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Revision of the genus *Epexochus* Reitter, with description of three new species (Coleoptera: Curculionidae: Lixinae: Cleonini)

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Abstract

The genus *Epexochus* Reitter is revised, its morphological characters are defined and the differences from the most closely related genera, *Leucochromus* Motschulsky and *Eurycleonus* Bedel, are outlined. All the populations of *Epexochus* from Kazakhstan and north-western China (Xinjiang) are referred to a single species, *E. lehmanni* (Ménétries). The status of *Exochus latus* Chevrolat is discussed and its name is formally synonymised with *lehmanni*. According to Art. 45.6.4.1 of the ICZN (1999), the name *lehmanni* var. *consobrinus* Faust, originally proposed for a colour variant and misidentified by Ter-Minasyan, is deemed to be subspecific and thus a synonym of *lehmanni*. Three new species are described in the genus: *E. korotyaevi* sp. n. (type locality: southern Tajikistan, Shaar-tuz region), characterised by the pronotum curved towards the elytra and by slender, lanceolate scales; *E. voriseki* sp. n. (type locality: central Uzbekistan, Gazli), characterised by small size, only slightly convex elytra and long hair-like setae, and *E. mongolicus* sp. n. (type locality: western Mongolia, Kobdoskij Aimak), characterised by large size, convex elytra with flat intervals and an elongate lamella of the aedeagus.

Key words: Taxonomy, weevils, morphological analysis, new species, central Asia

Introduction

The study of the phylogeny and biogeography of the weevil tribe Cleonini and examination of a large number of specimens housed in several museums, carried out by the senior author, allowed us to determine that the genus *Epexochus* Reitter, 1913, previously considered monotypic, in fact comprises four distinct species. This discovery, together with the considerable confusion that exists in the literature about the delimitation of the type species, *E. lehmanni*, and the status of its synonyms, prompted us to comprehensively revise the genus.

Traditionally *Epexochus* included only its type species by monotypy, *Cleonus lehmanni* Ménétries, 1849 from central Asia. Motschulsky (1860) divided *Cleonis* Dejan, 1821 (as *Cleonus* Schoenherr, 1826) into several new genera and provided a schematic key to them, but listing only their type species. *Cleonus lehmanni* was not included in this key, but according to its morphological traits it would fall into the genus *Leucochromus* Motschulsky, 1860. This combination was indeed later proposed by Chevrolat (1873), who also erected a further new genus, *Exochus*, for *E. gigas* (Marseul 1868) from northern Africa and *E. latus* Chevrolat, 1873, *E. simplicirostris* Chevrolat, 1873 and *E. persicus* Chevrolat, 1873 from central Asia. Faust (1904) recognised that *Exochus* Chevrolat, 1873 is a junior homonym of *Exochus* Gravenhorst, 1829 (Hymenoptera, Ichneumonidae) and replaced the name with *Epilectus* Faust, 1904, transferring also *L. lehmanni* to *Epilectus*. However, *Epilectus* Faust, 1904 is also a junior homonym of *Epilectus* Blackburn, 1888 (Coleoptera, Carabidae), and both *Exochus* Chevrolat and *Epilectus* Faust are now considered as synonyms of *Eurycleonus* Bedel, 1907 (Alonso-Zarazaga & Lyal 1999). Reitter (1913) eventually proposed a separate genus, *Epexochus* Reitter, 1913, for *E. lehmanni*, but its concept has never been properly defined.

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Study of the large cleonine collection in the ZIN finally allowed a more precise definition of the genus and showed that along its broad range, which spans a few thousand kilometres between its extremes, it comprises well differentiated forms, referable to four different, allopatric species, three of which are here described as new.

Material and methods

The specimens examined in the course of this study are housed in the following museums and private collections:

HNHM	Hungarian Natural History Museum, Budapest, Hungary
MNHN	Muséum national d'Histoire naturelle, Paris, France
NMW	Naturhistorisches Museum Wien, Austria
SMTD	Staatliche Naturhistorische Sammlungen, Dresden, Germany
ZIN	Russian Academy of Sciences, Zoological Institute, St. Petersburg, Russia
ZMHB	Museum für Naturkunde der Humboldt-Universität, Berlin, Germany
CSNV	coll. Talamelli, Centro Studi Naturalistici Valconca, Italy
MER	coll. Meregalli, Torino, Italy
FRE	coll. Fremuth, Hradec Kralove, Czech Republic
POD	coll. Podlussany, Budapest, Hungary
VOR	coll. Voříšek, Kladno, Czech Republic

Specimen labels are cited verbatim, with names in cyrillic characters transliterated according to the BGN/PCGN romanisation system, abbreviations used are "hw" (handwritten) and "pr" (printed) and author's notes are given in square brackets. The terminology of characters mainly follows Van den Berg (1972) and Aslam (1963). With dissected specimens, female genitalia and mouthparts were stored in glycerol in microvials and male genitalia mounted dry or stored in glycerol (the internal sac). All genitalia preparations, including those in microvials, were pinned below the specimen from which they were dissected. Photographs were taken with a Nikon Coolpix 4500 camera, some using a Wild M5A stereomicroscope and the montage software Combine ZM (http://www.hadleyweb.pwp.blueyonder.co.uk/index.htm), and images were digitally enhanced with Photoshop 7.0 (Adobe Systems Incorporated). Measurements were taken under the stereomicroscope with an ocular micrometer containing a graduated scale; body length refers to the length from the head (excluding the rostrum) to the apex of the elytra, measured in lateral view.

Taxonomy

Epexochus Reitter

Epexochus Reitter, 1913: 40; Alonso-Zarazaga & Lyal, 1999: 191.
Cleonus (*Epexochus*): Csiki, 1934: 39.
Type species: *Cleonus lehmanni* Ménétries, 1849, by monotypy.

Redescription. Habitus. Size large, body elliptical. Integument smooth, lacking granules or tubercles, hind wings vestigial.

Vestiture. Integument densely covered with whitish and brown, aciculate to lanceolate, acuminate, glossy scales forming various patterns on pronotum and elytra; scales simple or with short basal lateral projections, with large median and minute lateral teeth; underside of rostrum with usually simple, whitish or yellowish,

aciculate scales; underside of head with minutely digitate, white, oval scales; underside of thorax with white elliptical scales, usually finely digitate, bifid or trifid, in part simple, aciculate; ventrites with long, aciculate scales, usually simple or with short basal projections, whitish on the whole surface and brown in a basal stripe, sometimes reduced to two broad patches; hair-like setae present, whitish, hyaline or yellowish, relatively dense, inserted in larger punctures of integument, seldom very short and barely distinct, usually relatively long, suberect on sides of pronotum and sides and declivity of elytra; on dorsum of elytra setae disposed in several series on whole surface; on legs setae often very dense, nearly half as long as tibial width; on ventrites setae usually dense, obliquely inserted, long.

Rostrum robust, straight, dorso-lateral margins not keeled, rounded or very slightly raised; median line distinct, not sharply elevated nor acutely keeled, with a triangular plate broadened anteriorly at its side; dorsum laterally of median line and triangular plate moderately impressed, forming two longitudinal, usually curved, shallow grooves; epistoma subtriangular, moderately prominent, apex straight; rostrum in lateral view straight, thick, about three times as long as high; dorsum moderately curved downwards behind antennal insertion, underside straight basally and curved downwards before mouthparts, keels on postmentum linearly converging basally; scrobes narrow, subsinuate, glossy, posterior part, seen from below, broadened, rounded; upper margin directed towards, and interrupted before, lower margin of eye; lower margin reaching underside near base of rostrum.

Mouthparts. Maxilla (Figs. 19–20) with curved cardo, stipes as long as wide, more strongly sclerotised externally, with one long and several short setae; palpifer subquadrate, densely setose on outer side and on apex; mala semicircular, with six lateral teeth, the four lower ones extremely strong, the two upper ones thinner; three secondary teeth on lower face; basal setae long, curved upwards; maxillary palps three-segmented, segment 1 broader than long, widened laterally, setose; segment 2 conical, moderately transverse, with one apical seta; segment 3 shortly conical, lacking setae. Labium subquadrate, with three primary and a few smaller lateral setae; ligula distinct, rounded at apex; in lateral view labium thickened, with a distinct median projection; labial palps undifferentiated.

Antenna slender. Scape subsinuate, thin, moderately thickened at apex. Funicle 7-segmented, segment 1 short, globose, segment 2 slightly longer than 1; segments 3–6 globose, segment 7 larger, partly fused to club. Club long elliptical, segment 3 as long as 1 and 2 together.

Head broad, transverse, vertex evenly convex, eyes large, flat, ovate-elliptical, nearly symmetrical, lower margin narrowly rounded.

Pronotum as long as wide or weakly transverse, faintly convex, sometimes sub-campanulate; base truncate or weakly curved or lobed towards scutellum, sides sublinear or weakly broadened towards middle of length, maximum width at base or in basal half; apex straight, indistinctly prominent above head; postocular lobes rounded, moderately or barely developed, with a fringe of dense, orange postocular setae; surface uniformly and minutely punctulate, with few slightly larger, isolated punctures, granules absent on dorsum and sides, median line not or barely differentiated.

Scutellum visible but small, triangular.

