

Mimosestes playazul, New Species, with New Host Records for Other *Mimosestes* (Coleoptera: Bruchidae)¹

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ABSTRACT *Mimosestes playazul* sp.n., which feeds in the seeds of *Acacia collinsii* Safford in Mexico, is described, and external features and the male genitalia are figured. New host records are reported for *M. acaciastes* Kingsolver and Johnson, *M. amicus* (Horn), *M. cinerifer* (Fähræus), *M. enterolobii* Kingsolver and Johnson, *M. humeralis* (Gyllenhal), *M. insularis* Kingsolver and Johnson, *M. janzeni* Kingsolver and Johnson, *M. mimosae* (F.), *M. nubigena* (Motschulsky), and *M. viduatus* (Sharp).

Since the revision of *Mimosestes* by Kingsolver and Johnson (1978), one new species and many new host records have been discovered. To make them available for ecological and evolutionary studies in progress, the new species is described and the new records are presented below.

The voucher plant samples that I collected and from whose seeds I reared species of *Mimosestes* are deposited in the Missouri Botanical Garden, St. Louis; the Deaver Herbarium, Northern Arizona University; and the Herbario Nacional, Universidad Nacional Autonoma de Mexico, Mexico, D.F.

Mimosestes playazul Johnson, New Species

(Fig. 1-5)

Length (pronotum-elytra) 2.5-3.7 mm. Width 1.6-2.4 mm. Thoracic depth at deepest point 1.2-1.9 mm.

Male

Integument color. Head black, antennae light brown to red; pronotum usually black, sometimes basal 0.2 with vague reddish cast; elytron black with conspicuous red maculation usually extending from stria 2 to margin and about 0.45 length of elytron (Fig. 1), sometimes red maculation smaller, beginning at stria 3 and ending at stria 10; undersurfaces usually black with vague reddish patches on lateral margins; pro- and mesothoracic legs and dorsal surface of hind femur usually red, remainder of hind leg black, sometimes all legs black; pygidium usually all black, apex with reddish tint.

Vestiture. With recumbent white hairs as follows. Eye with medial fringe of dense white hairs; postocular lobe with dense white hairs; remainder of head with moderately dense to dense white hairs; pronotum, undersurfaces, legs, and pygidium with dense white hairs, elytra with short, sparse white hairs.

Structure. Head. Short, broad, densely punctulate; frons with median, glabrous, finely punctulate line extending from frontoclypeal suture to large, V-shaped, finely

granulate boss on vertex; vague transverse sulcus between upper limits of eyes; width of eye slightly wider than width of frons; ocular sinus about half as long as width of eye; posterior margin of eye protruding from adjacent surfaces; postocular lobe slightly angulate; distance from base of antennae to apex of labrum about half as long as distance from upper limits of eyes to apex of labrum; antennal segments 1 to 4 moniliform to filiform, 5 to 10 eccentric, 11th subacute apically, 5 to 11 slightly broader than long (Fig. 2); antenna reaching to or slightly beyond base of elytron.

Prothorax. Disk campanulate, with many coarse punctures in no apparent pattern (Fig. 1); cervical sulcus shallow, extending from near coxal cavity to about 0.3 distance to pronotal midline; lateral prothoracic carina strong, spinulate, extending to or almost to coxal cavity; lateral margins near apex of prothorax swollen, but without spines or pronounced hump; short median impressed line on median basal lobe; without small depressions near basolateral margins; prosternum separating procoxae for about 0.8 their length.

Mesothorax and Metathorax. Scutellum small, transverse, with lateral posterior teeth, clothed with sparse white hairs or glabrous; elytron about twice as long as broad; striae deep, punctate, stria intervals smooth; striae 2 and 3 usually closer to one another at base than each is to adjacent striae, others subequal at base; strong, flattened spines at base of striae 3, 4, 5, 6; humerus finely punctate; undersurfaces punctate; all of hind coxa punctate; hind femur constricted basally and apically, expanded medially to slightly wider than width of coxa (Fig. 3); deep channel on ventral surface of femur about 0.4 as long as femur, lined with dense white hairs, inner and outer margins of channel with smooth carinae; femur armed on inner edge with subapical acuminate spine about as long as width of tibial base, followed by 2 spines about 0.25 as long as first spine; tibia with ventral, lateroventral, lateral, and dorsomesal glabrous longitudinal carinae; ventral carina blade-like, erect; dorsal surface without fossa; tibial corona with 3 to 4 spinules; mucro about 0.1 as long as first tarsomere, without sinus at base of mucro; first tarsomere with ventral, lateral, and mesal glabrous longitudinal carinae.

