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Kashmirobia, a new genus of flea beetles from the Oriental Region (Coleoptera: Chrysomelidae)

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Abstract

A new genus, *Kashmirobia*, with the type species *Aphthona hugeli* Jacoby from the Oriental Region is described and illustrated. Comparative notes are provided. Host plant of *K. hugeli* is *Euphorbia neriifolia* L. (Euphorbiaceae).

Key words: Chrysomelidae, new genus, Oriental Region

Introduction

As a result of a revision of the *Aphthona* Chevrolat of the Oriental Region, 19 wrongly placed species were removed from the genus (Konstantinov & Lingafelter, 2002). Most of them were placed in more or less related genera such as *Longitarsus* Latreille, *Luperomorpha* Weise, and *Trachyaphthona* Heikertinger (Konstantinov & Lingafelter, 2002). Four species were considered *incertae sedis* since their proper generic placement was not possible at the time. The genus *Orisaltata* Prathapan and Konstantinov (2006) was proposed to include two of these four species. Further studies and additional material revealed that the third species, originally described as *Aphthona hugeli* Jacoby (1900), belongs to a new genus which is described below. Dissecting techniques and terminology follow Konstantinov (1998). The beetles are deposited in the following collections: National Museum of Natural History, Smithsonian Institution, Washington D. C. (USNM), Museum of Comparative Zoology, Cambridge, Massachusetts, USA (MCZC), and the personal collection of the second author (PKDC).

The only information on the host plant of this genus was the remarks on the label of a paralectotype from Satara in central India cited by Maulik (1926): “feeds on *Pereskia*

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aculeata, Mill., a species of cactus, found in thousands; the cactus is so bitter that its milky juice blisters the hands". We found this piece of information much intriguing as Cactaceae are not native to India and do not possess latex vessels. However, there are a few Euphorbiaceae members with latex vessels which mimic cacti and are adapted for arid conditions. Based on the label data it is highly probable that the host is a very common plant ("*found in thousands*") with acrid latex resembling cacti ("*the cactus is so bitter that its milky juice blisters the hands*") and therefore we decided to search for it in Satara. On consultation with S. A. Punekar and colleagues in the Agharkar Research Institute, Pune, who know the plants of the area well, we zeroed in on three species of *Euphorbia* as the probable hosts. Since the present day Satara is a town with meager vegetation, one of us (PKD) checked the Kas Plateau near Satara which still retains the native flora and found the beetle feeding on its host plant. We succeeded in our efforts to find out the host plant and the beetle, a century after its collection from Satara, only through the lead provided by the crisp description of the plant on the label. This is yet another lucid illustration of the importance of recording observations which may appear trivial.

Kashmirobia **new genus**
(Figs 1–11)

Description. Body (Fig. 1) length 3.13–3.67 mm, width 1.81–2.05 mm, elongate, relatively flat in lateral view [2.32 times as long (not including the head) as thick]. Elytron and last eight antennomeres dark brown with light reddish tint, rest of antenna, body and legs dark yellow.

Head (Fig. 2) flat in lateral view with long facial part. Frons and vertex form slightly curved line in lateral view. Supraorbital pore relatively small, situated just above orbital sulcus. Antennal callus separated from frons and vertex. Supraorbital, suprafrontal, suprantennal, and supracallinal sulci deep and well defined. Midfrontal sulcus absent (as a result of antennal calli barely touching each other in middle of head). Subgenal suture shallow, but sharply outlined along base of mandible. Orbit 0.58 times as wide as transverse diameter of eye. Interantennal space 0.5 times as wide as transverse diameter of eye and 0.85 times as wide as transverse diameter of antennal socket. Frontal ridge narrow and acute, straight in lateral view forming denticle ventrally. Anterofrontal ridge as low as frontal ridge. Eyes slightly convex. Clypeus longer than half of labrum. Labrum with six setiferous pores, apical margin straight. Labium with three palpomeres per palpus, palpomeres longer than wide. Maxillary palpus with four palpomeres, apical palpomere slightly shorter than third and second separately (which are equal in length). Antenna with 11 antennomeres, of which second shortest (Fig. 1).