Elytra ovate-elliptical, humeri not expanded laterally, sides moderately broadened, evenly converging at apex; in lateral view dorsum barely convex, declivity oblique, even, not sharp. Striae 10 in number, narrow, shallow, with barely delimited or nearly indistinct punctures; at apex stria 1 joined to stria 10, stria 2 to 9 and stria 3 to 8; on declivity stria 4 joined to 5 and stria 6 to 7. Intervals broader than striae, odd intervals as wide as or barely wider than even ones, usually very slightly convex, higher near base, or completely flat; base of intervals 7–9 fused, striae 7 and 8 not reaching base. Surface minutely punctulate, lacking any granules.

Legs slender. Trochanters triangular, barely longer than wide. Femora thin, hardly thickened in middle. Tibiae a little longer than femora; fore tibia with outer margin rectilinear or slightly curved outwards near apex; inner margin weakly sinuate; apex sinuate, barely expanded, with a fringe of apical setae; uncus strong; internal subapical tooth absent in both sexes; middle tibia slightly shorter and narrower; hind tibia longer, slightly to moderately curved behind, widened towards apex. Tarsi well developed, segments broad, triangular, sides with more or less well developed tuft of downward-directed setae; segment 3 moderately

bilobed; underside densely setose but lacking a complete pad, which is limited to a small setose area on centre of segment 3, more distinct on fore tarsi; onychium long, often slightly broadened in middle; claws narrowed from base to apex, long, separate nearly from base, divaricated from basal third (Fig. 26).

Venter. Prosternum at apex with a broad emargination, weakly protruded towards fore coxae; space in front of coxae half as long as diameter of coxae, strongly oblique, smooth; intercoxal process relatively well developed, protruding between coxae; these round, separated by prosternal process, subcompressed and emarginate on anterior side. Mesothorax with middle coxa round, mesepisternum broad, triangular, extending towards median part of mesothorax; mesepimeron slightly broadened dorsally, intercoxal process subquadrate, large. Metathorax narrow, as wide as diameter of mesocoxa; metepisternum broad, subrectangular; metacoxae transverse, widely separated. Ventrite I with broad, subtruncate intercoxal process, sinuate at apex, concave in ♂ and nearly flat in ♀; ventrite II slightly narrower, 1.5x as long as III, flat or barely concave in central part on ♂ and convex on ♀; ventrites III and IV of equal size, V slightly longer than IV, evenly curved at apex in ♀ and truncate in ♂.

Genitalia. Aedeagus slender, tubular, curved; lamella short, subacute or rounded. Sternite VIII of ♀ V-shaped, arms connate at base, narrow, nearly linearly widened; lamina delimited laterally by the arms, sclerotised only near apex. Spermatheca small, with narrow and curved cornu, thickened nodulus and short lateral ramus. Hemisternites short, moderately broadened basally, styli apical, short; symbiont pouches relatively short, as long as hemisternites, annuli not sclerotised.

Remarks. *Epexochus* is closely related to *Eurycleonus* Bedel, 1907 from northern Africa and Sinai and to the sympatric, monotypic genus *Leucochromus* Motschulsky, 1860, these three genera forming a monophyletic group (Meregalli & Silvestro in press). The last genus differs from *Epexochus* as follows: rostrum with a broad median ridge; pronotal disc with a median furrow and two broad, glossy, bare lateral ridges, a wide squamose, longitudinal stripe along ridges, another glossy ridge on dorso-lateral margin and some round, smooth, glossy patches on sides; even elytral intervals with raised glossy margins forming longitudinal black keels; basal tarsal segment as long as wide and barely longer than segment 2; claws narrow, widely divergent from base; sternite VIII of ♀ with plate sclerotised along entire length of arms; scales white, aciculate or elliptical, always simple. *Eurycleonus* is more similar to *Epexochus* and appears to be its sister taxon; apart from its distinctly larger size it differs in its scales being bifid on the whole body, with strongly elongate teeth, its tarsal segment 1 short, as long as wide, and the claws connate up to middle of their length, and in the sternite VIII of the ♀ having the plate sclerotised on both sides along the arms.

Key to the species of *Epexochus*

1. Base of pronotum distinctly curved towards scutellum (Fig. 42); elytral scales very slender, lanceolate (Fig. 37); southern Tajikistan ..... *E. korotyaevi* **sp. n.**
– Base of pronotum nearly straight or weakly, very evenly arched (Fig. 18); elytral scales oval or oval-elliptical, aciculate (Fig. 36) 2
2. All elytral intervals flat, also at base, elytra convex, sides broadened; apical lamella of aedeagus expanded, broadly rounded (Fig. 80); western Mongolia: Kobdo Aimak ..... *E. mongolicus* **sp. n.**
– Elytral intervals 3, 5, 7 and 9 moderately but distinctly raised, at least at base; apical lamella of aedeagus short, acute or nearly so 3
3. Size >15 mm; elytra convex, odd intervals only raised at base; elytral setae stiff, of variable length, sometimes relatively long but never longer than an interval width; apical lamella of aedeagus subacute (Figs. 32–35); Kazakhstan, China (Xinjiang) ..... *E. lehmanni* (Ménétries)
– Size <15 mm; elytra flat, odd intervals slightly convex up to declivity; elytral setae long, hair-like, flexible; apical lamella of aedeagus shortly acute (Fig. 63); Uzbekistan ..... *E. voriseki* **sp. n.**

Epexochus lehmanni (Ménétries)

Cleonus Lehmanni Ménétries, 1849: 251.
Leucochromus Lehmanni (Ménétries): Chevrolat 1873: 2 [as *Lhemanni*], 99; Faust 1904: 191.

Epilectus Lehmanni (Ménétries): Faust 1904: 208.
Epexochus lehmanni (Ménétries): Reitter 1913: 40; Ter-Minasyan 1968: 516; 1988: 46.
Cleonus (Epexochus) Lehmanni (Ménétries): Csiki 1934: 39.
Exochus latus Chevrolat, 1873: 3; 99 **(syn. n.)**.
Epilectus Lehmanni ?*latus* (Chevrolat): Faust 1904: 208.
Cleonus (Epexochus) Lehmanni ?*latus* (Chevrolat): Csiki 1934: 39.
Leucochromus Lehmanni var. *consobrinus* Faust, 1904: 191, 192.
Epilectus Lehmanni var. *consobrinus* (Faust): Faust 1904: 208.
Cleonus (Epexochus) Lehmanni ab. *consobrinus* (Faust): Csiki 1934: 39.
Leucochromus consobrinus (Faust): Ter-Minasyan 1972: 543; 1988: 43.
Epexochus consobrinus (Faust): Arzanov 2005: 150.

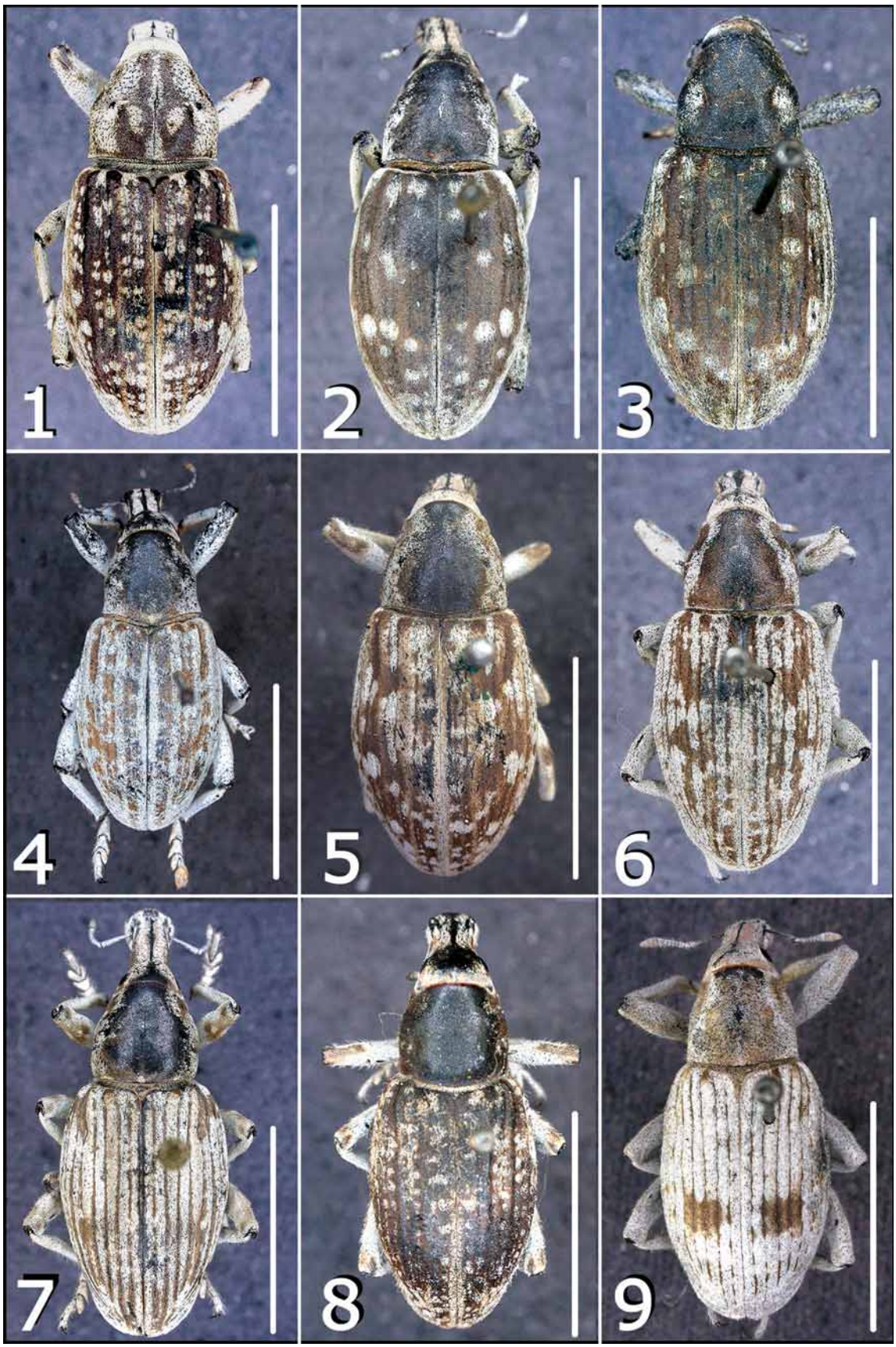
Redescription. Dimensions: Body length excluding rostrum: 18.10 mm. Rostrum: length 3.89 mm, width 1.99 mm (ratio 1.95). Pronotum: length 5.10 mm, width 5.90 mm (ratio 0.86). Elytra: length 13.06 mm, width 8.19 mm (ratio 1.59). Ratio of elytral to pronotal length 2.56 (holotype).