Abdomen. Sterna not flattened medially; first sternum about 0.45 as long as abdomen, posterior margin straight;

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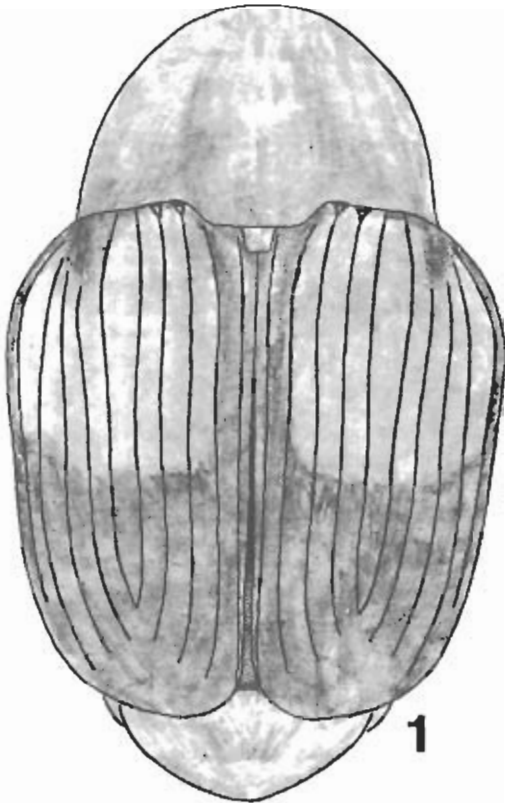


FIG. 1. *Mimosstes playazul*, dorsal aspect.

sterna 2-4 unmodified; 5th emarginate; pygidium punctate, convex in lateral view.

Genitalia (Fig. 4 and 5). Median lobe moderate in length, with moderately developed dorsal hood at apex; in ventral view, ventral valve elongate, apex gently rounded, ventral valve sclerotized with many round translucent spots, base about 0.7 as wide as apex of median lobe, straight in lateral view; armature of internal sac consisting of fine spinules with a more dense mass of spines at apex. Lateral lobes expanded apically, cleft to about 0.9 their length (Fig. 5).

Female

Similar to male except ventral surface of hind femur not channeled beneath; fifth abdominal sternum convex, sometimes bent downward at apex. Genitalia not examined.

Host Plants

Acacia collinsii Safford; Mexico, Michoacan: 40 km W Playa Azul, 29-XII-79 (CDJ 1199-79). Chiapas: ca. 3,400 ft, 20 mi S Comitán, 31-III-79 (CDJ 1042-79).

Type Series

Holotype male, allotype female and many paratypes Mexico, Michoacan: 40 km W Playa Azul, 29-XII-79,

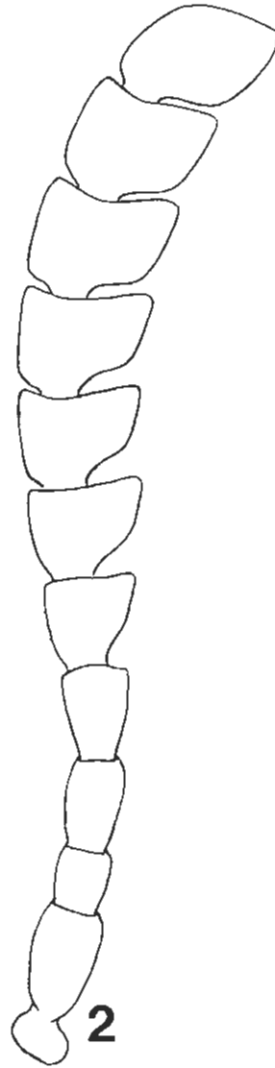


FIG. 2. *Mimosstes playazul*, antenna.

reared seeds no. 1199-79, reared seeds *Acacia collinsii*, C. D. Johnson collector, USNM 76842. Two paratypes from 1042-79 under host plants above.

Holotype, allotype, and many paratypes deposited in the U.S. National Museum of Natural History. Paratypes deposited in the Canadian National Collection of Insects, Ottawa; and the C. D. Johnson collection, Flagstaff, Ariz.

