

NEW HOST RECORDS AND NOTES ON THE BIOLOGY
OF *STATOR* (COLEOPTERA: BRUCHIDAE)

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ABSTRACT

Stator subaeneus is confirmed as a member of a "scattered seed guild" and *S. vitatithorax* is the first *Stator* to be reported as a member of a "mature pod guild." *S. generalis* is now known to feed in seeds of *Enterolobium cyclocarpum* in Venezuela, the first record outside of Panama. In addition to the above species of *Stator*, new host records are reported for *S. aegrotus*, *S. championi*, *S. limbatus*, *S. mexicanus*, *S. monachus*, *S. pruininus*, *S. sordidus*, *S. trisignatus*, and *S. vachelliae*.

Recently several papers have documented the systematics and the interactions between species of *Stator* and their host plants (Johnson and Kingsolver 1976; Johnson 1981a, b, c; Johnson and Janzen 1982). Since their publication, additional data on the biology and host plants of *Stator* have been gathered. These are reported below.

Johnson (1981a) classified species of bruchids into feeding guilds. Those that only oviposit on and feed in mature pods were referred to as the "mature pod guild"; those that oviposit on and feed in mature seeds in pods on the plant were called the "mature seed guild"; and those that oviposit only on and feed in mature seeds on the ground are the "scattered seed guild." My recent field studies have verified that *Stator subaeneus* is a member of the scattered seed guild and that it consumes the seeds of *Acacia collinsii*, a previously unrecorded host for a *Stator*. *Stator vachelliae*, another member of this guild, but a species that has a very narrow host range, even under experimental conditions (Johnson 1981b), feeds in the seeds of the unlikely host *Parkinsonia aculeata* in Venezuela. This host has partially dehiscent pods and *S. vachelliae* is known to feed only in seeds of indehiscent acacias. Another member of this scattered seed guild, *S. sordidus*, has a narrow natural host range, but a broad range of hosts under experimental conditions. It has been found to feed in seeds of the previously unrecorded hosts *Acacia cymbispina* and *Pithecellobium dulce* in nature. *Stator generalis*, another member of this guild, previously had a known distribution only in central Panama. Johnson and Janzen (1982) speculated that the absence of *S. generalis* from the seeds of its only known host, *Enterolobium cyclocarpum*, from western Panama northward into Mexico was because seeds are not available in amounts or a pattern appropriate for *S. generalis* to survive. Presumably the amounts and pattern of seeds are different south of Panama because *S. generalis* has been reared from seeds of its host from north-central Venezuela.

A member of the mature seed guild, *S. limbatus*, previously had been reported from an unknown species of *Calliandra* (Johnson and Kingsolver 1976). Here I report that it feeds in the seeds of at least 2 and possibly 3 other species of *Calliandra*. This genus has previously been reported to be fed upon heavily by members of the scattered seed guild (Johnson 1981a, c).

Stator vittatithorax glues its eggs to pods; thus, it is the only species of *Stator* that is a member of the mature pod guild (preliminary studies indicate that *S. aegrotus* or *S. trisignatus* or both are also in this guild). Possibly because of the habit, *S. vittatithorax* is now known to have a much broader range of hosts than originally reported (Johnson and Kingsolver 1976). Due to the misidentification of a plant, Johnson and Kingsolver (1976) indicated that *Piptadenia flava* (Spreng.) Benth. was a host for *S. vittatithorax*. The plant (CDJ #380-73) is now known to be *Lysiloma desmostachys*; therefore *P. flava* is not known to be a host for *S. vittatithorax*.

In addition to explaining the notes presented here, the list of host records presented below are published to make them available for use in ecological and evolutionary studies currently under way.

The voucher plant samples that I collected and from whose seeds I reared species of *Stator* 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.

NEW HOST RECORDS FOR SPECIES OF *STATOR*

S. aegrotus (Sharp)

Acacia hayesii Benth.: **Panama**. Canal Zone: Snyder-Molino & Wheeler Trails, Barro Colorado Island (BCI), IV-5-80 (CDJ #2330-80); Shannon Trail, BCI, IV-5-80 (CDJ #2352-80); Barbour-Lathrop Trail 800, BCI, IV-7-80 (CDJ #2375-80).

S. championi (Sharp)

Bixa orellana L.: **Colombia**. Valle: Cumbre, VII-17-82 (CDJ #2463-82).

S. generalis Johnson and Kingsolver

Enterolobium cyclocarpum (Jacq.) Griseb.: **Panama**. Canal Zone: 4 km NE Gatun Locks, III-25-79 (CDJ #1006-79). Panama: Panama Viejo, III-26-79 (CDJ #1011-79); Panama Viejo, III-25-80 (CDJ #2105-80). **Venezuela**. Aragua: Maracay, VII-8-82 & VII-10-82 (CDJ #2386 & 2387-82). Carabobo: 5 km W Giague, VII-10-82 (CDJ #2389-82).