Pronotum (Fig. 1) 1.52 times wider than long (measured in middle). Disc with two shallow, weakly outlined, longitudinal impressions near base. Two other impressions situated on anterior part of pronotum, directed from anterolateral corners and approaching

middle of basal margin. Punctures small and sparse, ill defined. Sides weakly rounded and relatively widely explanated, converging gradually towards head. Anterolateral callosity long, weakly delimited from rest of margin. Posterolateral callosity protruding. Basal margin evenly convex, with thin border. Anterior coxal cavity widely open. Intercoxal prosternal process shallowly channeled, narrow in middle, widening posteriorly and widely rounded at apex.

Abdomen with five distinct sternites (Fig. 4). Apical (fifth visible) sternite shorter than fourth and third combined, without appendages basally. Apical tergite of female (Fig. 5) broadly rounded at apex, unevenly covered with long setae, with three rows of long setae in middle.

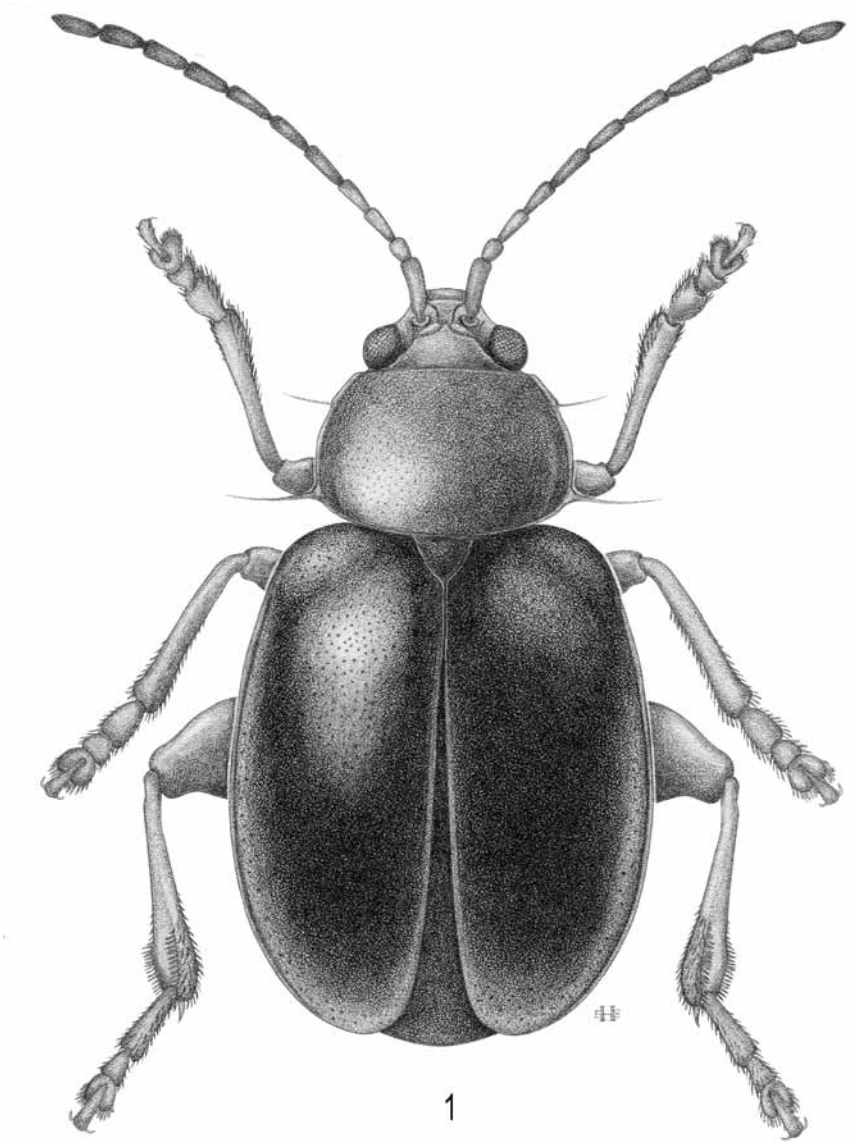
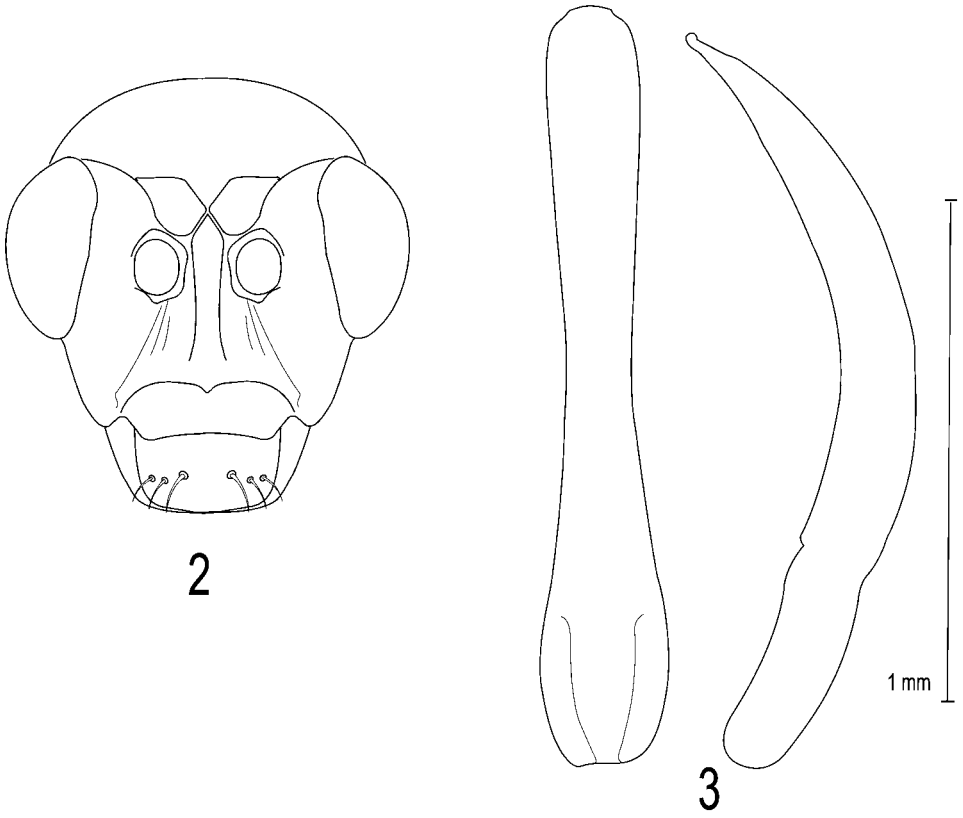