Discussion

M. playazul is in the Ulkei species group (Kingsolver and Johnson 1978), although it superficially resembles both *M. humeralis* (Gyllenhal) and *M. janzeni* Kingsolver and Johnson. The last two species have red maculations at the bases of their black elytra about the same size and shape as the maculations in *M. playazul*. The pronotum of *M. playazul* has a strong, spinulate, lateral

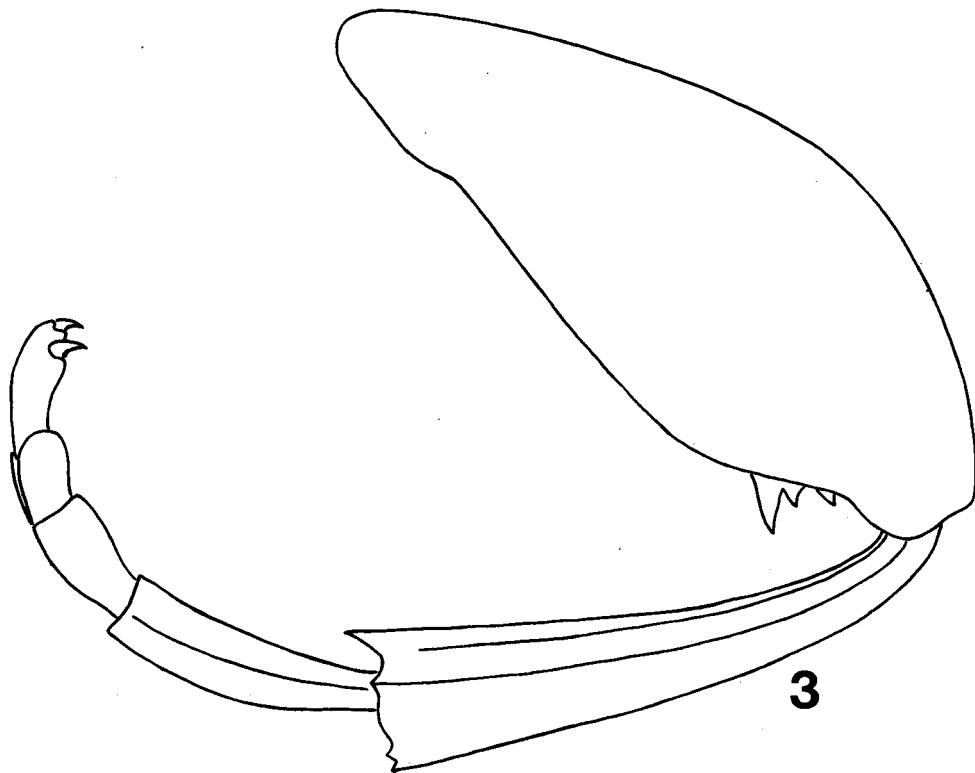


FIG. 3. *Mimosestes playazul*, hind leg.

prothoracic carina and swollen lateral margins of the prothorax almost identical to those of *M. ulkei* (Horn). These characters and the simple male genitalia place these species near one another. *M. playazul* has a much larger channel on the undersurface of the male hind femur than does *M. ulkei*. *M. ulkei* has only one subapical hind femoral spine and white elytra with lateral darker maculations. The structure of the prothorax, however, links the two into the same group.

M. playazul is a typical *Mimosestes* and would key to couplet 10b in Kingsolver and Johnson (1978). "Lateral margins near apex of prothorax swollen, without strong spines; strong lateral, spinulate prothoracic carina extending from base to coxal cavity; elytra black with large red humeral maculations; reared from seeds *Acacia collinsii*; Mexico" should be added to the key to identify *M. playazul*.

The only other *Mimosestes* that have been reared from *A. collinsii* are *M. viduatus* (Sharp) and *M. mimosae* (F.).

The specific epithet "*playazul*" is a noun in apposition to "*Mimosestes*."

New Host Records for Species of *Mimosestes*

M. acaciestes Kingsolver and Johnson

Acacia sp.?: Mexico. Puebla: ca. 4,700 ft, 10 mi SE Acatlan, 3-IV-79 (CDJ 1105-79). Morelos: ca. 4100 ft, 10 mi E Cuernavaca, 4-IV-79 (CDJ 1112-79).

M. amicus (Horn)

Cercidium sp.: Mexico. Puebla: ca. 4700 ft, 10 mi SE Acatlan, 3-IV-79 (CDJ 1104-79).