Habitus. Body oval, broad, moderately convex (Figs. 1, 10). Integument dark ferruginous to blackish, densely covered on dorsum with small, simple, acuminate scales and on underside with bifid to multifid scales.

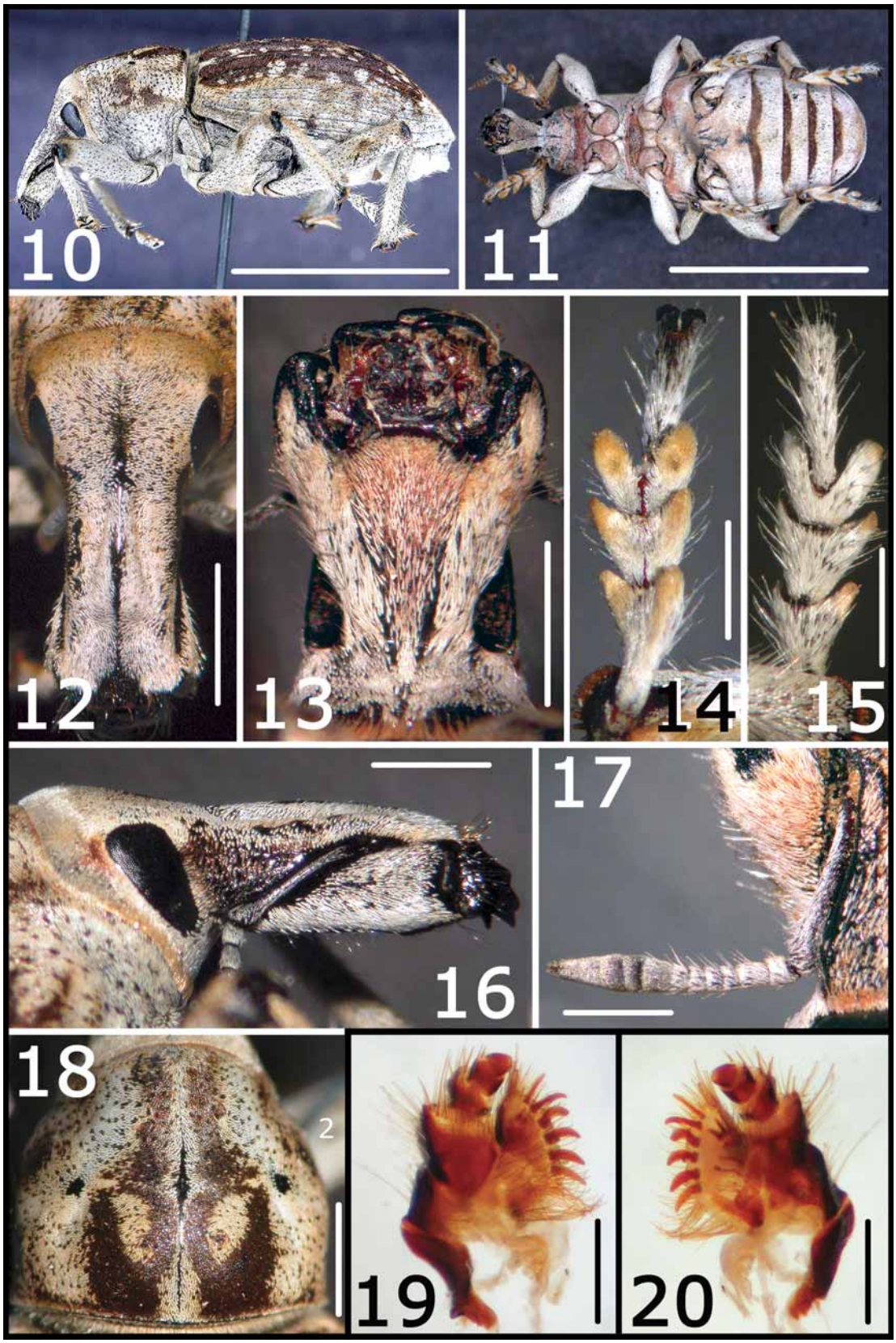
Rostrum straight, more than twice as long as wide, dorso-lateral margins rounded, not keeled, nearly straight from base to apex; epistoma prominent anteriorly, apex straight; dorsum with narrow glossy median keel extending to apex before epistoma, flanked by a broad triangular convex plate, whose sides are broadened anteriad, extending from base, where sides of convexity closely approach median keel, to antennal insertion, where sides nearly reach dorso-lateral margins; dorsal convexity delimiting narrow, relatively shallow dorsal furrows; upper margin of scrobes glossy, evenly curved, sinuate posteriorly, directed towards, and interrupted before, lower margin of eye; lower margin of scrobes parallel to upper margin, reaching underside near base, interrupted on underside at lateral margins of rostrum; underside with keels linearly converging, strongly so towards base and there confluent; surface weakly concave between keels; in lateral view rostrum straight, of equal thickness from base to apex, dorso-lateral margins slightly sinuate basally, median convexity distinctly higher than sides, median keel very weakly curved, sinuate basally, angle between forehead and rostrum strongly obtuse. Surface of rostrum glossy, minutely punctulate and with sparse, moderately larger, isolated punctures, more distinct basally and on sides before eyes. Vestiture consisting of dense, white, glossy, acuminate, simple scales, directed towards middle near base and progressively forward towards apex, progressively more elongate towards apical part, often with two minute and acute lateral basal projections, which towards sides are longer and transform part of the scales into a digitate form with three teeth; sides in front of eyes with sparse, brown trifid scales not hiding integument; pregenae and underside with elliptical, acuminate, glossy white scales; setae sparse, relatively thick, on dorsum short, appressed to integument and limited to basal part, on pregenae and underside longer and thinner, semi-erect, clearly distinct; epistoma punctulate, with microscopic golden setae (Figs. 12–13, 16).

Antenna slender. Scape narrow, very weakly thickened at apex, slightly curved anteriad. Funicle with segment 1 subquadrate, 2 cylindrical, as wide as and 1.5 times as long as 1; 3–6 similar to each other, transverse; 7 subquadrate, slightly larger and twice as long as 6, fused to club. Club elliptical, as long as funicle segments 4–7 together, club segment 3 as long as previous two segments together, annulus clearly distinct; scape with sparse, ovate or digitate scales and narrow setae, funicle with dense white scales, club with very dense, golden, hair-like scales, lacking setae (Fig. 17).

Head broad, nearly as long as wide, not sharply differentiated from base of rostrum, interocular distance wider than rostrum at base, forehead nearly flat, with small interocular pit and narrow median glossy line extending to vertex; this moderately convex in middle. Vestiture consisting of dense, white scales and short, barely distinct, orange setae reclined on integument, inserted in small, spaced punctures. Eyes flat, large, moderately narrowed below, lower margin broadly rounded.



FIGURES 1–9. *Epexochus lehmanni*, habitus. 1, holotype; 2, specimen from Elton lake; 3, specimen from Myn-sai; 4, specimen from Balkhash lake; 5, *Exochus latus*, holotype; 6, specimen from Aulie-ata; 7, specimen from Burundisu; 8–9, specimen from Borokhoro. Scale bars: 10 mm.



FIGURES 10–20. *Epexochus lehmanni*, structural details (10, 12–13, 16–18: holotype; 11, 14–15, 19–20: specimen from Borokhoro). 10, habitus, lateral view; 11, habitus, ventral view; 12–13, rostrum, dorsal and ventral views; 14–15, tarsus, ventral and dorsal views; 16, rostrum, lateral view; 17, antenna; 18, pronotum; 19–20, maxilla, dorsal and ventral views. Scale bars: 10–11: 10 mm; 12–15, 18: 2 mm; 16–17: 1 mm; 19–20: 500 μm.

Pronotum broad, nearly flat, base subrectilinear, moderately and evenly arched, posteriorly not medially protruding towards elytra, sides nearly parallel or feebly diverging towards apical quarter, then moderately, evenly curved to apex; anterior margin very weakly sinuate; surface smooth, minutely punctulate and with sparse, slightly larger, round punctures, often with a small, glossy, round bare patch near lateral margin; median line glossy, very narrow, barely distinct at the extremes, usually slightly more evident and broadened on disc; pronotum in lateral view faintly convex, maximum height near base. Vestiture consisting of oval, acutely pointed scales inserted in minute punctures, usually white-yellowish on dorso-lateral part and on sides, dark brown on disc forming an irregular pattern, narrowed anteriorly and widened posteriorly, with some whitish spots inside, and also brown on part of sides, mainly forming an anterior patch; scales on sides progressively more slender, setae orange or light brown, short and completely appressed against integument, inserted in larger sparse punctures (Fig. 18).

