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# NEW COMBINATION AND REDESCRIPTION OF *BRUCHUS INDIGOFERAE* GYLLENHAL (COLEOPTERA: BRUCHIDAE)

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## Abstract

The female holotype of *Bruchus indigoferae* Gyllenhal was presumably collected in India from the seeds of *Indigofera tinctoria* L. We examined the holotype and because it had all the characters necessary to place it into the New World genus *Acanthoscelides* Schilsky and it resembled closely some New World species of *Acanthoscelides,* we put it into *Acanthoscelides* as a **new combination.** The holotype is described and the collection locality questioned. The bruchids that feed in New and Old World species of *Indigofera* L. are discussed. We suggest that researchers studying the bruchids of *Indigofera* verify the names of the insects.

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The genus *Acanthoscelides* Schilsky is characterized by having several subapical spines on the medial margin of the hind femur. Most Bruchinae with this characteristic are from the New World and have been studied in several monographs by Johnson (1970, 1983, 1990). The genera *Bruchidius* Schilsky and *Bruchus* L., as presently defined, do not have the above characteristic and are of Old World origin. Most early authors placed most of their new species in *Bruchus.* After examining the type of *Bruchus indigoferae* Gyllenhal, the junior author determined that it was a species of *Acanthoscelides* because it has a subapical spine on the medial margin of the hind femur about as long as the width of the base of the hind tibia, which is followed by 3 spines about 0.5 as long as the first spine. So it is of probable New World origin. This is curious because the label on the type indicates that it was from India (India orient. Indigofera tin/ctoria Stev: [handwritten], 99, Typus [red label], 113 73, Naturhistoriska Riksmuseet Stockholm Loan no 331/96 [blue label], Naturhistoriska Riksmuseet Stockholm Loan no 802/98 [green label]). We have again examined the female type and it has affinities with many species in *Acanthoscelides* and is almost certainly of New World origin. We are therefore putting the specific epithet *indigoferae* into *Acanthoscelides* and we have described it below.

### *Acanthoscelides indigoferae* (Gyllenhal), **New Combination**

*Bruchus indigoferae* Gyllenhal 1839:34 (Type locality: India orientalis); Allard 1895:226; Pic 1913:29; Vazirani 1975:744; Udayagiri and Wadhi 1989: 135.

**Holotype Female.** *Length* (pronotum-elytra) 1.8 mm. Width 1.1 mm. Maximum thoracic depth 0.9 mm. *Integument Color.* Head, pygidium, appendages, and abdomen red-orange, eyes dark reddish brown, undersurfaces of thorax reddish brown, especially on lateral margins, pronotum and elytra mostly red orange but with median brown to dark brown stripe of variable width extending from apex of pronotum to apex of elytra. Vestiture. With recumbent white and golden hairs as follows: Eye with medial fringe of white hairs; postocular lobe with short white setae; postocular patch of white hairs; remainder of head with sparse white hairs; pronotum with dense white hairs, with dense stripe of white hairs on midline flanked by broad stripes of golden hairs; vestiture of elytron dense white on intervals between striae interrupted by patches of golden hairs as follows: intervals between striae 2 and 4 about 0.2 from base and at apex; between striae 1 and 4 about 0.3 from apex, between striae 5 and 9 about 0.5 from base; pygidium with moderately dense white hairs, dense white stripe on midline; undersurfaces and legs with moderately dense to dense white hairs, hairs more dense on lateral margins of undersurfaces. *Structure.* Head. Moderate in length, densely punctulate; frons with median glabrous line extending from frontoclypeal suture to vertex; vague transverse sulcus between upper limits of eyes; eye width equal to width of frons; ocular sinus about 0.7 width of eye; posterior margin of eye protruding from adjacent surfaces; postocular lobe rounded; 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 1–5 filiform to moniliform, 6–10 eccentric, 11 subacute apically, slightly longer than broad; antenna reaching to base of elytron. Prothorax. Disk subcampanulate with moderately dense punctations in no apparent pattern; cervical sulcus moderately deep, extending from near coxal cavity to about 0.6 distance to pronotal midline; lateral prothoracic carina extending from base to about 0.3 distance to coxal cavity; short median impressed line on median basal lobe; prosternum separating procoxae for about 0.7 their length. Mesothorax and Metathorax. Scutellum moderate in size, bifurcate at posterior margin, clothed with dense white pubescence to give quadrate appearance; elytron about twice as long as broad; striae deeply impressed, punctate, strial intervals punctulate; striae 3 and 4 closer at base than to adjacent striae, others subequal at base; humerus with fine punctations; undersurfaces punctulate, punctate on lateral margins of thorax; all of hind coxa punctate; hind femur constricted basally and apically, expanded medially to slightly wider than width of coxa; undersurface of femur with carina on inner margin; femur armed on inner edge with subapical acuminate spine about as long as width of tibial base followed by 3 spines about 0.5 as long as spine 1; tibia with ventral, lateroventral, lateral, and dorsomesal glabrous longitudinal carinae, shallow sulcus between ventral and lateroventral carinae; dorsal surface of tibia without fossa; tibial corona with 3 spinules; mucro about 0.3 as long as tarsomere 1, with slight sinus at base of mucro; tarsomere 1 with ventral, lateral, and mesal glabrous longitudinal carinae. Abdomen. Sternum 1 slightly flattened medially, about 0.4 as long as abdomen, posterior margin straight; sterna 2–4 unmodified, sternum 5 not emarginate at apex; pygidium punctate, convex in lateral view.

**Discussion.** *Acanthoscelides indigoferae* most closely resembles *A. difficilis* (Sharp). This is curious because all 12 of the known hosts of *A. difficilis* are in the genus *Mimosa* L. (Johnson 1990). We were unable to match it with any other known species because many species of *Acanthoscelides* species are separated primarily by differences in the male genitalia. Therefore, we must wait until the experts in molecular biology and cladistics solve this problem.

*Acanthoscelides indigoferae* (Gyllenhal), *A. caroni* Johnson, *A. indigoferestes* Johnson, *A. kingsolveri* Johnson and *A. ruficoxis* (Sharp) are the New World species that have been reported to feed in seeds of *Indigofera* L. (Gyllenhal 1839; Johnson 1983, 1990, 1998). *Acanthoscelides indigoferae* resembles some specimens of all of these species in external color and external morphology but without male genitalia, it is impossible to combine it with another species.

Either the type-specimen was not collected in India and had erroneous labels

attached to it or it was introduced into India from the New World and was on or feeding in seeds of indigo, *Indigofera tinctoria* L., an important source of indigo. Or there are indigenous species of *Acanthoscelides* in the Old World.

The specific epithet *indigoferae* Gyllenhal has appeared in the literature in combination with *Bruchus* and *Bruchidius*. *Bruchidius indigoferae* has been reported to feed in seeds of *Indigofera arrecta* Hochst. (Luca 1964; Udayagiri and Wadhi 1989), and *I. tinctoria* (Udayagiri and Wadhi 1989). *Bruchus indigoferae* has been reported to feed in seeds of *I. tinctoria* (Gyllenhal 1839; Zacher 1952).

*Bruchidius indigoferae* Singh and Saini (1978) was described from India after it was reared from seeds of *Indigofera tentoria* (sic). There is high probability that this is a synonym of *Bruchidius nalandus* (Pic 1927).

We wrote this paper with the hope that researchers in the future will find more specimens and hosts of the species to which the epithet *indigoferae* of Gyllenhal has been applied and that the species of bruchids that feed in species of *Indigofera* can be clarified.

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