Prosopis sp.: Mexico. Michoacan: ca. 800 ft, 20 mi S Nueva Italia, 6-III-79 (CDJ 634-79). Oaxaca: ca. 2800 ft, 62 mi SE Oaxaca, 11-III-79 (CDJ 761-79).

P. velutina Wooton: Mexico. Guerrero: 24 km W Tecpan, 28-XII-79 (CDJ 1151-79).

M. cinerifer (Fähræus)

Acacia cornigera (L.) Willd.: Mexico. Veracruz: 9 km NE Catemaco, Lago de Catemaco, 1-III-80 (CDJ 1581-80). Guerrero: 7 km SE Cruz Grande, 8-I-80 (CDJ 1453-80); 41 km E Copala, 8-I-80 (CDJ 1444-80); 2 km NW Cuajinicuilapa, 2-I-80 (CDJ 1301-80). Guatemala. Escuintla: 3 mi N Escuintla, 29-III-79 (CDJ 1026-79).

M. enterolobii Kingsolver and Johnson

Enterolobium schomburgkii Bentham: Panama. Canal Zone: 2 km N Miraflores Locks, 28-III-80 (CDJ 2192-80). Panama: Cerro Azul (Jefe), ca. 20 km NW Tocumen, 2-IV-80 (CDJ 2282-80).

M. humeralis (Gyllenhal)

Acacia cymbispina Sprague and Riley: Mexico. Oaxaca: 69 km SE Oaxaca, 21-XII-78 (CDJ 307-78).

A. pennatula (Schlectendal and Chamisso) Bentham: Mexico. Veracruz: 43 km ESE Cordoba, 28-II-80 (CDJ 1512-80). Guerrero: 28 km S Chilpancingo, 9-I-80 (CDJ

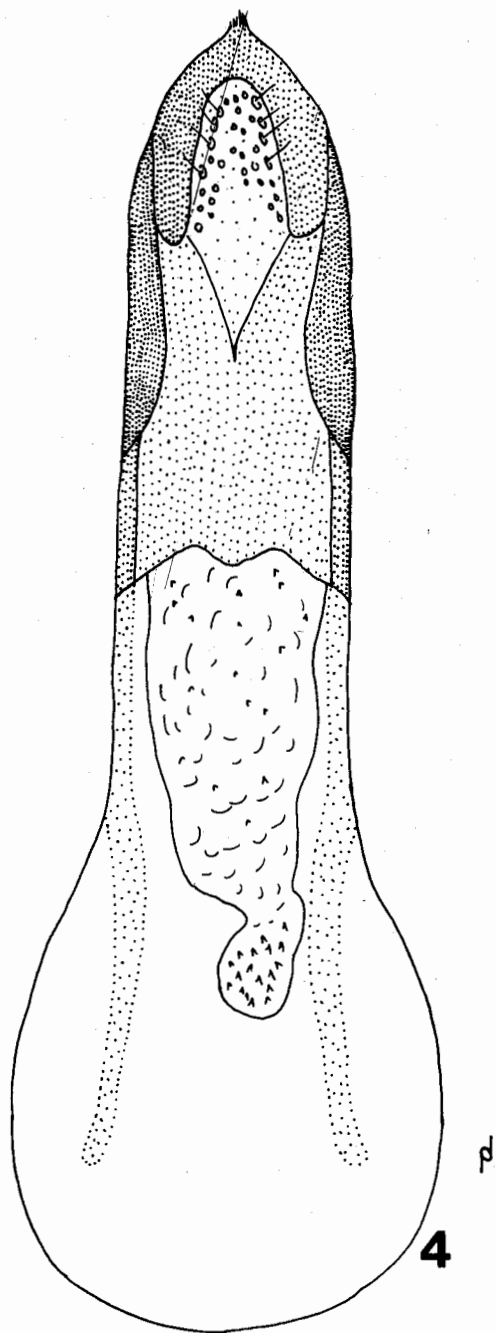


FIG. 4. *Mimosestes playazul*. male genitalia, median lobe.