S. limbatus (Horn)

Acacia angustissima (Mill.) Kuntze: **Mexico**. Oaxaca: 81 km SE Oaxaca, XII-21-78 (CDJ #296-78). Campeche: 5 km N Hopelchen, III-4-80 (CDJ #1669-80). Yucatán: 20 km S Progreso, XII-30-78 (CDJ #484-78); 23 km W Motul, XII-30-78 (CDJ #487-78); 13 km E Mérida, III-10-80 (CDJ #1854-80). **Colombia**. Valle: Jardín Botánico de Tulua, VII-20-82 (CDJ #2529-82).

A. gaumeri Blake: **Mexico**. Yucatán: 20 km S Progreso, XII-30-78 (CDJ #479-78); 3 km N Tizimin, III-7-80 (CDJ #1721-80); 2 km S Río Lagartos, III-7-80 (CDJ #1729-80); 23 km N Muna, III-4-80 (CDJ #1687-80); 7 km N Uxmal, III-4-80 (CDJ #1675-80); 15 km W Valladolid, III-10-80 (CDJ #1816-80); 13 km E Mérida, III-10-80 (CDJ #1856-80). Quintana Roo: 25 km N Tulum, III-9-80 (CDJ #1791-80); 57 km S Cancun, XII-28-78 (CDJ #430-78). **Honduras**. LaPaz: 1 mi E LaPaz, III-18-79 (CDJ #878-79).

A. picachensis T. S. Brandg.: **Mexico**. Michoacán: ca. 800', 20 mi S Nueva Italia, III-6-79 (CDJ #632-79). Oaxaca: 32 km NW Tehuantepec, I-5-79 (CDJ #566-79).

A. tenuifolia (L.) Willd.: **Mexico**. Campeche: 15 km E Campeche, III-4-80 (CDJ #1658-80). Yucatán: 7 km N Uxmal, III-4-80 (CDJ #1677-80); 2 km W Chemax, III-8-80 (CDJ #1757-80); 53 km W Valladolid, III-10-80 (CDJ #1828-80).

Acacia sp.: **Mexico**. Oaxaca: ca. 2,800', 62 mi SE Oaxaca, III-11-79 (CDJ #760-79); ca. 4,000', 69 km SE Oaxaca, IV-2-79 (CDJ #1098-79). **Guatemala**. Suchitepequez: 28 mi SE & 20 mi SE Mazatenango, III-14-79 (CDJ #804-79 & 798-79).

Albizia caribaea (Urban) Britton & Rose: **Honduras**. Comayagua: 11 km SW Comayagua, III-23-80 (CDJ #2090-80).

Albizia sp.: **Honduras**. Comayagua: 1,800', 11 mi SW Comayagua, III-18-79 (CDJ #874 & 875-79). **Brazil**. R. J.: Praia Flamengo, Río de Janeiro, VIII-11-82 (CDJ #2558-82).

Calliandra confusa Sprague & Riley: **Panama**. Chiriqui: 43 km N David, III-22-79 (CDJ #929-79).

C. houstoniana (Mill.) Standl.: **Mexico**. Chiapas: 16 km S Ixtapa, XII-25-78 (CDJ #363-78). Guerrero: 28 km S Chilpancingo, I-9-80 (CDJ #1465-80). **Guatemala**. Izabal: 12 km SE Mariscos, III-14-80 (CDJ #1932-80).

Calliandra sp.: **Mexico**. Chiapas: ca. 3,400', 20 mi S Comitán, III-31-79 (CDJ #1043-79).

Cercidium sp.: **Mexico**. Baja California: 64 km NE Villa, XI-21-80 (E. L. Sleeper).

Leucaena leucocephala (Lam.) de Wit.: **Mexico**. Yucatán: 13 km E Mérida, III-10-80 (CDJ #1851-80). Oaxaca: 4 mi NE Tehuantepec, I-4-79 (CDJ #561-79).

Lysiloma acapulcensis (Kunth.) Benth.: **Guatemala**. El Progreso: 17 km W Sanarate, III-15-80 (CDJ #1953-80).

L. divaricata (Jacq.) MacBride: **Mexico**. Sonora: 10 mi N Guaymas, III-1-79 & IV-10-79 (CDJ #595-79, 1142 & 1143-79). Oaxaca: 93 km SE Oaxaca, I-5-79 (CDJ #574-79).

L. latisiliquum (L.) Benth.: **Mexico**. Yucatán: 13 km E Mérida, III-10-80 (CDJ #1853-80).

Lysiloma sp.: **Mexico**. Oaxaca: 32 km NW Oaxaca, XII-20-78 (CDJ #260-78); 17 km NE Juchitán, XII-23-78 (CDJ #338-78).

