

Genus	Vol. 10 (1): 65-72	Wrocław, 31 III 1999
-------	--------------------	----------------------

Notes on *Borowiecius* ANTON, with the description of a new species  
(Coleoptera: Bruchidae: Bruchinae)

KLAUS-WERNER ANTON  
Grünewaldstr. 13, 79312 Emmendingen, Germany

ABSTRACT. Species of Palaeotropical genus *Borowiecius* ANTON, 1994 are listed with regard to host plants, distribution, and examined material. *B. siamensis* n. sp. is described from India, Thailand and Vietnam; it is closely related to *B. ademptus* (SHARP, 1886). A key of species is provided.

Key words: entomology, taxonomy, zoogeography, new species, *Borowiecius*, *Bruchinae*, *Bruchidae*, Palaeotropics, Eastern Palaearctic.

The genus *Borowiecius* ANTON, 1994 is distributed in the Palaeotropical and eastern Palaearctic regions, from South Africa to Japan. There are five species, which in part have very similar morphology. *Borowiecius* can be identified by a combination of the following characters, which includes some additions and corrections to its original description: body short-oval; antenna of short to moderate size, indistinctly sexually dimorphic; pronotum campaniform, conical, square, without lateral carinae, without prescutellar gibbosity; scutellum apically bifid; elytra with or without basal double-hooked protuberance at striae 3 and 4; hind femora incrassate, ventrally bicarinate, lateroventral carina with blunt, preapical denticle, mesoventral carina with strong, acute, preapical denticle; hind tibiae broadened, with 4 carinae (sometimes ventrolateral carina reduced to minimum in *B. fusculus*), mucro distinctly longer than lateral coronal denticle (at extension of lateral carina); abdomen simple, pygidium vertical in male, subvertical in female; male genitalia with median lobe of moderate size, ventral valve triangular to subtriangular, apex of ventral valve varying from acuminate to acute or blunt, internal sac with pair of hinge sclerites and diverse minute to larger

needle- or denticle-like sclerites, lateral lobes separated, depressed, expanded mesoapically, tegminal strut without median carina.

Abbreviations used in the text:

BMNH: British Museum of Natural History (London, Great Britain);  
 CKWA: Collection of the author (Emmendingen, Germany);  
 MRAC: Musée Royale de l'Afrique Centrale (Tervuren, Belgium);  
 MNHN: Muséum Nationale d'Histoire Naturelle (Paris, France);  
 NHRS: Naturhistoriska Riksmuseet (Stockholm, Sweden);  
 NMHB: Naturhistorisches Museum (Basel, Switzerland);  
 SMNS: Staatliches Museum für Naturkunde (Stuttgart, Germany);  
 ZMFK: Zoologisches Forschungsinstitut Alexander Koenig (Bonn, Germany).

### ***Borowiecius* ANTON, 1994**

*Borowiecius* ANTON, 1994: 108. Type species: *Bruchus ademptus* SHARP, 1886.

### ***Borowiecius ademptus* (SHARP, 1886)**

(fig. 6)

*Bruchus ademptus* SHARP, 1886: 36.

*Callosobruchus ademptus*: CHÛJÓ, 1937: 190.

*Borowiecius ademptus*: ANTON, 1994: 109.

MATERIAL EXAMINED: Type (male) of *B. ademptus*: "Yuyama, Japan" (BMNH). CHINA: Fukien, Kuantun, 27°40'N 117°40'E, 3., 5., 6., 7.IV.1938, J. KLAPPERICH (ZMFK, CKWA); Fukien, Kuantun, 14.V., 1.VI., 6., 18., 19., 27.VIII., 14.X.1946, Tschung Sen (SMNS, CKWA). COREA: South Pyongyan prov., Lyong-ak san Hill, 15 km W Pyonggyang, 8.IX.1980, Topal & Forro (CKWA); same data, but 14 km W Pyonggyang, 30.VII.1975, J. Papp & A. Vojnitz (CKWA). INDIA: Darjeeling, KPG, Lower Bombusty, 1000 m, 18.V.1986, C. Rai (NHMB, CKWA). LAOS: Louangnamtha prov., Namtha - Muang sing, 21°09'N 101°19'E, 900-1200 m, 5.-31.V.1997, V. Kuban (CKWA). TAIWAN: Alishan, 10.VI.1977, J. Klapperich (SMNS, CKWA); Fenchihu, 13.VI.1977, J. Klapperich (SMNS, CKWA). VIETNAM: Tonkin, Hoa Binh reg., 1928, A. de Cooman (MNHN).