Scutellum very small, triangular, setose.

Elytra oval–elliptical, in lateral view moderately convex, maximum height behind middle of length, declivity oblique; base weakly arched, humeri not prominent, sides weakly curvilinear, with maximum width behind middle of length, evenly rounded at apex. Intervals wide, even ones narrower than odd ones, 3 and 5 clearly higher than others, particularly in basal half, 6 and 8 not reaching base, 7 and 9 fused basally into a broad, weakly convex hump, separated by a narrow furrow from base of interval 5. Striae very narrow and shallow, with barely distinct punctures. Vestiture consisting of very dense, oval, acutely pointed, whitish alternating with brown scales in very variable patterns; the latter frequent on dorsum in a more or less continuous layer, where white scales form irregularly scattered patches; intervals 7–11 usually with whitish scales and seldom with brown patches; interval 11 with digitate scales; setae golden coloured, semi-erect, shorter than an interval width, more distinct on declivity and sides (Fig. 36).

Legs slender. Femora slightly thickened medially. Tibiae narrow, fore tibia weakly sinuate, middle and hind tibiae straight, apex not expanded; vestiture consisting of dense, whitish scales, often replaced with brown scales near apex of femora, and dense long, semi-erect, white setae inserted in distinct, small punctures. Tarsi with segments 1 and 2 of fore and middle tarsi triangular, 2 broader than 1, 3 lobed, lobes very shortly expanded; segment 1 of hind tarsus longer, nearly three times as long as wide, 2 slightly longer than wide, 3 very short; all segments with white scales and setae expanded side- and downwards (Fig. 15); onychium elongated, slightly thickened in apical half; underside lacking adhesive pad, replaced by downward-directed, thick, orange setae (Fig. 14); claws slender, divergent, connate at base (Fig. 26).

Venter. Prosternum with low hump before fore coxae. Ventrite I relatively narrow, width between hind coxae and margin narrower than space between coxae; II slightly narrower than I; III and IV moderately narrower than II; V short, clearly impressed before apex; vestiture consisting of very dense coating of elongate, slender, bifid or multifid scales, white with a narrow brown basal patch, slightly expanded towards sides, on ventrites II–IV; ventrite V with a broader brown triangular patch, narrowed apically and nearly reaching apex; setae whitish, long, very narrow and relatively dense, inserted in barely visible, small punctures (Fig. 11).

Genitalia. Aedeagus slender, tubular, curved, lamella shortly sub-triangular, apex subacute or narrowly rounded (Figs. 27–35). Sternite VIII of ♀ with narrow arms, connate at base, lamina sclerotised only at apex of arms (Fig. 21). Spermatheca with ramus usually sub-basal (Figs. 22, 25). Hemisternites as typical of genus (Fig. 23).

Material examined. *Type series. Cleonus lehmanni* Ménétries, holotype ♀: KAZAKHSTAN, AKTOBE PROV.: "Emba-Steppe [approximately 48°N 57°E], … [illegible], 1840 / *Cleonus lehmanni* m. / Ménétries det. [pr.] / *Lehmanni* Ménétr. / *Cleonus lehmanni*, Ménétries 1849, Holotypus, 2008 Meregalli vid. (red). *Leucochromus lehmanni* var. *consobrinus* Faust, 3 syntypes: KAZAKHSTAN, ZHAMBYL PROV.: "Syr Daria, Aulie Ata" [= Taraz, 42°53'N 71°22'E] (SMTD). *Exochus latus* Chevrolat, holotype ♀ (see Perrin & Meregalli, 2008): "Kirghis or." (MNHN).

Non-type specimens. RUSSIA, VOLGOGRAD PROV.: "Elton ok., ozera na doroge [49°07'N 46°34'E], 4.VI.[19]52, Buriascheva", 1 ♂ (ZIN). KAZAKHSTAN: "200 km ot [from] Atbasara [Atbasar: 51°17'N

68°19'E], Akmol. obl., A. Emeljanov, 3.VI.[19]57", 1 ♂ (ZIN). "Turg. obl., Myn-sai [approximately 49°N 65°E], 3.V.[19]14", 1 ♂ (ZIN); "Betpak-Dala, Sary-Kamys [46°02'N 70°12'E], 7.V.[19]55, L. Serkova", 1 ♂ (ZIN); "40 km O st. Kzyl-Dzhar [48°18'N 69°38'E], Karagand. obl., L. Arnoldi, 23.V.[1]962", 1 ♂ (ZIN); "10 km S–V [N-E] g. Balkhasha, Z. Matis, 23.V.1966", 1 ♂ (ZIN); "Syr Daria, Aulie Ata" [= Taraz, 42°53'N 71°22'E], 102 ex (100 exx SMTD, 2 ex MER); id, under *C. lehmanni* var. *consobrinus* Faust, 55 exx (SMTD); "Turkest.: Aulie-ata, E. Wilberg", 2 ♀ (MER); "Aulie Ata", 2 exx (MER); "Semirechye [approximately 43–46°N 74–79°E], step k Balkhashy, Makhonin, 1909" 1 ♂ (ZIN); "Okr. oz. Balkhasha, V.1907, Mamisson", 1 ♂ (ZIN); "Koibun, Semirjetschensk, coll. Winkler, 3 ♂ 1 ♀. (MER); "Balchasch, Matthiessen", 1 ♂ (POD); "Yu-V [S-E] Kazakhstan, Taldy - Kurgan. obl., pustynya Ak-Tau, V. N. Plasolov, 10.V.1994", 1 ♀ (ZIN); "Okr. Kopala [45°08'N 79°01'E], 18.IV.1910, Lukjanovitsch", 1 ♂ (ZIN); "Kazakhst. m.-or., Saryesik-Atyrau des., Enbek [45°15'N 75°29'E], 1.5.1990, Beneš + Vořišek leg.", 2 ♀ (1 ♀ MER, 1 ♀ VOR); "Kazakhstan SE, Bakanas vill. [44°48'N 76°16'E], 04/1993, leg. Saldaitiz" 1 ♀ (CSNV); "S.E. Kazakhstan, Ili riv., Bakanas vill, 2.5.1996", 1 ♂ (CSNV); "Kazakhstan, Ily desert, S fr. Bakanas, 2/4.V.1997, Klimenko A., 2 ♂ (1 ♂ MER, 1 ♂ CSNV); "Kazakhstan, Prov. Almaty, 5 km NE Burundisu, 550 m, 78°38'E 43°43'N, 17.V.1994, leg. Gy. Fábián & I. Retezár", 2 ♂ 2 ♀ (2 ♂ 1 ♀ POD, 1 ♀ MER); "Mzhd. Tshilikom i Tsharynom, 13.V.[18]89, Gr. Grzhimailo", 1 ♂ (ZIN); "Kazakhstan, 1965, r. Tsharyn, ur. Sartogai [43°31'N 79°14'E] , 3.VI.1964, Kostin Badenko", 1 ♂ 1 ♀ (ZIN); "Dzharkentsk. utz., r. Ili [43°50'N 80°00'E], 1/2.V.1909", 1 ♀ (ZIN); "Zailiskii Ala Tau, sklon Moyun-saz (?), 20.06.[19]23, Pashina" 1 ♂ (ZIN). CHINA, XINJIANG: "Dzhungaria, Borokhoro Geb. [43°55'N 82°06'], Coll. Hauser, 6.05", 59 ex (18 exx: MER; 2 ex: POD; 4 ex: ZMHB; 35 NMW); "Kuldsha [= Yining, 43°53'N 81°16'], A. Regel", 1 ♂ (ZIN); "Mzhd. Suidunom i Khorgossom, 28.V.[18]89, Gr. Grzhimailo", 1 ♀ (ZIN); "Dzhinkho [= Jinghe, 44°36'N 82°53'], 13.VI.[18]89, Gr. Grzhimailo", 3 exx (ZIN); "Dzhungar, Urumtschi"[43°55'N 87°34'], 1 ♀ (MER). UNDETERMINED COUNTRY: "Kirghiz, Eversm.", 1 ♂ 1 ♀. (SMTD);"R.m., Kirg. stepp." (red, pr.), 1 ♀ (ZIN); no data, "93" 1 ♂ (MER).

Distribution (Fig. 82). *Epexochus lehmanni* has a broad range, which stretches more than 3000 km between its extremes. The holotype is from the northernmost limit, but most of the known specimens were found in south-eastern Kazakhstan and in Chinese Kazakhstan, in present-day north-western Xinjiang, on the Dzhungar Alatau mountains.

Biology. Nothing is known about the host plants of the species, a single record existing of a specimen found "on *Artemisia*". This plant is associated with steppe habitats, growing at altitudes from sea level in northern and central Kazakhstan to at least 1500 m on the Alatau ridge.

Remarks. The description of the *E. lehmanni* was based on a single specimen, found "in springtime in the steppe near the Emba [river]" ("D'apres un seul individu pris au primtemps dans les steppes près de l'Emba", Ménétries 1849: 252). This type specimen, housed in the ZIN, is thus the holotype.

