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BEMISIA AFER SENS. LAT. (HOMOPTERA: ALEYRODIDAE) OUTBREAK IN THE AMERICAS

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Bemisia tabaci (Gennadius) was reported on sweetpotato (*Ipomoea batatas* Lam.) from the central coast of Peru in the late 1980s, noting that it was not a significant pest (Redolfi 1989, cited in Nuñez 1995). However, in the 1997-1998 agricultural season, unusually large populations of *Bemisia tabaci* were reported to be significantly affecting sweetpotato yields in the coastal valleys of Peru (Valencia et al. 2000). In August of 2000, P. Anderson (CIAT) made a field visit to the Cañete Valley, approximately 100 km south of Lima, with Cristina Fonseca of the International Potato Center (CIP) and Ing. Jose M. Valencia of the Cañete Experimental Station, to explore the problem. The nymphs that were actively reproducing on sweetpotato were *Bemisia*. However, the adult whiteflies, which were abundant on sweetpotato and pepino (*Solanum muricatum* Ait.) were larger and whiter (more *Trialeurodes*-like) than typical for *Bemisia tabaci*. Thus, nymphs were collected from sweetpotato for taxonomic verification.

Whitefly nymphs were slide-mounted and tentatively identified as *Bemisia afer*, by P. Hernandez at the International Center for Tropical Agriculture (CIAT) in Cali, Colombia. The identification was verified as *Bemisia afer sens. lat.*, by J. Martin at the Natural History Museum in London, UK (BMNH). Voucher specimens were deposited in the BMNH.

This is the first outbreak we have observed of *Bemisia afer sens. lat.* in an agricultural situation in the Americas. *B. afer* has been recorded from Egypt, Greece, Sicily, the Middle East, the Ethiopian region, Comoro Islands, India, Pakistan, New Guinea, Fiji, Tonga (Martin 1987), Sudan, Sierra Leone, Cote d'Ivoire, Nigeria, Niger, Chad, Cameroon, Congo, Zaire, Uganda, Rhodesia, Malawi, South Africa (Bink-Moenen 1983), and Australia (Martin 1999). *B. afer* has hitherto been considered as a common and widespread pest species, feeding on a wide variety of plants (Martin 1987).

In Belize in 1994 and 1996, plants of a papaveraceous host, *Bocconia frutescens* L., were found to be colonized by very large populations of a species of *Bemisia* with highly characteristic puparia. This belongs to *B. afer sens. lat.*, but the puparial characteristics fall outside those normally observed in areas of the world where *B. afer* is widespread. While studying the whitefly collection of the US National Museum of Natural History (housed at USDA, Beltsville, MD), Martin noted a small number of *Bemisia afer*-group samples that are likely to be conspecific with the samples from *B. frutescens* in Belize. These samples were either field-collected in, or intercepted by US quarantine authorities from Honduras, Mexico and El Salvador. Quoted host plants include *Pouteria* sp (Sapotaceae), *Hibiscus* sp (Malvaceae), *Origanum* sp (Labiateae), *Ficus* sp or spp (Moraceae), *Serjania* sp (Sapindaceae) and *Psidium guajava* (Myrtaceae). There are also two additional slides from Belize in BMNH, one from an unidentified woody vine and matching the *Bocconia* puparia, and the other (possibly a smooth-leaf form of the same species) from a wild cassava plant growing on a forest track remote from agriculture. From this material, it appears that this taxon is widespread and oligophagous in Central America.

Bink-Moenen (1983) proposed the synonymy of *Bemisia hancocki* Corbett (1936) with *B. afer* (Priesner & Hosny 1934). This synonymy was based on examination of one badly damaged syntype of *B. afer* deposited in the BMNH. Based on Martin's subsequent examination of a complete syntype puparium of *B. hancocki* deposited in USNM, this synonymy may have been premature. However, with the considerable degree of puparial morphological plasticity now becoming evident within the *B. afer* group, formally resurrecting *B. hancocki* could cause further nomenclatural confusion at this point.

B. hancocki was first described from cotton (*Gossypium hirsutum* L.) in Uganda by Corbett (1936). Mound (1965) examined *B. hancocki* specimens from cotton, peanut (*Arachis hypogaea* L.), and *Vigna (catjang) unguiculata* (L.) Walp., and noted *B. hancocki* collections from cassava (*Manihot esculenta* Cranz) in Sierra Leone, Nigeria, Cameroon, and Sudan. He further described the variation in the puparial morphology of *B. hancocki* as being almost as great as that of *B. tabaci*. Personal observations made by Martin, Estrella Hernández-Suarez (ICIA, Canary Islands, Spain) and by Raymond Gill (CDFA, Sacramento, USA) indicate that the *B. afer* group actually displays considerably greater puparial morphological variation than does *B. tabaci* and its forms/biotypes.

Although specimens from the *B. afer* group have been previously discovered in non-agricultural situations in the Americas, this is the first

report of a *Bemisia afer sens. lat.* outbreak on an important crop host in the New World. The extent of *B. afer* dissemination and its host-associations in Peru need to be investigated. Furthermore, the taxonomy of *Bemisia afer* and *Bemisia hancocki* should be re-visited and, the possible role of *B. afer* in virus transmission needs to be clarified.

SUMMARY

The first outbreak of *Bemisia afer sens. lat.* in an agricultural situation in the Americas is reported. *B. afer* was discovered on sweetpotato (*Ipomoea batatas* Lam.) in the Cañete Valley in the central coast of Peru.

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