DISTRIBUTION: N India, Laos, Vietnam, S China, Corea, Taiwan, Japan; imported to U.S.A. (Bottimer 1961).

HOST PLANT: *Pueraria thunbergiana* = *P. lobata* (Bridwell 1938).

***Borowiecius alternans* (FAHRAEUS, 1871)**

(fig. 8)

*Bruchus alternans* FAHRAEUS, 1871: 446.*Borowiecius alternans*: ANTON, 1994: 109.

MATERIAL EXAMINED: Type (female) and paratype (female) "Caffra- / ria.", "I. VAHLB." (NHRS). SOUTH AFRICA: Cape prov., Mossel Bay, IV.1921, R. E. TURNER (MRAC); Natal, Durban, VIII.1920, A. F. GEDYE (MRAC); Pondoland, Port St. John, 15.-31.VIII., IX., X.1923, R. E. TURNER (MRAC).

DISTRIBUTION: South Africa.

HOST PLANT: Unknown.

***Borowiecius fuscus* ANTON, 1994**

(fig. 7)

*Borowiecius fuscus* ANTON, 1994: 110.

MATERIAL EXAMINED: Holotype (male): OMAN: Dhofar, Ain Rzat (Salalah), 17.II.1989, W. WITTMER (NHMB); paratype (male): same data (CKWA). No additional material available.

HOST PLANT: Unknown.

***Borowiecius siamensis* n. sp.**

(figs. 1-5)

## ETYMOLOGY

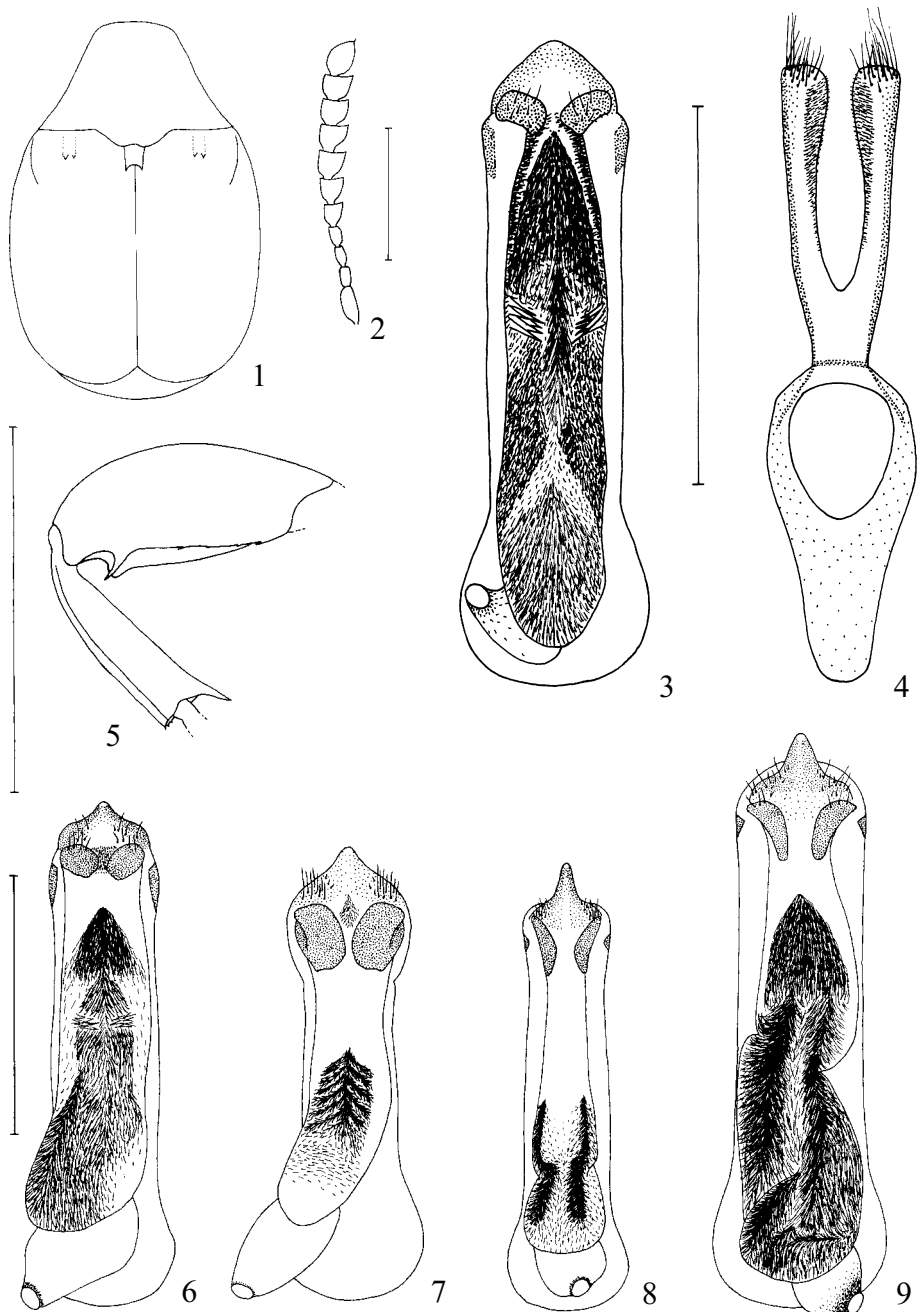
The name refers to the actually known main distribution.