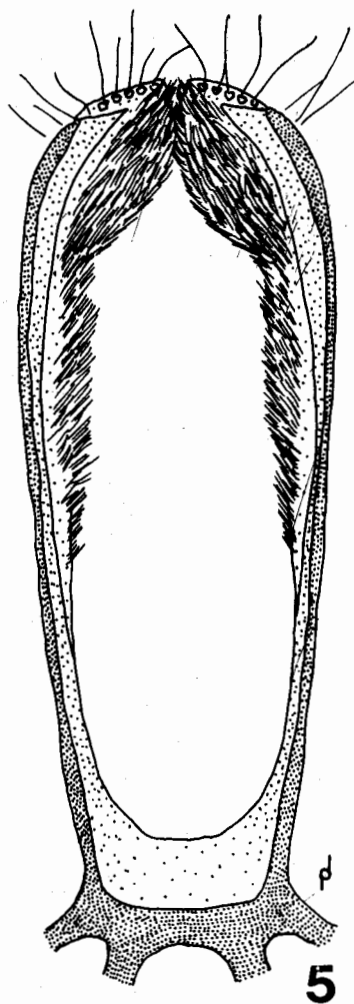


FIG. 5. *Mimosestes playazul*. male genitalia, lateral lobes.

***M. insularis* Kingsolver and Johnson**

Acacia sp.: Venezuela. Carabobo: Puerto Cabello, 10-VII-82 (CDJ 2399-82).

Prosopis sp.: Venezuela. Carabobo: Puerto Cabello, 12-VII-82 (CDJ 2416-82).

***M. janzeni* Kingsolver and Johnson**

Acacia cymbispina: Mexico. Oaxaca: 81 km SE Oaxaca, 21-XII-78 (CDJ 297-78); 69 km SE Oaxaca, 21-XII-78 (CDJ 307-78); 124 km SE Oaxaca, 22-XII-78 (CDJ 319-78); 116 km SE Oaxaca, 5-I-79 (CDJ 572-79); 9 km W Pochutla, 4-I-80 (CDJ 1335-80). Guerrero: 41 km E Copala, 8-I-80 (CDJ 1448-80).

A. cochliacantha Humb. and Bonpl. ex Willd.: Mexico. Oaxaca: 18 km NW Puerto Escondido, 3-I-80 (CDJ 1306-80).

***M. mimosae* (F.)**

Acacia cochliacantha: Mexico. Oaxaca: 18 km NW Puerto Escondido, 3-I-80 (CDJ 1306-80).

1470-80). Oaxaca: 53 km SE Oaxaca, 21-XII-78 (CDJ 288-78); 57 km SE Oaxaca, 21-XII-78 (CDJ 291-78); 55 km SE Oaxaca, 5-I-79 (CDJ 577-79); 95 km SW Oaxaca, 6-I-79 (CDJ 589-79). Chiapas: 13 km W Ocozacoautla, 23-XII-78 (CDJ 362-78); ca. 5900 ft, 2 mi NW Comitán, 31-III-79 (CDJ 1045-79). Guatemala. Huehuetenango: ca. 6,200 ft, 6 mi NW Huehuetenango, 30-III-79 (CDJ 1030-79).

A. collinsii Safford: Mexico. Guerrero: 1 mi NW Cuajinicuilapa, 9-III-79 (CDJ 739-79). Guatemala. Jutiapa: 7 km WNW Jalpatagua, 16-III-80 (CDJ 1969-80).

A. cornigera: Guatemala. Escuintla: 3 mi N Escuintla, 29-III-79 (CDJ 1026-79).

A. cymbispina: Mexico. Michoacan: ca. 1900 ft, 28 mi S Uruapan, 6-III-79 (CDJ 626 & 629-79); ca. 2600 ft, 48 mi N Playa Azul, 6-III-79 (CDJ 645-79); 6 mi NE Playa Azul, 7-III-79 (CDJ 652-79); 13 km W Playa Azul, 29-XII-79 (CDJ 1198-79). Sinaloa: 1 mi SE Rosario, 4-III-79 (CDJ 598-79); 66 mi NW Mazatlan, 9-IV-79 (CDJ 1138-79). Guerrero: 46 mi NW Zihuatanejo, 7-III-79 (CDJ 668-79); 25 mi E Acapulco, 9-III-79 (CDJ 722-79); 41 km E Copala, 8-I-80 (CDJ 1448-80). Oaxaca: 69 km SE Oaxaca, 21-XII-78 (CDJ 307-78); 124 km SE Oaxaca, 22-XII-78 (CDJ 319-78); 17 km NE Juchitan, 23-XII-78 (CDJ 339-78); 116 km SE Oaxaca, 5-I-79 (CDJ 572-79); 21 km NW Tehuantepec, 5-I-79 (CDJ 564-79); 9 km W Pochutla, 4-I-80 (CDJ 1335-80); 15 km SE Puerto Escondido, 5-I-80 (CDJ 1364-80); 22 km NW Puerto Escondido, 6-I-80 (CDJ 1373-80).

