

**REDESCRIPTION OF *BRADYSIA SPATITERGUM*
(Hardy) AND NEW RECORDS FROM PANAMA
AND BRAZIL (Diptera : Sciaridae)¹**

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Abstract : The ♂ and ♀ of *Bradysia spatitergum* (Hardy) (new combination) are re-described and figured. New records from Panama and Brazil are listed. The following indices are proposed for certain relative measurements of wing veins previously used as key taxonomic characters: The *radial-medial index* and the *costal-medial index*.

Recently, Sylvia P. Barretto Smith of the Department of General Biology, Universidade de São Paulo, Brazil, sent to me for identification some species of a sciarid which they are rearing for cytological studies. It is a species previously considered endemic to the Hawaiian Islands. Since this species belongs to the genus *Bradysia*, but was described in *Sciara* (Hardy 1956), I am publishing this note now in order to make the correct name available to other workers.

Terminology and measurements are essentially as used in Steffan (1966). Measurements of various wing veins are defined and illustrated here (fig. 2). Some changes have been made in the descriptive methods and terminology and these will be explained fully in a later publication.

***Bradysia spatitergum* (Hardy), new combination**

Sciara (Lycoriella) spatitergum Hardy, 1956, Proc. Haw. Ent. Soc. **16**: 85; 1960, In Zimmerman, Insects of Hawaii. Diptera: Nematocera-Brachycera **10**: 229.

♂. *Head* : Interfacetal hairs extend well beyond outer curvature of facets; eye bridge broadly joined, 3 facets wide at junction; median ocellar bristles well developed. Antenna: scape with single median transverse row of 4-5 setae, anterior seta at least 2-3× length of flagellar hairs, pedicel with distal row of shorter setae and 3-4 scattered anterior setae; flagellomere 4 (fig. 1b) about 2.2 times longer than wide with short wide neck (0.20 length), flagellar hairs slightly shorter than diameter of flagellomeres. Prefrons with 2 strong ventral and 8 scattered weakly developed setae; clypeus bare. Palpus 3 segmented (fig. 1c); segment 1 slightly swollen, distal half with 3 dorsal setae and numerous dorsal basiconic sensillae; segment 2 with 4-5 setae; segment 3 narrow, subequal in length to segment 1, with 7-8 setae.

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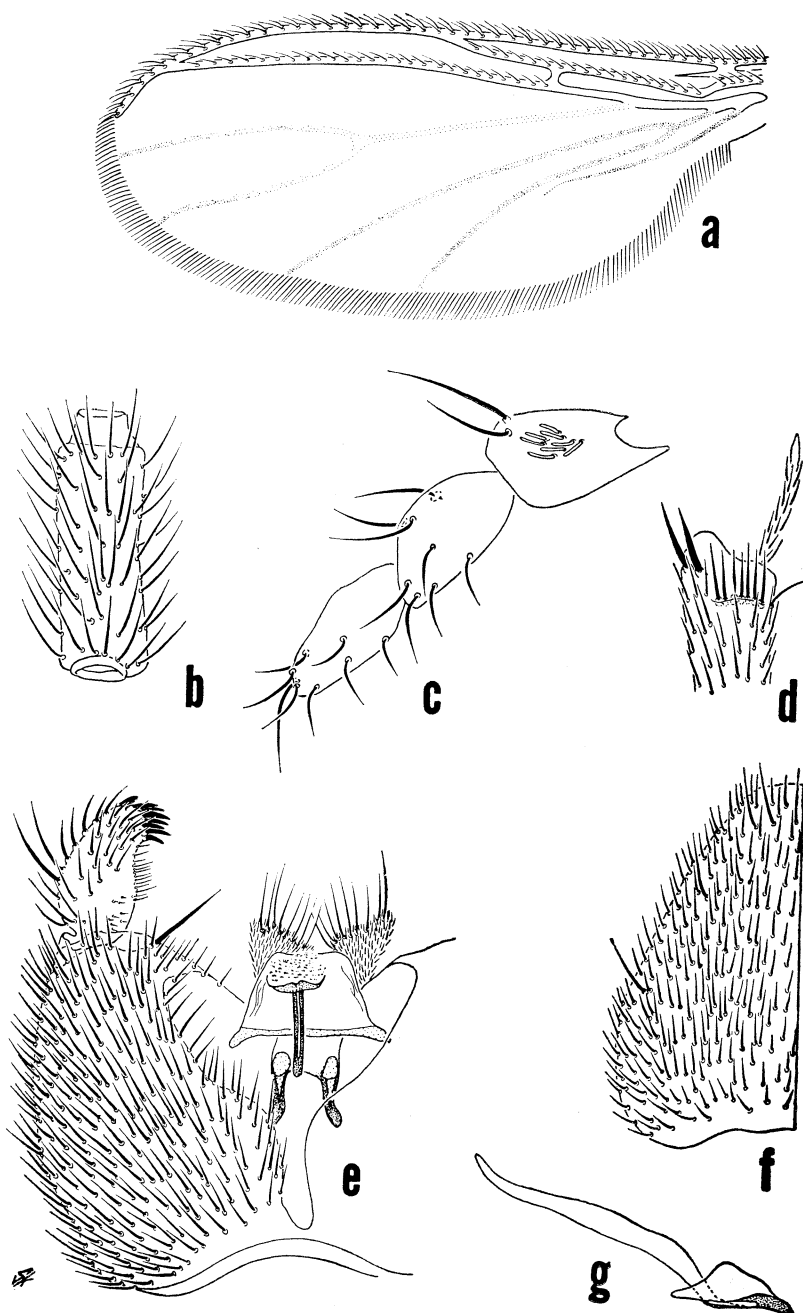


