV of abdomen.

Ventral surface with normal, slender setae. Multilocular disc pores, each about 6.3 μ m in diameter, present across the posterior edges of abdominal segment IV and posterior segments reaching margins, in single rows on abdominal segments IV and V and in double rows on segments VI and VII; present also on anterior edges marginally. Trilocular pores evenly distributed. Discoidal pores, similar to the large type on dorsum, present between the anal lobes and around the margin, occupying also the medial areas of the head, thorax and anterior abdominal segments; a distinct group of 3 or 4 also situated behind each eye. Oral collar tubular ducts small, of one size, each with a diameter narrower than a trilocular pore. present across abdominal segments V and VI, anterior to the multilocular disc pores, and in marginal groups on abdominal segments V-VII; absent from head and thorax.

HOLOTYPE: ♀, Nigeria, Kolo Creek, on False Horn plantain, (*Musa spp.*), 24.ii.1994 (F. Gauhl), Muséum National d'Histoire Naturelle, Paris (MNHN). PARATYPES ♀, Nigeria, same data as holotype, 17 ♀ (MNHN), 1 ♀ (The Natural History Museum, London); Imering, on plantain (*Musa spp.*), 22.ix.1993 (C. Pasberg-Gauhl), 2 ♀ (MNHN).

Comments. – This is a distinctive species with large discoidal pores almost as large as the multilocular disc pores. These discoidal pores are present on the dorsum and venter with the largest concentrations on the dorsal medial areas of the thorax, around the dorsal margins, between the anal lobes on the venter and in fairly large numbers on the venter of the head, thorax and anterior abdominal segments. There is a distinct group of 3 or 4 also present behind each eye. The dorsal setae are short but stiff, often flagellate but sometimes slightly blunt. *P. principe* Cox also possesses large discoidal pores but this species has

numerous oral collar tubular ducts on the venter of the head and thorax and these are absent from *P. musae*. In lacking these oral collar ducts, *P. musae* is closely related to *P. hospitus* De Lotto described by DE LOTTO (1961) from Uganda on *Eulophia* sp. (Orchidaceae) and redescribed by COX (1989).

P. hospitus is the only other species of *Planococcus* with large discoidal pores almost the same size as the multilocular disc pores but in *P. hospitus* they occur only on the venter and are absent between the anal lobes and behind the eyes. The dorsal setae in *P. musae* are much more numerous than in *P. hospitus* and are mostly flagellate. Furthermore, the dorsal setae of *P. hospitus*, are slightly knobbed and in this character the species belongs to a small group known from orchids in Africa and the Oriental Region. Although the dorsal setae are not knobbed in *P. musae*, the species seems to be related to this orchid-feeding group. It is also related to *P. zairensis* COX, described from Zaire on an unknown plant, a species with flagellate dorsal setae but with dorsal discoidal pores much smaller than the multilocular disc pores.

The species epithet is the Latin genitive case of the plant generic name *Musa*.

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