FIGURE 1. *Kashmirobia hugeli*, habitus.

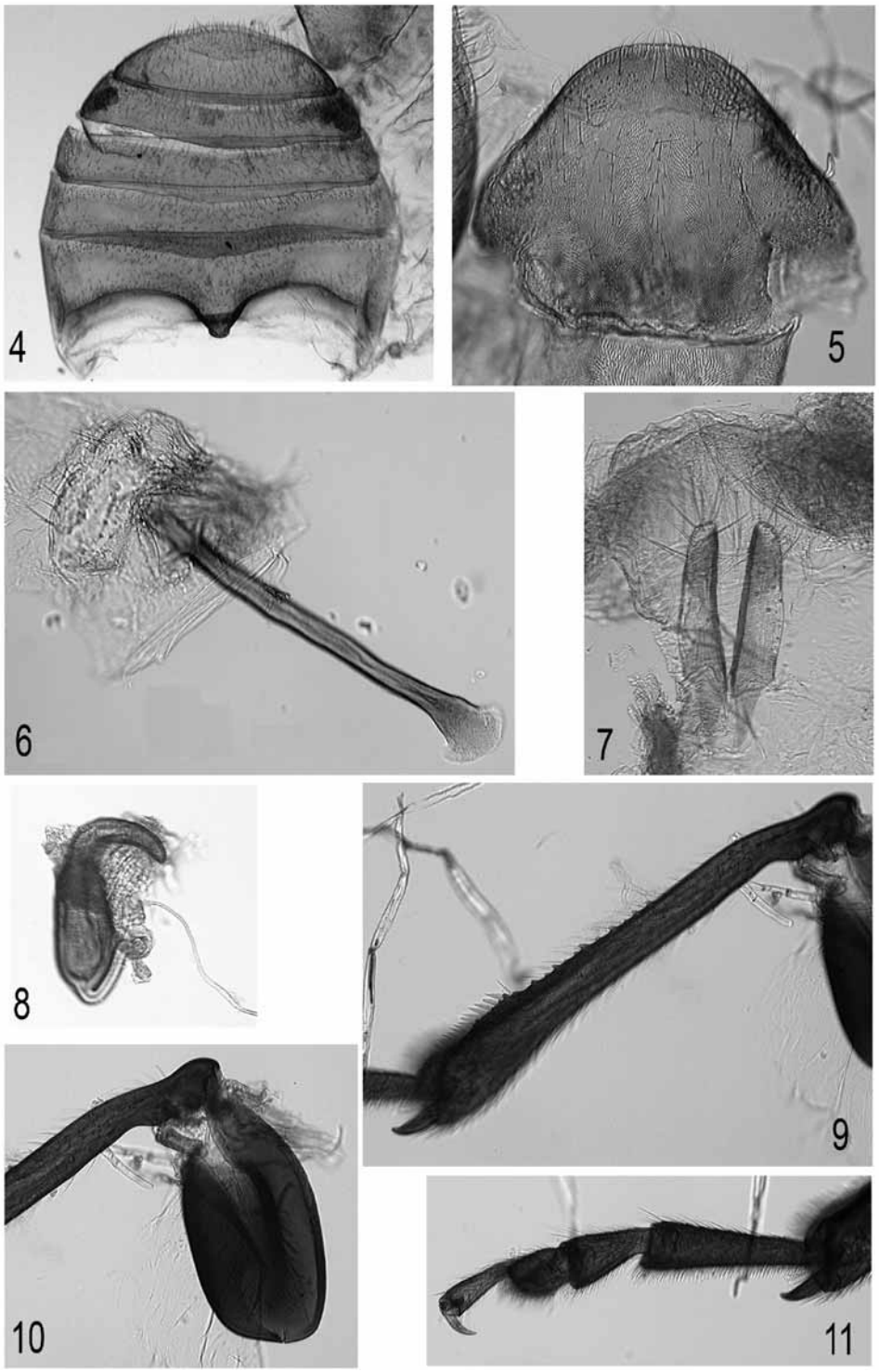


FIGURES 2&3. *Kashmirobia hugeli.* 2, head. 3, male genitalia in ventral and lateral view.

Mesoscutellum slightly wider than long, flat, and triangular, narrowly rounded at apex (Fig. 1). Intercoxal mesosternal process with sides converging posteriorly, slightly channeled, apex concave. Mesepisternum nearly as broad as mesepimeron. Metasternum longer than mesosternum, convex ventrally.

Elytron (Fig. 1) with maximum width near basal 3/4 of its length. Humeral callus well developed, delineated by wide and shallow impression containing rows of large punctures, extending from lateral edge towards mesoscutellum. Small, longitudinal hump located posterior to impression. Punctures not arranged in striae. Elytral apex broadly rounded, traced by indistinct border. Epipleura broad, widens slightly posteriorly towards humeral callus, then it narrows gradually until side turns medially. Lateral margin relatively widely explanated, with row of large and deep punctures not reaching elytral apex. Hind wings present.

Pro- and mesofemora nearly cylindrical. Pro- and mesotibia round in cross section, with small spur on apex. Metatibia (Fig. 9) slightly curved in dorsal view, straight in lateral view, widens gradually towards apex, with dorsal side flat along apical 1/4 and long spur on apex. Dorsal side with row of small setiferous denticles. Claw appendiculate. First metatarsomere in female longer than second and third metatarsomeres combined (Fig. 11).



FIGURES 4–11. *Kashmirobia hugeli*. 4, abdominal ventrites. 5, last abdominal tergite. 6, tignum. 7, vaginal palpi. 8, spermatheca. 9, metatibia. 10, metafemoral spring. 11, metatarsus.

FIGURE 12. *Euphorbia neriifolia*.

Spermatheca (Fig. 8) with receptacle separated from pump. External and internal sides of receptacle nearly equally convex. Horizontal part of pump curved, longer than vertical part. Spermathecal duct relatively short, not forming coils or loops away from receptacle. Tignum (Fig. 6) abruptly widening anteriorly, slightly wider posteriorly, with two sclerotized branches at beginning of membrane. Vaginal palpi (Fig. 7) robust, more widely separated posteriorly than anteriorly.

Median lobe of aedeagus (Fig. 3) simple, convex in lateral view, without any sculpture ventrally, without membranous window. Apex with denticle very wide in ventral view, curved dorsally, in lateral view.

Type species. *Aphthona hugeli* Jacoby 1900.