Two more names are applicable to this species. Chevrolat (1873) described *E. latus*, based on a specimen ex Gebler's collection, but since this type specimen was not located again, the name has always been considered as of doubtful status. Faust (1904) included it with a question mark under *Epilectus lehmanni*, and since then it was never cited again in taxonomic works; in the *Coleopterorum Catalogus* Csiki (1934) simply followed Faust in doubtfully referring it to *E. lehmanni*. A part of Gebler's collection was recently rediscovered in the MNHN (Perrin & Meregalli 2008); it includes the type of *latus* and its pertinence to *Epexochus* was confirmed. The type locality of *latus* was cited as "*Deserto Kirghisorum*", but this unfortunately is a very vague indication since the Kirghiz desert embraces a very large area of central Asia, including most of central and southern Kazakhstan. Two specimens housed in the SMTD, extremely similar to the type of *latus*, are labelled, in Fausts' handwriting, "Kirghiz, Eversmann" and "*lehmanni*, cum typo comp.". They look somewhat intermediate between the central and southern Kazakhstan populations of *E. lehmanni*, being quite similar to the forms from Aulie-ata except for having shorter elytral setae. The status to be afforded to *Epexochus latus* is discussed below.

The second species name associated with *E. lehmanni* was proposed by Faust (1904: 192) as *Leucochromus lehmanni* var. *consobrinus*, for specimens from Aulie-ata [= Djambul, now Taraz, in southern Kazakhstan] characterised by the elytral vestiture consisting of predominantly greyish-white scales and

occurring sympatrically with the typically brownish-coloured specimens. Later in the same work, Faust (1904: 208) referred *lehmanni* and its variety *consobrinus* to the new genus *Epilectus* Faust. According to Art. 45.6.4 of the ICZN (1999), *lehmanni* var. *consobrinus* Faust has infrasubspecific rank, since the content of Faust's work reveals that he used the name for a sympatric colour variety, i.e. the consequence of intrapopulational variability defined as an infrasubspecific entity in the glossary of the ICZN. Faust's name was not again considered until Ter-Minasyan (1972) raised it to species level (as "*Leucochromus consobrinus* Faust, **stat. nov.**"), applying the name to a specimen from Mongolia. This generic attribution is surprising, because a) apart from its ambiguous original description, *consobrinus* had always been referred to *Epexochus*, which is clearly distinct from *Leucochromus*, b) the Mongolian entity belongs to *Epexochus* and not to *Leucochromus*, and c) it is also a species different from Faust's *consobrinus* from Aulie-ata. However, despite this misapplication to another taxon, according to Art. 45.6.4.1 Ter-Minasyan's adoption of Faust's name for a species makes *consobrinus* an available name at subspecific rank, with its original authorship. Ter-Minasyan equipped the Mongolian specimen with a red label reading "*Leucochromus consobrinus* Faust, holotypus", but that is an erroneous designation since the type series is from Aulie-ata, as in Faust's collection. The species erroneously attributed by Ter-Minasyan to *Leucochromus consobrinus* Faust is described below as *Epexochus mongolicus* sp. n. Finally, Arzanov (2005), based on some differences between *consobrinus* and *L. imperialis* in the structure of the internal sac of the aedeagus, considered the former as a valid species in the genus *Epexochus* and formally established this combination.

The evaluation of the status to be given to *consobrinus* and *latus* (species, subspecies or synonym of *E. lehmanni*) requires an analysis of the intra- and interpopulation variation of *E. lehmanni*. Only few specimens could be examined from central and northern Kazakhstan, where the type locality of *lehmanni* lies. These are characterised by the dorsum being mainly covered with dark brown scales, with the white scales forming a few roundish spots on the disc and the top of the declivity. The declivity itself and the lateral parts of the elytra are generally whitish. The elytral setae vary from whitish, short and sparse (holotype, Fig. 1; Elton lake, Fig. 2) to dense, golden, erect (particularly on the declivity), more than half as long as an interval width (Myn-Sai, Fig. 3; Atbasa, Kzyl-Dzhar). The rostrum is usually short, narrower at the base and has a prominent median keel, with the anterior triangular plate usually clearly distinct, the dorso-lateral margins low and in lateral view more concave in their basal part. The base of the pronotum is usually medially slightly lobed, and the elytra are widest behind the middle and broader towards the apex. The aedeagus of the specimen from Elton lake has a short, acute lamella and is strongly curved in lateral view (Figs. 28–29, 32), but that of the specimens from Kzyl-Dzhar and Betpak-Dala has a better developed lamella and is less strongly curved (Fig. 33). A specimen from the steppes north of the Balkhash lake and a few others generically labelled "Balkhash lake" have quite a similar pattern of elytral scales; these specimens are smaller and have shorter setae, although not as short as in the specimens from Yenbek and the medium to lower course of the Ili river, described below. Other specimens also generically labelled Balkhash, but from different collectors, have predominantly greyish scales (Fig. 4), but the inaccuracy of their collection data precludes any further deliberations of the significance of this variation in colour pattern in the demes from the steppes around the Balkhash lake. The few specimens simply labelled "Kirgiz., Eversmann" and the holotype of *latus* (Fig. 5) have a more varied pattern, with the round pale spots less evident, and the whitish scales scattered in irregular patches and small stripes. As in the specimen from Myn-Sai, the elytra are broadly rounded towards the apex, the median keel of the rostrum has the triangular plate more raised and distinct, the base of the pronotum is completely linear, not lobed towards the scutellum, the elytra are parallel-sided from the base to at least half their length and the sides have denser, more erect setae. These specimens are somewhat intermediate between those from northern Kazakhstan and those found at the end of the 19th century at the upper course of the Syr Darya, in the surroundings of Aulie-ata (Fig. 6), the type locality of *consobrinus* Faust. A large number of specimens of this population could be examined. They have more globose elytra with rounded sides, very distinct hair-like, golden, semi-erect setae nearly as long as an interval width rather densely distributed over the entire body, and the colour pattern of the elytra consists of roughly equal areas of brown and white scales, with pale round patches absent but usually a sharp contrast between the dark and pale parts, with several

alternate longitudinal stripes and spots. The rostrum is usually shorter, narrower at its base and has a prominent median keel; the anterior triangular anterior triangular plate is usually raised and the dorso-lateral margins are low, in lateral view slightly concave in their basal part. Several *Epexochus* specimens were found in the Semirechye region in south-eastern Kazakhstan, south of the Balkhash lake (Koibun, Yenbeck, Bakanas, etc.). These are characterised by very short, barely visible setae, the rostrum longer and broader at the base, appearing slightly conical and with the dorso-lateral margins slightly convergent towards the antennal insertions and better developed and relatively sharply raised, the median keel sharper, the triangular plate less evident and in lateral view the rostrum often hardly curved. The elytra have predominantly pale scales, with brown scales mainly placed along the striae and denser before the declivity to reach the intervals and form a vague, darker transversal patch. Their sides are broadened, sometimes not very evenly curved. The length of the setae is not constant in the specimens from this area: of the two males collected together along the Ili river, south of Bakanas, one has dense and relatively long, erect setae on the elytra and the legs and the other almost indistinct setae on the elytra and very short and sparse on the legs; this specimen also has predominantly dark scales, with white scales limited to a few broadly rounded patches, and its pronotum is not completely straight at the base. There are no other differences in phenotypic traits, including the shape of the aedeagus. More populations are recorded from along the middle and upper course of the river Ili, in south-eastern Kazakhstan and north-western Xinjiang. The specimens from the steppe around the Tsharyn river, in south-eastern Kazakhstan (Fig. 7), are rather similar to those from the Semirechye region and have very short setae. Many *Epexochus* specimens were collected by Hauser in May 1906 on the Borokhoro ridge, more to the east and at a higher altitude, along the upper course of the Kash river, a tributary of the Ili river, in present day Xinjiang. Most of these specimens are characterised by the whitish scales covering most of the elytra, with pale brownish scales confined to two broad transverse patches before the declivity, not sharply delimited, and to some small spots along the striae. The pronotum is usually dark, with white scales limited to the sides and along the median line (Fig. 9). Two specimens have most of the elytral scales brownish (Fig. 8), whereas six are nearly completely white, including on the pronotum and before the declivity. In contrast to the other demes, the scales in this population are barely glossy. The elytral setae on the Borokhoro specimens are generally whitish, moderately erect and distinctly shorter than an interval width; their density and length vary, but they are always clearly distinct in profile, longer than the setae of the forms from the steppe north and east of Almaty. The rostrum is slightly variable in length and curvature, and the median triangular longitudinal keel is usually well differentiated, only flatter in few specimens. The base of the pronotum is generally truncate, without any curvature towards the scutellum. The shape of the elytra and the size of the body are relatively uniform in all these specimens, the size ranging from 16.81 to 20.00 mm (mean of the specimens examined 18.35 mm) and the elytra have subparallel sides, with the maximum width approximately in the middle and from there evenly converging towards the apex. The specimen labelled Urumtschi [= Ürümqi, Xinjiang] is also referable to this form, as is that from Kuldja [= Yining, Xinjiang], at the base of the Borokhoro ridge. In the specimens of south-eastern Kazakhstan and Xinjiang the aedeagus always is weakly curved and has a slightly rounded lamella (Figs. 27, 30–31, 34–35).