Pithecellobium dulce (Roxb.) Benth.: **Mexico**. Michoacán: ca. 800', 20 mi S Nueva Italia, III-6-79 (CDJ #631-79). Oaxaca: 4 km NE Tehuantepec, I-4-79 (CDJ #560-79). **Guatemala**. El Progreso: 10 km W Sanarate, III-15-80 (CDJ #1951-80). **Honduras**. LaPaz: 5 km E LaPaz, III-23-80 (CDJ #2100-80 & 2101-80). **Colombia**. Valle: 1 km N Buga, VII-20-82 (CDJ #2518-82); Jardín Botánico de Tuluá, VII-20-82 (CDJ #2525-82).

P. saman (Jacq.) Merrill: **Guatemala**. Santa Rosa: 13 mi SE Taxisco, III-15-79 (CDJ #812-79).

P. scalare Griseb.: **Brazil**. R. J.: Praia de Flamengo, Rio de Janeiro, VIII-4-82 & VIII-6-82 (CDJ #2548 & 2552-82).

S. mexicanus Bottimer

Acacia cornigera (L.) Willd.: **Guatemala**. Escuintla: 3 mi N Escuintla, III-29-79 (CDJ #1026-79).

S. monachus (Sharp)

Acacia: **Guatemala**. Suchitepeque: 20 mi SE & 28 mi SE Mazatenango, III-14-79 (CDJ #794-79 & 804-79).

S. pruininus (Horn)

- Acacia* sp.: **Mexico**. Puebla: 10 mi SE Acatlan, IV-3-79 (CDJ #1105-79).
Desmanthus virgatus (L.) Willd.: **Mexico**. Michoacán: ca. 800', 20 mi S Nueva Italia, III-6-79 (CDJ #630-79).
Desmanthus sp.: **Honduras**. Comayagua: 20 km SE Comayagua, III-19-80 (CDJ #1999-80).
Mimosa albida Humb. & Bonpl.: **Honduras**. Comayagua: 12 mi S Comayagua, III-18-79 (CDJ #893-79).
M. eurycarpoides Rob.: **Mexico**. Guerrero: 46 mi NW Zihuatanejo, III-7-79 (CDJ #671-79).
M. lacerata Rose: **Mexico**. 23 km NW Oaxaca, XII-20-78 (CDJ #275-78); 88 km SW Oaxaca, I-6-79 (CDJ #579-79). Puebla: 36 km SE Tecamachalco, II-27-80 (CDJ #1487-80).
M. langlassei Mich.: **Mexico**. Guerrero: 39 km NW Zihuatanejo, XII-31-79 (CDJ #1264-79).
M. laxiflora Bentham: **Mexico**. Oaxaca: 69 km SE Oaxaca, XII-21-78 (CDJ #304-78); 105 km SE Oaxaca, XII-22-78 (CDJ #314-78); 69 km SE Oaxaca, I-5-79 (CDJ #576-79).
M. near laxiflora: **Mexico**. Puebla: ca. 4,700', 10 mi SE Acatlán, IV-3-79 (CDJ #1108-79).
M. pigra L.: **Mexico**. Oaxaca: 34 km N Pinotepa Nacional, I-7-80 (CDJ #1399-80).
M. pusilla Bentham: **Mexico**. Oaxaca: 8 km E Zanatepec, XII-23-78 (CDJ #343-78).
M. somnians H. & B. ex Willd.: **Mexico**. Guerrero: 28 km S Chilpancingo, I-9-80 (CDJ #1466-80). Oaxaca: 34 km NW Pinotepa Nacional, I-8-80 (CDJ #1436-80).
M. velloziana Mart.: **Mexico**. Guerrero: 46 mi NW Zihuatanejo, III-7-79 (CDJ #672-79).
Mimosa sp.: **Mexico**. Chiapas: ca. 2,200', 7 mi SW Cintalapa, IV-1-79 (CDJ #1076-79). **Honduras**. Comayagua: 9 mi S Comayagua, III-17-79 (CDJ #842-79).
Sesbania sp.: **Mexico**. Oaxaca: 9 km SW Juchitán, I-4-79 (CDJ #556-79).

S. sordidus (Horn)

- Acacia cymbispina* Sprague & Riley: **Mexico**. Guerrero: 46 mi NW Zihuatanejo, III-7-79 (CDJ #669-79).
A. picachensis: **Mexico**. Michoacán: ca. 800', 20 mi S Nueva Italia, III-6-79 (CDJ #632-79).
Lysiloma divaricata: **Mexico**. Sonora: 10 mi N Guaymas, III-1-79 (CDJ #595-79); 10 mi N Guaymas, IV-10-79 (CDJ #1142 & 1143-79). Sinaloa: 66 mi NW Mazatlán, IV-9-79 (CDJ #1136-79). Jalisco: ca. 5,700', 3 mi E Tuxcueca, III-5-79 (CDJ #614 & 615-79). Oaxaca: 93 km SE Oaxaca, I-5-79 (CDJ #574-79).
Pithecellobium dulce: **Honduras**. LaPaz: 2,200', 1 mi E LaPaz, III-18-79 (CDJ #890-79); 5 km E LaPaz, III-23-80 (CDJ #2101-80).