Etymology. The genus is named after Kashmir, a region in northern India where the specimens of *Aphthona hugeli* were originally collected in combination with the ending of the generic name *Manobia* Jacoby. The name is feminine.

Diagnosis and comparison. *Aphthona hugeli* was removed from *Aphthona* because it does not share any synapomorphies of *Aphthona* or even Aphthonini (Konstantinov 1998), except for the dorsal surface of the metatibia which is flat in part as in Aphthonini. The other important differences are: facial part of the head elongate (short in *Aphthona*); frontal ridge straight in lateral view, similar to that of *Longitarsus* (it is convex in *Aphthona*); and metatibia slightly curved in dorsal view and bearing small setose denticles

(Fig. 9) (it is straight and lacking such denticles in *Aphthona*).

Based on the elongated facial part of the head, *Kashmirobia* is similar to *Manobia*. It can be easily differentiated from *Manobia* based on the much wider frontal ridge (it is narrow in *Manobia*); presence of the supraorbital sulci (they are often missing in *Manobia*); the pronotum with evenly convex basal margin, with shallow impressions posteriorly and anteriorly (in *Manobia* the basal margin is sinuous, shallow impressions are missing and a deep sinuous groove lies parallel to the basal margin); and the elytron is without transverse and sharp groove in anterior third (in *Manobia* the groove is present). In addition *Kashmirobia* has the metatibia gradually widening towards the apex, dorsally flat at apical 1/4. In *Manobia* the metatibia widens abruptly near the apex being flat on a very short distance close to the apex.

Kashmirobia and the recently described *Manobiella* Medvedev share a long facial part of the head and the base of pronotum lacking the transverse groove. Both genera can be easily separated by the same characters used to separate *Kashmirobia* from *Manobia*.

Kashmirobia has a similar color pattern (dark brown elytra and dark yellow head and pronotum) and shape of metatibia (slightly curved in dorsal view) as in *Aphthonella* Jacoby and *Aphthonomorpha* Chen. It can be separated from both genera based on the following characters: facial part of the head long (short in the other two genera); elytra with punctures not arranged in striae (in both the other genera, the elytral punctures are arranged in deep striae); pronotum with shallow impressions basally and anteriorly (these impressions are lacking in both other genera).

Kashmirobia hugeli (Jacoby 1900):121 [type locality: Kashmir, India. Lectotype (MCZC) designated by Konstantinov and Lingafelter (2002)]. Maulik 1926:367, 371 (key, redescription, taxonomic notes, distribution, deposition of type specimens). Heikertinger & Csiki 1939:97 (world catalog). Scherer 1969:70, 76 (key, distribution, synonymical bibliography, host plant). Kalaichelvan and Verma 2005: 1840 (list).

Host plant. *Euphorbia neriifolia* L. (Euphorbiaceae) (Fig. 12). *E. neriifolia* is a common thorny hedge plant in central India having thick, succulent stem and leaves with acrid latex adapted for arid conditions. Adults of *A. hugeli* scrape the leaves with a marked preference for senescent ones as they contain less latex. It is certain that *E. neriifolia*, which resembles cacti, was misidentified as *Pereskia aculeata* Mill. (Cactaceae) (Maulik 1926). *P. aculeata* (Barbados goosecherry), a cactus bearing edible fruits, is neither native to Asia nor does it occur naturally in central India.

Type material examined. Lectotype ♀. Labels: 1) Kashmir; 2) Jacoby 2nd Coll.; 3) *hugeli* Jac.; 4) Type 18934; 5) Lectotype *Aphthona hugeli* Jacoby des. A. Konstantinov, 1996 (MCZC). Paralectotypes 2♀, the same labels as lectotype. Paralectotype ♂. Labels: 1) India; 2) 1st Jacoby Coll. 3) Lectotype *Aphthona hugeli* Jacoby des. A. Konstantinov, 1998 (MCZC).

Material examined. ♂. Labels: 1) India Orient; 2) 6756; 3) *Aphthona hugeli* Jac.; 4) *Aphthona hugeli* Jac. (USNM); 24 ♂, 16 ♀. INDIA Maharashtra, Satara Kas Plateau near

Sudarsan Lake, N17 º44' 12" E 73º 48' 76", 1111 m, 8. x. 2006, Prathapan K. D. Coll., *ex Euphorbia neriifolia* (35 PKDC, 5 USNM).

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