In conclusion, it seems that each population shows peculiar characters, usually associated with the form of the elytra, the colour pattern of the scales and the length of the setae. The specimens from the Kazakhstan steppe north and west of the Balkhash lake share the brown colour, usually with white scales in round spots, but vary in the length of the setae and in the shape of the rostrum; in southern Kazakhstan and north western Xinjiang the demes have the elytra mainly whitish with often relatively dense and erect setae and a sharply truncate pronotal base; in the Semirechye region most of the specimens have very short or nearly indistinct setae, the elytra with pale scales, the pronotal base often weakly curved and a longer rostrum. The shape of the aedeagus varies hardly at all, and the female genitalia are also not particularly differentiated among the various populations. It is hence impossible to recognise a clear and univocal differentiation of some demes, and the different morphological traits can only be regarded as variations at population level, not indicative of distinct taxa at species rank. *Latus* Chevrolat, 1873 is therefore treated as a junior synonym of *lehmanni* Ménétries, 1849, and *consobrinus* Faust, 1904, which is itself referable to *latus*, is thus likewise a junior synonym of *lehmanni*.

***Epexochus korotyaevi* Meregalli & Talamelli, sp. n.**

Diagnosis. An *Epexochus* species characterised by: base of pronotum medially distinctly lobed towards scutellum; scales narrow, lanceolate, ivory-greyish, with vague, slightly darker stripes on odd intervals; median triangular plate of rostrum slightly raised, barely visible; median part of the pronotum convex; elytra with slightly broadened sides; aedeagus with faintly sinuate apex.

Description. Dimensions. Body length excluding rostrum: 16.72 mm. Rostrum: length 3.45 mm, width 1.84 mm (ratio 1.87). Pronotum: length 4.58 mm, width 4.95 mm (ratio 0.93). Elytra: length 11.90 mm, width 7.36 mm (ratio 1.62). Ratio of elytral to pronotal length 2.60 (holotype).

Habitus. Body black, shortly elliptical, completely covered with usually simple scales but often imbricate, lanceolate, acuminate at apex (Figs. 40–41).

Rostrum straight, less than twice as long as wide, weakly conical, dorso-lateral sides rounded, median part with a triangular, slightly raised and barely distinct plate; median line narrow, not sharply keeled, extending from vertex to antennal insertions, lowered in its anterior part; apex flat; epistoma prominent, straight; dorsal furrows very shallow, barely distinct; upper margin of scrobes weakly curved downwards in basal third, straight anteriorly, interrupted before lower margin of eye; lower and upper margins parallel; scrobes narrow, shallow, distinctly broadened at base; rostrum in lateral view nearly straight, nearly as thick at base as at apex, median line very weakly and evenly curved, subsinuate at base beyond head; underside with U-shaped keels, moderately converging from apex to base. Vestiture very thick, consisting of yellowish, oval, finely trifid scales directed towards median part in basal half and progressively turned anteriad in apical half, median tooth progressively more developed and lateral teeth reduced, scales at apex simple, elongate to lanceolate, seta-like on apical plate; on sides above scrobes short, sparse, mainly trifid, below scrobes lanceolate, acutely pointed; setae moderately distinct, yellow-orange, not raised (Figs. 44–45).

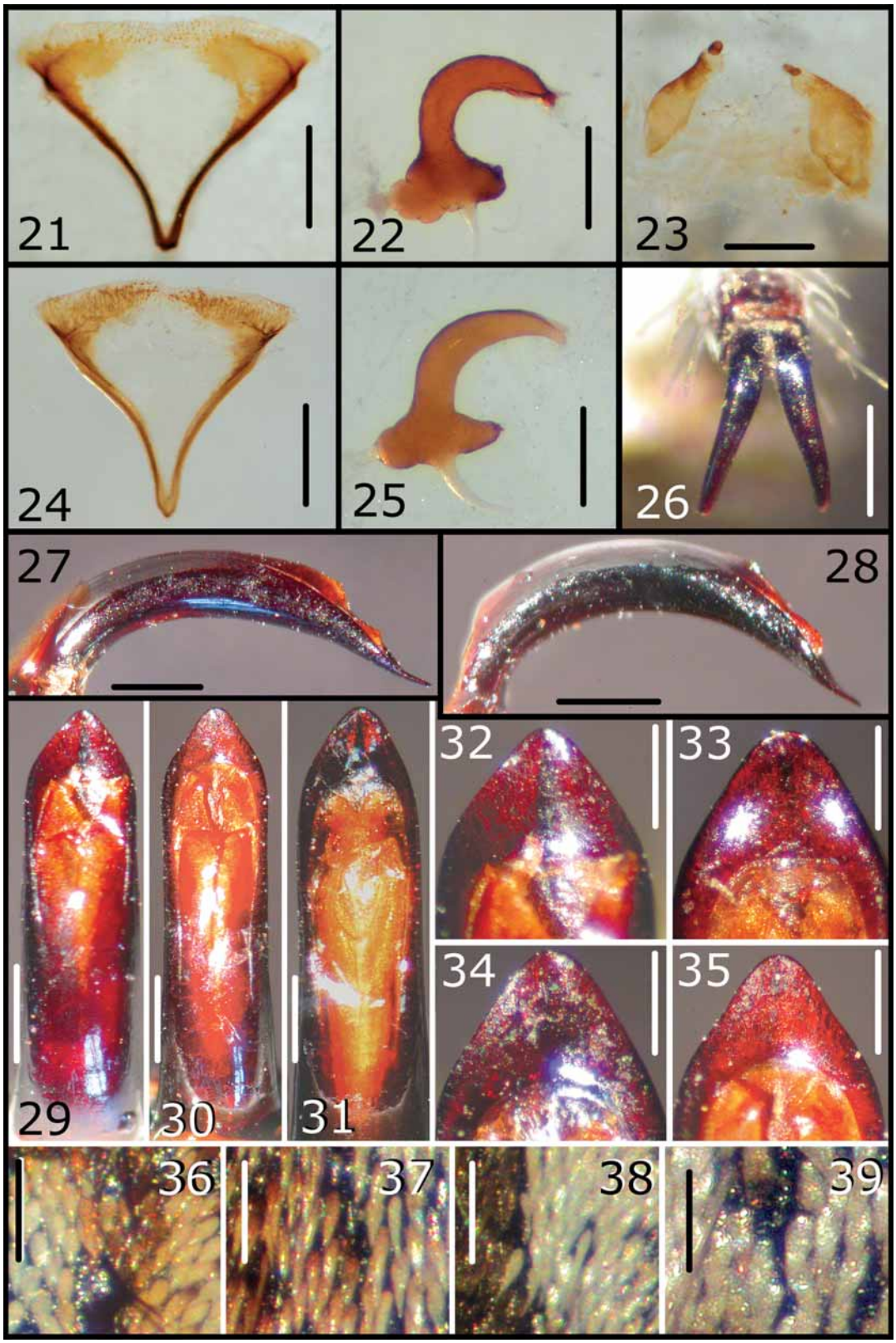
Antenna slender. Scape straight, slightly thickened towards apex, with digitate scales. Funicle segment 1 globose, slightly bigger than 2, this twice as long as 1, cylindrical and slightly widened to apex; 3–5 moderately transverse; 6 larger than previous; 7 fused to club; all segments with elongate grey scales and hair-like setae. Club elliptical, finely setose, as long as previous 4 funicle segments combined (Fig. 47).

Head transverse, flattened anteriorly between eyes, with a narrow, interocular, short, glossy median keel, densely coated with short, bifid and trifid yellowish scales; distance between eyes slightly broader than rostrum at base; vertex slightly convex. Eyes big, flat, broadly elliptical, lower margin rounded.