A. farnesiana (L.) Willd.: Mexico. Guerrero: 46 mi NW Zihuatanejo, 7-III-79 (CDJ 673-79). Guatemala. Huehuetenango: ca. 6,200 ft, 6 mi NW Huehuetenango, 30-III-79 (CDJ 1031-79). Zacapa: 3 km ENE Rio Hondo, 13-III-80 (CDJ 1860-80); 18 km ENE Rio Hondo, 13-III-80 (CDJ 1874-80); 5 km ENE Rio Hondo, 14-III-80 (CDJ 1936-80). El Progreso: 10 km W Sanarate, 15-III-80 (CDJ 1950-80). Honduras. 4 km SE Comayagua, 19-III-80 (CDJ 2003 & 2004-80).

A. gaumeri Blake: Mexico. Yucatan: 23 km N Muna, 4-III-80 (CDJ 1687-80).

A. hindsii Bentham: Guatemala. Zacapa: 40 km ENE Rio Hondo, 13-III-80 (CDJ 1878-80).

A. hirtipes Safford: Guatemala. Santa Rosa: 2 km ESE Cuilapa, 16-III-80 (CDJ 1959-80).

A. pennatula: Mexico. Jalisco: ca. 5,700 ft, 3 mi E Tuxcueca, 5-III-79 (CDJ 612-79). Guerrero: 28 km S Chilpancingo, 9-I-80 (CDJ 1470-80). Oaxaca: 53 km SE Oaxaca, 21-XII-78 (CDJ 288-78). Chiapas: 13 km W Ocozocoautla, 23-XII-78 (CDJ 362-78); ca. 5,900 ft, 2 mi NW Comitán, 31-III-79 (CDJ 1045-79). Yucatan: 19 km N Valladolid, 7-III-80 (CDJ 1713-80); 23 km N Muna, 4-III-80 (CDJ 1686-80); 2 km S Rio Lagartos, 7-III-80 (CDJ 1732-80); 26 km S Valladolid, 9-III-80

(CDJ 1811-80); 15 km W Valladolid, 10-III-80 (CDJ 1814-80); 53 km W Valladolid, 10-III-80 (CDJ 1831-80); 13 km SW Maxcanu, 1-I-79 (CDJ 511-79). Quintana Roo: 25 km N Tulum, 9-III-80 (CDJ 1792-80). Guatemala. Huehuetenango: ca. 6,200 ft, 6 mi NW Huehuetenango, 30-III-79 (CDJ 1030-79).

Caesalpinia coriaria (Jacq.) Willd.: Mexico. Guerrero: 24 km W Tecpan, 28-XII-79 (CDJ 1149-79); 39 km NW Zihuatanejo, 31-XII-79 (CDJ 1263-79).

Parkinsonia aculeata L.: Venezuela. Carabobo: Puerto Cabello, 10-VII-82 (CDJ 2397-82).

M. nubigena (Motschulsky)

A. farnesiana: Mexico. Michoacan: ca. 2,800 ft, 19 mi S Uruapan, 6-III-79 (CDJ 622-79); 6 mi NE Playa Azul, 7-III-79 (CDJ 655-79). Guerrero: 46 mi NW Zihuatanejo, 7-III-79 (CDJ 673-79). Oaxaca: 69 km SE Oaxaca, 21-XII-78 (CDJ 306-78). Campeche: 16 km N Champoton, 3-III-80 (CDJ 1648-80). Guatemala. Huehuetenango: ca. 6,200 ft, 6 mi NW Huehuetenango, 30-III-79 (CDJ 1031-79). Zacapa: 3 km ENE Rio Hondo, 13-III-80 (CDJ 1860-80); 18 km ENE Rio Hondo, 13-III-80 (CDJ 1874-80); 5 km ENE Rio Hondo, 14-III-80 (CDJ 1936-80). El Progreso: 10 km W Sanarate, 15-III-80 (CDJ 1950-80). Honduras. 4 km SE Comayagua, 19-III-80 (CDJ 2003-80). Colombia. Valle: 2 km E Tulua, 20-VII-82 (CDJ 2519-82).

M. viduatus (Sharp)

Acacia collinsii: Mexico. Yucatan: 3 km N Tizimin, 7-III-80 (CDJ 1723-80).

A. cymbispina: Mexico. Oaxaca: 81 km SE Oaxaca, 21-XII-78 (CDJ 297-78).

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