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IDENTITY AND FIRST RECORD OF THE SPITTLEBUG
MAHANARVA BIPARS (HEMIPTERA: AUCHENORRHYNCHA: CERCOPIDAE)
ON SUGARCANE IN COLOMBIA

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Spittlebugs (Hemiptera: Auchenorrhyncha: Cercopidae) are widespread pests of sugarcane in the Neotropics (Fewkes 1969). Adult injury is expressed as a chlorosis known as froghopper burn that leads to losses in sugar content, juice purity and overall stalk and sugar yields (Dinardo-Miranda 2002). Sugarcane fields in Colombia have been notably free from serious spittlebug attacks and a damaging outbreak has not been documented until now.

In 2002, growers in the coffee zone of the Andean region reported severe infestations of spittlebugs in sugarcane fields used for gur (“panela”) production. The problem was first detected in the locality of San José (vereda Santa Ana, municipio Guática, department Risaralda) in 2000, but the incipient damage was not cause for concern until now. This region was visited in September 2002 to document the incident and determine the identity of the spittlebug species involved.

Two infested fields were visited on 24 September 2002 on a farm at Guática (5°18’N, 75°49’W) where the owner first noted the infestation 8 months earlier. In this production system, sugarcane stands are of mixed ages due to selective harvesting, and stems in all age classes were attacked; some stems as young as 1-2 months old were infested with nymphs. A high proportion of stems were infested in each field; the chlorotic streaks attributed to adult feeding, however, were not evident. The infested area in the first field (1624 m elevation) was approximately 2 ha with 76.2% of stems infested (n = 21, var Puerto Rico 61632). Mean infestation was 4.7 nymphs and 1.1 adults per stem. The infested area in the second field (1663 m elevation, mixed sugarcane varieties) was approximately 0.5 ha, with 43.1% of stems infested (n = 43, mixed varieties) with an average of 1.8 nymphs and 0.3 adults per stem. Agronomists from other areas around Guántica also reported problems with persistent spittlebug populations in sugarcane under the same production system. To date, however, spittlebugs have not been detected in the nearest fields of sugarcane under industrial sugar production (24 km north). This will be an important frontier to monitor in the next few years as Colombia moves to prohibit preharvest burning by 2005 (Cenicaña 1998); a shift to green production may open opportunities for emergent spittlebug pests in extensive sugarcane production systems.

The spittlebug was identified as Mahanarva bipars (Walker). Voucher specimens were deposited in the Cornell University Insect Collection under Lot #1227. This is the first definitive report of this species from Colombia and from sugarcane. The original species description was based on an unknown number of adults collected in South America. Walker (1858) placed bipars in the genus Sphenorhina Amoyt & Serville, and this was later moved to Tomaspis Amoyt & Serville by Lallemant (1912) and then to Mahanarva Distant by Fennah (1968). No specific locality data or other information were recorded for the type specimens. To our knowledge, there are no other accounts of M. bipars in the literature, meaning no available information on distribution, biology, host plants, size, or color pattern variation.

The genus Mahanarva is known from Costa Rica, Panama and throughout South America. There are 32 described species (pers. comm. M. Webb), of which several are known as forage grass or sugarcane pests. The most important pest species are reported from Brazil, Colombia and Ecuador. Mahanarva posticata (Stal) and M. fimbriolata (Stal) are found on sugarcane (Guagliumi 1973; Dinardo-Miranda et al. 2001; García 2002), and M. spectabilis on forage grasses (DCP, pers. observ.) in Brazil. Mahanarva trifissa (Jauberti) feeds on forage grasses in southeastern Colombia (Peck 2001; CIAT 2002). Mahanarva andigena (Jacobi) occurs on sugarcane in northwestern Ecuador (Mendoza 1999; Fors 2000, DCP personal observation). The other known grass-feeding species include M. indicata Distant, M. mura (China & Myers), M. phantastica (Breddin), M. quadripunctata (Walker), and M. tristis (F.). Mahanarva costaricensis (Distant) is the only known species to specialize on non-grasses, reported from Calathea (Marantaceae) and Heliconia (Heliconiaceae) (V. Thompson, Dept. Biology, Roosevelt University, unpublished).

Additional locality records for M. bipars were obtained from specimens housed in the Natural His-
Mahanarva bipars has only been collected from the Colombian departments of Cauca, Chocó, Risaralda and Valle del Cauca, representing the Pacific coast east to the central cordillera of the Andes.

**Table 1. Size (mm) of adult Mahanarva bipars collected from sugarcane (Colombia: Risaralda, Guártica)** (mean ±SE, range, N = 13 females and 9 males).

<table>
<thead>
<tr>
<th>Sex</th>
<th>Head capsule Width</th>
<th>Body length without wing</th>
<th>Body length with wing</th>
<th>Body width</th>
<th>Stylet length</th>
<th>Anterior wing length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2.41 ± 0.08 a</td>
<td>10.22 ± 0.73 a</td>
<td>10.99 ± 0.40 a</td>
<td>5.23 ± 0.26 a</td>
<td>1.19 ± 0.05 a</td>
<td>8.97 ± 0.43 a</td>
</tr>
<tr>
<td></td>
<td>(2.25 - 2.52)</td>
<td>(8.57 - 11.07)</td>
<td>(10.50 - 11.71)</td>
<td>(4.86 - 5.57)</td>
<td>(1.14 - 1.29)</td>
<td>(8.36 - 9.79)</td>
</tr>
<tr>
<td>Female</td>
<td>2.68 ± 0.10 b</td>
<td>11.98 ± 0.63 b</td>
<td>12.14 ± 0.45 b</td>
<td>5.82 ± 0.33 b</td>
<td>1.42 ± 0.13 b</td>
<td>9.63 ± 0.36 b</td>
</tr>
<tr>
<td></td>
<td>(2.52 - 2.84)</td>
<td>(10.79 - 12.86)</td>
<td>(11.36 - 12.86)</td>
<td>(5.36 - 6.36)</td>
<td>(1.21 - 1.79)</td>
<td>(8.93 - 10.07)</td>
</tr>
</tbody>
</table>

For each column, means followed by different letters are significantly different at P < 0.05 (t-test).
Mahanarva bipars (Walker) is identified as the species causing the first spittlebug outbreak in Colombian sugarcane. Information on the biology, host plants and geographic range are absent from the literature. Therefore, we summarize field observations on infestation levels and location of feeding sites, laboratory observations on size and adult color pattern variation, and known locality information that indicates distribution is restricted to western Colombia.

REFERENCES CITED


Fig. 2. Most common color pattern variation exhibited dorsally in adult Mahanarva bipars.