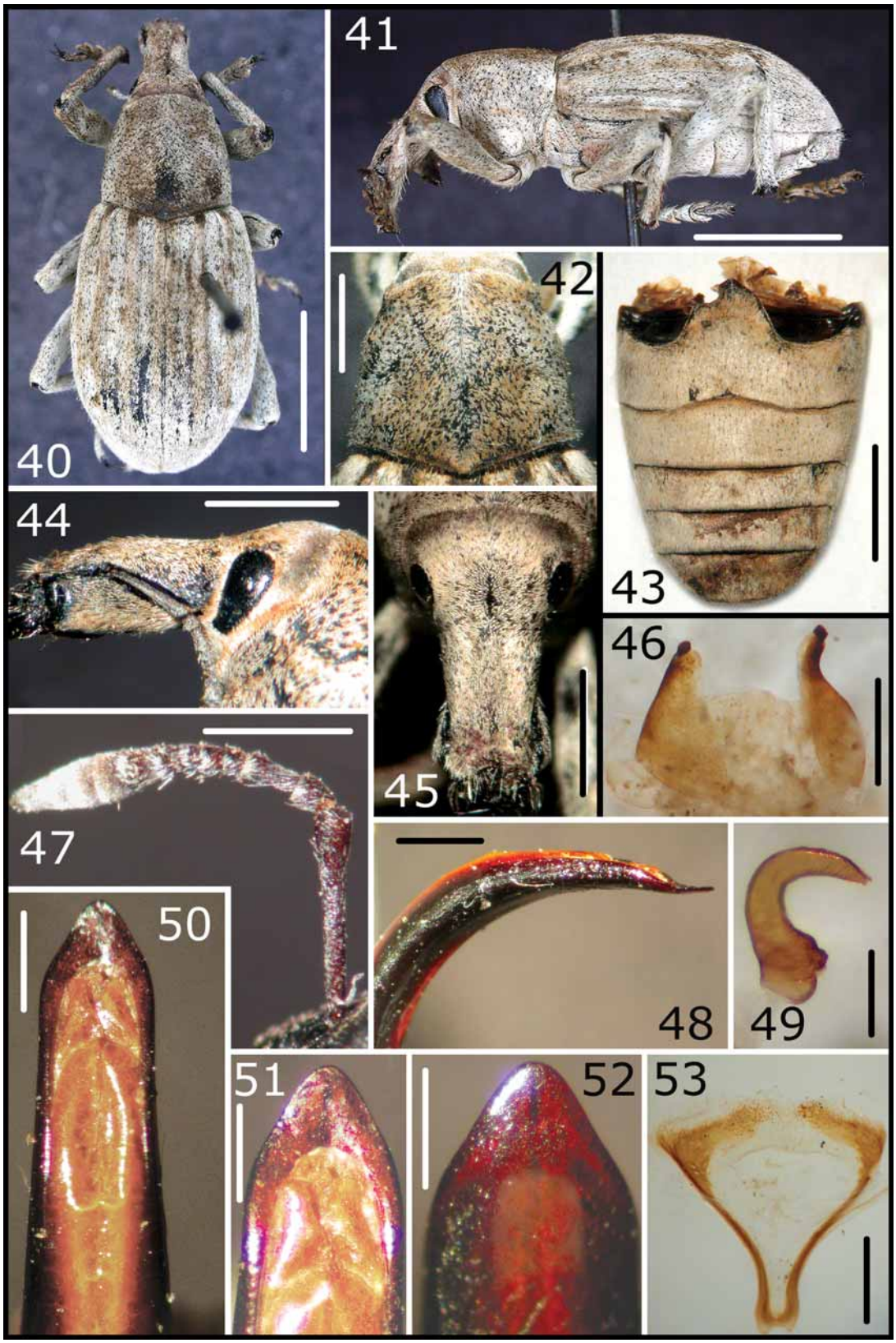
Pronotum nearly as long as wide, base oblique, medially distinctly lobed towards scutellum, sides moderately and very evenly convergent from base to apex; dorsum medially weakly but distinctly convex from centre to apex, with barely visible median line, flat and lacking any raised sculpture from centre to base; in lateral view faintly convex, maximum height in middle; sculpture consisting of minute, dense punctures and sparse, scattered, barely larger, isolated punctures becoming denser towards sides, completely hidden by dense vestiture of ivory-greyish and very pale brownish, simple or trifid short scales, directed towards centre, with median tooth more developed and lateral teeth small, acute, sometimes indistinct; sides with very thick, in part imbricate, more distinctly trifid, usually paler yellow-whitish scales; setae short, hair-like, inserted in isolated larger punctures, hardly distinct (Fig. 42).

Scutellum microscopic.

Elytra broad, oval-elliptical, sides slightly broadened, maximum width behind middle of length, evenly rounded towards apex; in lateral view convex, declivity sharply sloping. Intervals 3, 5, 7 and 9 slightly but clearly convex, more raised and forming a distinct low hump near base; 6 reaching base of elytra, 7 and 9 fused at base; even intervals usually as wide as odd ones. Striae very narrow, shallow and generally indistinct. Vestiture consisting of dense, imbricate, simple, lanceolate, pale ivory scales, acutely pointed at one edge and rounded on other side, finely digitate only on interval 11 (lateral margin); scales on odd intervals slightly darker, very light brownish, particularly at base; setae distinct, stiff, hair-like, light brownish, semi-erect, inserted in two irregular rows on even and odd intervals (Fig. 37).



FIGURES 21–39. *Epexochus*, genitalia, claws and scales. Female genitalia (21–23: specimen from Kzyl-Dzhar; 24–25: specimen from Aulie-ata). 21, 24, sternum VIII; 22, 25, spermatheca; 23, hemisternites. Claws. 26, specimen from Borokhoro. Aedeagus, dorsal and lateral views and detail of apex. 27, 30, 35, specimen from Koibun; 28–29, 32, specimen from Elton lake; 31, specimen from Dzharkentsk; 33, specimen from Betpak; 34, specimen from Borokhoro. Elytral scales. 36, holotype of *E. lehmanni*; 37, holotype of *E. korotyaevi*; 38, holotype of *E. voriseki*; 39, paratype of *E. mongolicus*. Scale bars: 21, 23–24, 27–31: 1 mm; 26, 32–35: 500 μm; 36–39: 100 μm.



FIGURES 40–53. *Epexochus korotyaevi*, structural details (40–42, 44–45, 48, 50–52: holotype; 43, 46–47, 49, 53: paratype). 40–41: habitus, dorsal and lateral views; 42: pronotum; 43, ventrites; 44–45, rostrum, lateral and dorsal views; 46: hemisternites; 47: antenna; 48: aedeagus, lateral view; 49: spermatheca; 50: aedeagus, dorsal view; 51–52: apex of aedeagus, dorsal and ventral views; 53: sternum VIII. Scale bars: 40–41: 5 mm; 42–45: 2 mm; 46–48, 50, 53: 1 mm; 51–52: 500 μm; 49: 400 μm.

Legs slender. Femora slightly thickened medially, with generally trifid, lanceolate scales and erect, stiff, white setae. Tibiae rectilinear, densely coated with whitish scales and long sparse setae. Tarsi as typical of genus, with lateral setae directed downwards, segment 3 with lobes elongate, slightly widened; claws narrow, divergent, connate at base.

Venter. Ventrite I curved at apex, II narrower, III half as long as II, IV longer than III, V shortly transverse; all very densely coated with whitish, imbricate, finely digitate scales and erect, stiff, whitish setae; base of II, III and IV with two very narrow stripes of dark brownish scales forming a narrow, barely distinct median basal stripe on V (Fig. 43).

Genitalia. Aedeagus similar to that of *E. lehmanni*, slightly less curved and with a slightly conical median lobe; lamella longer and with weakly sinuate sides (Figs. 48, 50–52). Sternite VIII of ♀ with arms not fully connate at base, lamina conformed as in *E. lehmanni* (Fig. 53). Spermatheca with basal ramus (Fig. 49).

Variation. The specimens examined are very uniform, in particular regarding the most significant discriminative traits, such as the base of the pronotum prominently extended towards the scutellum and the shape of the elytral scales; the ivory-greyish scales are always predominant but in some specimens the pale brown scales are more frequent, usually on the disc of the pronotum and the odd intervals, particularly on the basal low hump. The size is uniform, varying between 16.5 and 18.2 mm.

Material examined. Holotype ♂♂: TAJIKISTAN: "Beshkentskaja dol., Tadzh., r-i Shaar-tuza [37°18'N 67°58'E], Lopatin, 5.IV.[19]58 (ZIN). Paratypes: same data, 1 ♂ 1 ♀ (1 ♂ MER; 1 ♀ ZIN) "Tadzhikistan, Tschilitschor, Tshesherin, 30.III.1982", 1 ♂ 2 ♀ (1 ♂ 1 ♀ CSNV; 1 ♀ MER); "Tschilitshor-Tschashta W, Shaartuza, Tadzh. 22.IV.[1]962, Krizhakovskij, 1 ♂ (ZIN); "Beshkentskaja dol., Tschilu sor Sashta, Tschukajukov, 13.III.[19]64, 1 ♀ (ZIN); same data, 23.VI.[19]63, Soboleva, 2 ♂ i ♀ (ZIN); "Tadzhikistan distr., Shaartuz vil, Beshkent. dol, 24.IV.[19]63", 1♂ 1 ♀ (ZIN); same data, 14.III.[19]62, 2 ♂ (ZIN); "r. Vakhsh, okr. Kyzyl-Kala [37°53'N 68°39'E], 4.IV.[19]58", 1 ♂ (ZIN).

Distribution (Fig. 82). The type locality, Beshkentskaja dolina, is in southern Tajikistan, and the species is apparently restricted to the southernmost part of Tajikistan.

Etymology. With great pleasure we name this species after our friend Boris Korotyaev, acknowledging his help and contribution to this paper and to our studies of Russian weevils.

Remarks. This species is closely related to *E. lehmanni*, from which it is consistently differentiated in the shape of the pronotum, with the base distinctly curved towards the elytra and the median part weakly but distinctly convex in the anterior half, in the lanceolate elytral scales, about 5 times as long as wide (2–3 times as long as wide in *E. lehmanni*) (Figs. 37 vs. 36), in the rostrum being moderately conical, broader at the base than between the antennae (Figs. 45 vs. 12), and in the very narrow stripe of brown scales at the base of the ventrites (Figs. 43 vs. 11).

Epexochus voriseki Meregalli & Talamelli, sp. n.

Diagnosis. An *Epexochus* species of relatively small size, characterised by its flat body, the elytra covered with predominantly brown scales and slender, long, hair-like setae, and the tarsi having very thick lateral tufts of setae.

Description. Dimensions. Body length excluding rostrum: 13.10 mm. Rostrum: length 2.63 mm, width 1.63 mm (ratio1.61). Pronotum: length 3.45 mm, width 3.97 mm (ratio 0.86). Elytra: length 9.04 mm, width 5.96 mm (ratio 1.52). Ratio of elytral to pronotal length 2.62 (holotype).

Habitus. Body oval. Integument dark reddish to nearly black, densely coated with lanceolate, usually simple scales and long, hair-like setae; antennae ferruginous (Figs. 54–55).