## DIAGNOSIS

It is closely related to *B. ademptus* (SHARP, 1886). The latter differs in pronotum, elytra as well as hind legs except tarsi completely black and male antennal segments 8-10 distinctly wider, about 1.4 times wider than long. Although male genitalia are very similar to the new species, the apical third of the internal sac is lacking the transversely arranged needles. In addition, in *B. siamensis* the triangular area of oblique to vertical arranged needles in apical third is larger.

## DESCRIPTION

Length (pronotum - elytra): 2.0-2.9 mm, width: 1.3-2.0 mm.



1-5. *Borowiecius siamensis* n. sp.: 1 - habitus; 2 - male antenna; 3 - median lobe; 4 - tegmen; 5 - hind leg (mesal view). 6-9. Median lobe: 6 - *Borowiecius ademptus*; 7 - *B. fuscus*; 8 - *B. alternans*; 9 - *B. varicolor*.

5: scale bar = 1.0 mm; 2-4, 6-9: scale bar = 0.5 mm

Color of pronotum and elytra varying from red-brown to blackish; at least head blackish; antenna, fore and mid legs always yellow, hind legs always partially blackish.

Vestiture moderately dense, recumbent, not covering integument completely; vestiture varying from nearly uniformly golden-yellowish in more red-brown specimens with scarcely visible paler spots in elytral intervals 3, 5 and 7, to elytra variegated whitish-greyish, golden-yellowish and blackish in more darkened specimens, then interval 3 with 3 elongate whitish-greyish spots, with 3 irregular transverse bands of whitish-greyish spots and intervals 1-2, 4, 6, 8, 10 uniformly golden-yellowish; abdomen paler pubescent than dorsal surface; pygidium denser and dull pubescent, 4 spots of less denser setae in basal half and 2 lateroapically.

Head with moderate and dense punctures, constricted behind eyes. Frons and vertex with sharp, elongate, shiny interocular carina. Eyes bulging, greatest width of eye about 1.5 times of minimum distance between eyes; postocular lobe short and ocular sinus of half diameter of eye. Antennal segments 1-3 cylindrical, 4 subserrate, 5-10 serrate, 11 oblonge-oval (fig. 2).

Pronotum about 1.3 times wider than long (fig. 1). Sides linear to feebly concave. Base about twice wider than apex. Hind edge with oblique depression. Disc convex, with middle third flattened, with dense, setous, coarse punctation, distances of punctures less than their diameter, with shiny welts. Scutellum of moderate size, elongate.

Elytra as long as combined width, with maximum width at basal fourth (fig. 1). Disc weakly convex. Humeral calli distinct, feebly scabrous. Sides feebly convex. Inner third of apical margin with 3-4 feebly visible denticles. Indistinctly double-hooked, weak protuberance at base of striae 3 and 4. Striae distinct, moderately deep, with distinct, deep, setous punctation broader than stria, distance of punctures more or less than their diameters. Intervals flat, with micropunctation and irregular row of flat punctures.