Fig. 1. *Bradysia spatitergum* (Hardy) ♂. a, wing; b, flagellomere 4; c, palpus; d, fore tibial comb; e, genitalia, ventral view; f, tergum IX. ♀. g, vaginal furca, lateral view.

Thorax : Acrostichals moderately developed to posterior third ; dorsocentrals well developed. Mesonotum largely yellowish except for brownish border along lateral edges and dorsocentral areas forming 3 oval yellowish patches, lateral patches extend to scutellum, median patch extends to about posterior third of mesonotum and is usually faintly divided by a narrow acrostichal stripe. Posterior pronotum bare, anterior pronotum with posterior row of 4 well developed setae. Proepisternum with 6 median setae subequal to *apn* setae. Pleural sclerites above katepisternum dark, katepisternum usually pale. Posterior mesoepimeron normal, about $2.3 \times$ longer than wide. Metanotal apodeme long and narrow, slightly hooked apically.

Legs : Fore leg ratio ; 23 : 27 : 17 : 7, hind leg ratio ; 34 : 46 : 20 : 7. Setae of fore tibia largely subequal, none are distinctly enlarged ; mid tibial setae largely subequal with a few scattered enlarged setae ; hind tibia with distinctly enlarged and elongated posterior setae along distal two-thirds. Fore tibial comb (fig. 1d) unilateral with 5-7 enlarged subequal setae separated proximally from tibial vestiture by distinct triangular bare area. Apex of hind tibia with 10 enlarged setae ; spurs about $1.8 \times$ longer than diameter of tibial apex. Tarsal claws simple.

Wing as illustrated (Fig. 1a) ; length 1.84 mm (range 1.70-1.96), width 0.70 mm (range 0.64-0.78). R-M index 1.83 (range 1.65-2.02), C-M index 0.70 (range 0.6-0.7). Costa, R_1 and R_5 with macrotrichia, other veins bare ; r-m $0.8 \times$ length of bM (range 0.6-1.1) ; Cu $0.5 \times$ length of bM (range 0.3-0.7). Stem of Media evanescent. Haltere with single row of dorsal setae.

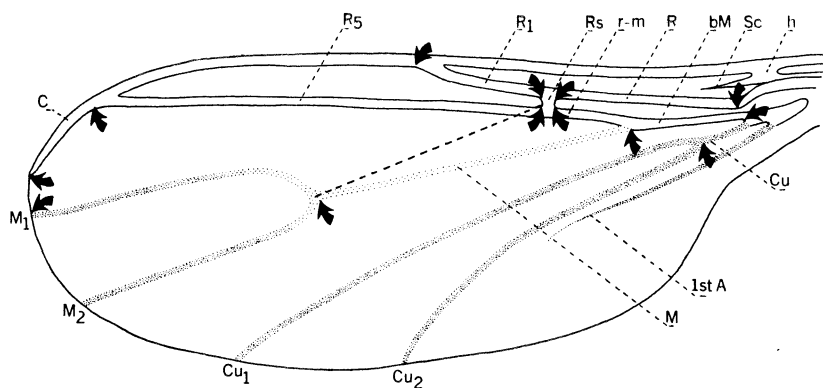


Fig. 2. *Bradysia spatitergum* (Hardy), wing.