S. subaeneus (Schaeffer)

- Acacia collinsii* Safford: **Mexico**. Yucatán: 3 km N Tizimin, III-7-80 (CDJ #1723-80); 13 km E Mérida, III-10-80 (CDJ #1850-80).

S. trisignatus (Sharp)

Acacia hayesii: **Panama**. Canal Zone: Shannon Trail, Barro Colorado Island (BCI), IV-5-80 (CDJ #2352-80); Barbour-Lathrop Trail 800, BCI, IV-7-80 (CDJ #2375-80).

S. vachelliae Bottimer

Acacia collinsii: **Guatemala**. Jutiapa: 7 km WNW Jalpatagua, III-16-80 (CDJ #1969-80).

A. cymbisipina: **Mexico**. Sinaloa: 66 mi NW Mazatlán, IV-9-79 (CDJ #1137-79).

A. farnesiana (L.) Willd.: **Mexico**. Puebla: 9 km E Tepeaca, II-27-80 (CDJ #1484-80). Jalisco: ca. 5,700', 3 mi E Tuxcueca, III-5-79 (CDJ #613 & 616-79). Guerrero: 24 km W Tecpan, XII-28-79 (CDJ #1154-79). Oaxaca: ca. 4,000', 69 km SE Oaxaca, IV-2-79 (CDJ #1101-79). **Honduras**. Comayagua: 4 km SE Comayagua, III-19-80 (CDJ #2004-80).

A. pennatula (Schlectendal and Chamisso) Benth and *A. farnesiana*, seeds mixed: **Guatemala**. Huehuetenango: ca. 6,200', 6 mi NW Huehuetenango, III-30-79 (CDJ #1032-79).

Acacia: **Venezuela**. Carabobo: Puerto Cabello, VII-10-82 & VII-12-82 (CDJ #2400 & 2418-82). Lara: 5 km E Barquisimeto, VII-11-82 (CDJ #2408-82).

Parkinsonia aculeata L.: **Venezuela**. Carabobo: Puerto Cabello, VII-12-82 (CDJ #2410-82).

S. vittatithorax (Pic)

Acacia deamii (Britton & Rose) Standley: **Honduras**. Taladro, III-7-81 (J. V. Mankins).

A. gaumeri: **Mexico**. Campeche: 111 km E Francisco Escarcega, XII-27-78 (CDJ #407-78); 6 km S Tenabo, I-1-79 (CDJ #516-79); 7 km N Francisco Escarcega, III-3-80 (CDJ #1605-80). Yucatán: 2 km S Rio Lagartos, III-7-80 (CDJ #1729-80); 3 km N Tizimin, III-7-80 (CDJ #1721-80); 23 km N Muna, III-4-80 (CDJ #1687-80); 13 km E Mérida, III-10-80 (CDJ #1856-80); 15 km W Valladolid, III-10-80 (CDJ #1816 & 1817-80); 3 km W Valladolid, XII-29-78 (CDJ #443-78); 14 km S Progreso, XII-30-78 (CDJ #470-78); 20 km S Progreso, XII-30-78 (CDJ #479-78). Quintana Roo: 57 km S Cancun, XII-28-78 (CDJ #430-78); 25 km N Tulum, III-9-80 (CDJ #1791-80). **Honduras**. LaPaz: 2,200', 1 mi E LaPaz, III-18-79 (CDJ #878 & 880-79).

A. picachensis: **Mexico**. Michoacán: ca. 800', 20 mi S Nueva Italia, III-6-79 (CDJ #632-79). Guerrero: 24 km W Tecpan, XII-28-79 (CDJ #1160-79). Oaxaca: 32 km NW Tehuantepec, I-5-79 (CDJ #566-79). **Guatemala**. Zacapa: 23 km SW Rio Hondo, III-15-80 (CDJ #1939-80).

Acacia sp.: **Mexico**. Oaxaca: ca. 2,800', 62 mi SE Oaxaca, III-11-79 (CDJ #760-79); ca. 4,000', 69 km SE Oaxaca, IV-2-79 (CDJ #1098-79).

Calliandra capillata Benth: **Mexico**. Yucatán: 20 km S Progreso, XII-30-78 (CDJ #483-78).

Lysiloma desmostachys Benth: **Mexico**. Colima: ca. 1,100', 7 mi S Colima, III-7-73 (CDJ #380-73).

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