Hind femora about twice as long as wide; lateroventral margin with blunt preapical denticle, mesoventral margin with large, acute denticle (fig. 5). Hind tibial length about 3 times of apical width; ventral, lateral and dorsomesal carinae complete, ventrolateral carina tapers off towards apex, mucro twice longer than lateral coronal denticle; dorsolateral coronal denticles distinctly shorter than lateral coronal denticle. Hind tarsal segments 1 about 0.6 times as long as hind tibiae.

Pygidium about 1.1 times longer than wide, with moderately dense, deep, coarse punctation at base becoming gradually flatter and smaller towards apex.

Male: Antenna extending to elytral base; segment 1 about 1.2 times longer than 2-4, segments 5-10 becoming steadily wider, segments 8-10 about 1.2 times wider than long, segment 11 about 1.5 times longer than wide (fig. 2). Sternite V emarginate towards base to about half of length. Pygidium 1.1 times longer than wide. Median lobe of moderate length; ventral valve square, subtriangular with blunt apical tip, flat. Internal sac with pair of bean-shaped hinge sclerites, with

diverse areas of several types of needles, at each side of middle part 6-10 larger denticles transverse arranged (fig. 3). Lateral lobes separated to three quarter of their length, apex with about 15 setae (fig. 4).

Female: Antenna extending to pronotal base; antennal segments somewhat shorter and more square than in male, 8-10 about 1.4 times wider than long, 11 as long as wide. Sternite V not emarginate. Pygidium weakly convex.

Host plant: Unknown.

#### TYPES

Holotype (male), allotype (female), 9 male and 7 female paratypes: NW Thailand, Mae Hong Son, Ban Huai Po, 8.-18.V.1992, 1600-2000 m, J. HORAK (CKWA) - holotype with genitalia slide no. 180198 III; female and 3 male paratypes: NW Thailand, Mae Hong Son, Ban Huai Po, 1600 m, 8.-17.1992, S. BILY (NHMB, CKWA); female paratype: NW Thailand, Mae Hong Son distr., Soppong-pai, 19°27'N 98°20'E, 1500 m, 7.-12.V.1996, J. HORAK (CKWA); female paratype: Thai, Mae Hong Son prov., Soppong, 19°27'N 98°20'E, 1500 m, 7.-12.V.1996, V. KUBAN (CKWA); female paratype: Thai, Chiang Dao, 19°25'N 98°52'E, 1000 m, 17.-24.V.1991, V. KUBAN (NHMB); male paratype: Thai, Umphang riv., 16°07'N 99°00'E, 1000 m, 28.IV.-6.V.1991, V. KUBAN (NHMB); male and female paratypes: Thailand, Ranong prov., Hat Som Paen env., 9°57'N 98°45'E, 23.-25.II.1996, K. MAJER (NHMB, CKWA); female paratype: Thailand, Ranong prov., Ban Na env., 9°34'N 98°42'E, 22.-26.III.1996, P. PRUDEK (CKWA); male paratype: N Vietnam, 52 km SW Lang Son, 21°35'N 106°30'E, 370 m, 27.IV.-6.V.1996, PACHOLATKO & DEMBICKY (CKWA); female paratype: India, Uttar Pradesh, Dehra Dun, 25.VI.1976, W. WITTMER (NHMB).

### ***Borowiecius varicolor* (BOHEMAN, 1833)**

(fig. 9)

*Bruchus varicolor* BOHEMAN, 1833: 69.

*Pachymerus varicolor*: SCHILSKY, 1905: MM.

*Callosobruchus varicolor*: DECELLE, 1970: 256.

*Borowiecius varicolor*: ANTON, 1994: 109.

MATERIAL EXAMINED: Type (female): "Cap. B. sp." (NHRS). BURKINA FASO: Kougny, 22.II.1980, A. PAULY (MRAC); Ougadougou, II.1990, H. MOURIER (MRAC). NAMIBIA: Okavango Riv., Begani, Popa Falls, 25.I.-6.II.1995, M. SNIZEK (CKWA). SOUTH AFRICA: "Cap. B. sp. / DE VYLDER" (NHRS); Cape of G. Hope, Table Mt., W. BEVINS (MRAC); Natal, Durban, F. MUIR (MRAC); "Terra Caffrorum / EIKLON et ZEYH." (NHRS); Transkei, Umtata, 18.II.-18.III.1923, R. TURNER (MRAC).