Abdomen : Tergal setae well developed and dense, with mixture of long and short setae ; sternal setae subequal. Sternum VIII entirely covered with setae. Male genitalia as illustrated (fig. 1e) ; tergum IX conical, densely covered with short setae (fig. 1f). Tergum normal, bilobed, basimeres enlarged, densely covered with mixture of long and short setae, ventrally narrowly joined and without differentiated setal groups. Mesoapical setae about two-thirds length of distimere. Dorsal apodeme short and narrow extending almost halfway into genital cavity. Genital rod long and slender, broadly forked apically. Tegmen weakly sclerotized (fig. 1e). Distimere very short in relation to enlarged basimere, about 0.40 length of basimere, with 1 apical and 6 subequal preapical spines.

♀. Similar to ♂. Flagellomere 4 about 0.8 length that of ♂. Abdominal setae mostly long. Terminalia : Vaginal furca (fig. 1g), stem greatly swollen medially and flattened laterally, heavily chitinized anteroventrally ; arms arising near middle.

DISTRIBUTION. Hawaiian Is. (detailed locality records will be published at a later date).

NEW RECORDS. BRAZIL : 37 ♂♂, 85 ♀♀, Mongaguá, nr. Santos, São Paulo, sea level, S.P.B. Smith. PANAMA : 286 ♂♂, 55 ♀♀, El Cermeno, XII.1939, ex *Heliotropium peruvianum*, nr. 4622, J. Zetek. PANAMA CANAL ZONE : 4 ♂♂, 1 ♀, Barro Colorado I., VI. 1940, ex *Heliconia mariae* flowers, nr. 4667, Zetek ; 4 ♂♂, 1 ♀, same data except V-VI. 1941, nr. 4838 ; 19 ♂♂, 31 ♀♀, same locality, XI.1941, nr. 4914, Zetek ; 16 ♂♂, 1 ♀, same locality, V.1944, ex fruit of *Heliconia mariae*, nr. 5176, Zetek.

Remarks : The above description is based on specimens taken in a Malaise trap at Kulekole Pass, Oahu, 5.II.1967 by J. R. Vockeroth. They have been compared with the holotype and represent the same species ; however, the holotype ♂ is smaller. A detailed study of variation in this and other Hawaiian Sciaridae will be published later.

Hardy (1960) reports that *B. spatitergum* was reared from rotting sugar cane, rotting sweet potatoes and coffee grounds. The Brazilian specimens were collected in a banana plantation where the flies were attracted by fermented sweet potato leaves. The Panama specimens were collected on *Heliotropium peruvianum* L. (= *H. arborescens* L.) and on flowers and fruit of *Heliconia mariae*. Both *H. arborescens* and *H. mariae* have been introduced into Hawaii and this may have been the method of entry for *B. spatitergum* or it could have been brought in on rotting sweet potatoes. *B. spatitergum* is probably widespread in the northern half of South America with extensions into Central America.

B. spatitergum differs from other known *Bradysia* in the enlarged basistyle but shares with members of the *B. tritici* (Coquillett) complex, a similar vaginal furca ; *i. e.* the median portion of the stem is inflated dorsoventrally.

WING VEIN INDICES

Various relative measurements of certain wing veins have been used as key taxonomic characters. In order to quantify these measurements, I am proposing the following indices.

The *radial-medial* index (R-M index) is the distance from a point distad of R_s to the base of the medial fork divided by the length of R_1 from a point distad R_s to the apex of R_1 . This replaces the phrase describing the termination of R_1 on the costa in relation to the base of the medial fork. In order to correlate the relative measurements given in previous works to the R-M index, the following comparison is made. If R_1 ends before the base of the medial fork, the R-M index will be greater than 1.0 ; if it ends opposite, it will be 1.0, and if it ends distad of the base of the medial fork, it will be less than 1.0.

Another character used is the length of the costa from the apex of R_s to the apex of the costa compared to the distance from the apex of R_s to the apex of M_1 . For this character, I propose the *costal-medial index* which is the distal length of the costa from the apex of R_s divided by the distance from the apex of R_s to the apex of M_1 . This index can be compared readily with previous uses of this comparative measurement since they were usually expressed as fractions. In some preparations, the apex of the costa may be difficult to locate precisely ; however, the bases of the marginal setae on the costa are

generally much larger than those on the remainder of the wing margin. The sections of each vein are measured between the points indicated by arrows (fig. 2). Frequently, the base of Cu (=Cu) is obscure; therefore, measurements are taken from a point opposite the bend of R.

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