DISTRIBUTION: Burkina Faso, Namibia, South Africa, Zambia.

HOST PLANT: In Zambia: *Rhynchosia* spec. (DECELLE 1970); in Burkina Faso: *Acacia seyal*.

## KEY TO THE SPECIES

1. Elytral base with double-hooked protuberance at striae 3-4. Male genitalia: ventral valve with apex acute or blunt. Southwestern to eastern Asia ..... 3
- Elytral base without double-hooked protuberance at striae 3-4. Male genitalia: ventral valve with apex extended. Africa ..... 2
2. Pronotal sides concave to linear. Male genitalia: internal sac with striking area of needles restricted to basal part (fig. 8). 2.1-2.6 mm. South Africa ..... *alternans*
- Pronotal sides linear to feebly bisinuate. Male genitalia: internal sac with striking area of needles reaching from subapical part to base (fig. 9). 2.1-3.0 mm. From South Africa to Burkina Faso ..... *varicolor*
3. Integument completely red-brown to yellowish-brown. Male genitalia: median lobe with very large hinge sclerites near orifice, length of median lobe about 7 times longer than maximum length of hinge sclerite; mid part of internal sac without elongate, transverse arranged denticles (fig. 7). 2.5-2.7 mm. Oman ..... *fuscus*
- At least head blackish. Male genitalia: median lobe with hinge sclerites of moderate size, length of median lobe about 15-20 times longer than maximum length of hinge sclerite; each side of mid part of internal sac with 6-10 elongate, transverse arranged denticles. Southern to eastern Asia ..... 4
4. Hind legs except tarsi and elytra completely black. Eyes less bulging, greatest width of eye as wide as minimum distance between eyes. Male genitalia: median lobe with hinge sclerites oval; apical third of internal sac without transverse arranged needles (fig. 6). 1.9-2.7 mm. From N India to Korea and Japan ..... *ademptus*
- Color of hind legs and elytra varying from red-brown to incompletely blackish. Eyes stronger bulging, greatest width of eye 1.5 times wider than minimum distance between eyes. Male genitalia: median lobe with hinge sclerites bean-shaped; apical third of internal sac with transverse arranged needles (fig. 3). 2.0-2.9 mm. N India, N Thailand, N Vietnam ..... *siamensis*

## ACKNOWLEDGEMENTS

I wish to express my cordial thanks to the curators of institutions listed above for placing the type specimens at my disposal and for the loan of other specimens.

## REFERENCES

- ANTON, K.-W., 1994. The *Bruchidae* (Coleoptera) of Oman, with descriptions of a new genus and two new species. *Fauna of Saudi Arabia*, **14**: 105-112.
- BOHEMAN, C. H., 1833. In *SCHOENHERR, C. J., Genera et species curculionidum*, 1: 681 pp. Paris.
- BOTTIMER, L. J., 1961. New United States records in *Bruchidae*, with notes on host plants and rearing procedures (Coleoptera). *Ann. Entomol. Soc. America*, **54**: 292-298.

- BRIDWELL, J. C., 1938. *Specularius erythrinae*, a new bruchid affecting seeds of *Erythrina* (*Coleoptera*). J. Wash. Acad. Sci., **28**: 69-76.
- CHÛJÔ, M., 1937. Some additions and revisions of *Bruchidae* from Japanese Empire. Trans. Nat. Hist. Soc. Formosa, **27**: 189-200.
- DECELLE, J., 1970. *Coleoptera: Bruchidae*. S.Afr. Anim. Life, **14**: 256-266.
- FAHRAEUS, O. I., 1871. *Coleoptera* Cafrariae, Family *Brenthidae*, *Anthribidae* et *Bruchidae*. Ofv. Vet. Ak. Forh., **28**: 433-452.
- SHARP, D., 1886. On the *Bruchidae* of Japan. Ann. Mag. Nat. Hist., **17**: 34-38.
- SCHILSKY, J., 1905. *Bruchidae*. In: KUESTER, H. C. et G. KRAATZ, Die Käfer Europa's. Bauer & Raspe, **41**: 1-100, a-f, A-MM. Nürnberg.