Rostrum straight, robust, dorso-lateral margins rounded, with very slight trace of a keel; median keel relatively sharp, high, distinct from base of rostrum to base of epistoma, slightly broadened at antennal insertion; convex triangular plate reduced, barely visible; longitudinal furrows moderately impressed, interrupted at antennal insertion and also visible, although shallower, on subapical plate, behind epistoma;

rostrum in lateral view straight, median keel visible, straight from base to antennal insertion and curved towards apex; upper margin of scrobes glossy, keeled and slightly prominent, sinuate and reaching lower margin of eye; lower margin subparallel, shortly reaching underside; scrobes narrow, glossy, barely broadened basad when viewed from underside. Vestiture consisting of digitate whitish scales, densely disposed into dorsal furrows; scales smaller, trifid, whitish and brown, relatively sparse and not completely concealing integument on sides above upper margin of scrobes; scales on pregenae glossy, lanceolate, trifid, with very short lateral teeth or simple (Figs. 57–58).

Antenna slender. Scape straight, narrow, slightly thickening towards apex, with dense silvery scales. Funicle with segment 1 globose, 2 as long as wide, 3–6 transverse, 7 larger, appressed to club, all densely coated with silvery scales and long setae. Club elliptical, segments 1 and 2 together as long as 3 (Fig. 59).

Head transverse, broad, forehead between eyes as wide as rostrum at base, flat, with short median keel behind small interocular pit; vertex weakly convex. Vestiture consisting of dense, short, trifid, brownish scales. Eyes oval-triangular, nearly flat, upper part broadened, subangular at lower margin.

Pronotum transverse, base weakly and evenly arched, not lobed towards scutellum, slightly sinuate towards external margins; sides subrectilinear up to anterior quarter, then shortly constricted to apex; apex distinctly prominent above head, on sides straight, postocular lobes hardly developed; dorsum flat, smooth, densely punctulate and with sparse, round, larger punctures; median line barely visible only on disc. Vestiture consisting of acuminate scales, usually trifid with very short lateral teeth, on disc forming a dark brown pattern narrowed anteriorly and broadening basad, delimited by a dorsal whitish stripe widening apicad, followed dorso-laterally by another brownish stripe; upper part of sides mainly white, median part brown, prosternum white; setae long, erect, mainly distinct on sides, clearly visible in dorsal view, particularly on sides and forming a distinct fringe behind base (Fig. 56).

Scutellum minute.

Elytra oval, sides hardly rounded, maximum width in middle of length, dorsum flattened, in lateral view very slightly convex, declivity feeble (Fig. 55). Odd intervals weakly but distinctly convex, particularly in basal half, even intervals not completely flat; interval 6 reaching base, 7 joined to 9 but not broadened at base, 8 nearly reaching base. Striae narrow but distinctly impressed. Vestiture consisting of acuminate to lanceolate scales, usually simple, finely digitate only on basal half of interval 11, brown on suture and intervals 3, 5, 7, white alternating with brown in short longitudinal stripes on odd intervals, mainly white on intervals 8–11; setae erect, hair-like, longer than an interval width, irregularly and relatively densely inserted on whole surface, longer on sides and declivity (Fig. 38).

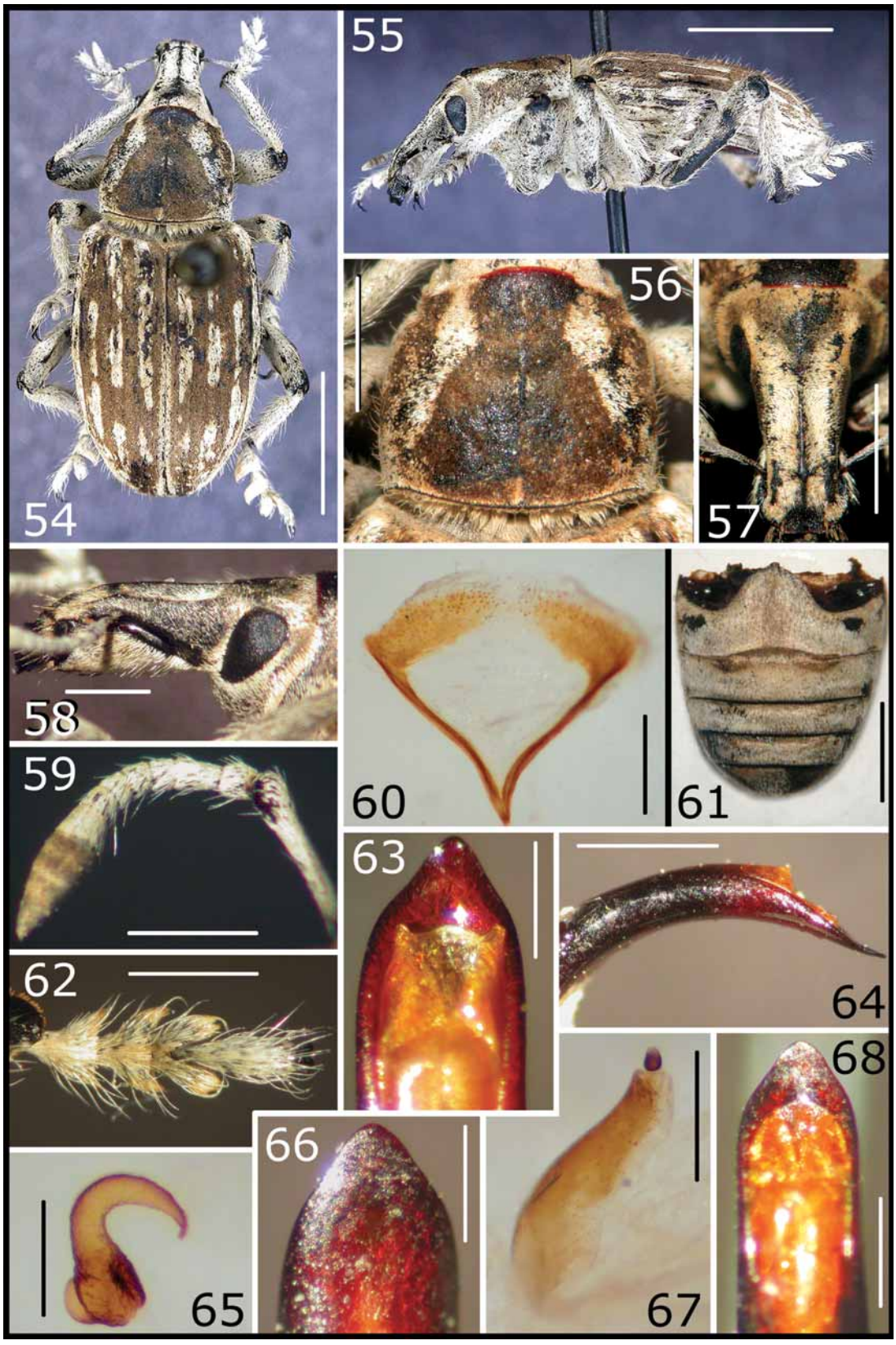
Legs robust. Femora moderately thickened in middle, with dense, aciculate, white scales and erect setae. Tibiae cylindrical, densely scaly and with dense and long erect white setae. Tarsi with segment 1 shortly triangular, 2 triangular, widened, 3 with broad lobes, all with strongly developed lateral tuft of setae, particularly thickened on hind tarsus, and with very dense white scales and very long hair-like setae (Fig. 62); onychium slender and setose, claws narrow, divergent, connate near base.

Ventrites. Ventrites I and II relatively narrow, of similar length, III and IV slightly narrower, V transverse, evenly rounded; all with extremely thick vestiture of slender, imbricate digitate scales, teeth very long and fine, white with a brown basal stripe on segments II–V (Fig. 61).

Genitalia. Aedeagus weakly curved; lamella short, apex subacute (Figs. 63–64, 66, 68). Sternite VIII of ♀ with arms connate at base, apical sclerotisation dense and expanded (Fig. 60). Spermatheca with cornu thick, sharply curved at 90° above nodulus, ramus basal (Fig. 65). Hemisternites slightly and evenly broadened (Fig. 67).

Variation. The specimens examined are relatively uniform; the peculiar structure of the tarsi is present in all. Also the pattern of the vestiture shows limited variability, with the brown scales always predominant, sometimes covering the entire dorsum of the elytra, but some specimens have a narrow median longitudinal white line on the pronotum. All specimens are smaller than 15 mm.

Material examined. Holotype ♂: UZBEKISTAN: “Uzbekistan, Gazli [40°08'N 67°27'], 13.IV.(19)89, M. Janata leg.“ (MER). Paratypes: same data, 10 ex (3 ♂ 1 ♀ MER; 2 ♂ CSNV; 4 ex VOR). TURKMENISTAN: "Ozera Turkmen kel' [indication non precisely located], 28.IV.[19]54, Luppova A. N.", 2 ♀ (ZIN).



FIGURES 54–68. *Epexochus voriseki*, structural details (54–59, 62–64, 66, 68: holotype; 60–61, 65, 67: paratype). 54–55: habitus, dorsal and lateral views; 56: pronotum; 57–58: rostrum, dorsal and lateral views; 59: antenna; 60: sternum VIII; 61: ventrites; 62: tarsus; 63: aedeagus, detail of apex, dorsal view; 64: aedeagus, lateral view; 65: spermatheca; 66: aedeagus, detail of apex, ventral view; 67: hemisternite; 68: aedeagus, dorsal view. Scale bars: 54–55: 5 mm; 56–57, 61: 2 mm; 58, 64, 68: 1 mm; 59–60, 62–63, 67: 500 μm.

Distribution (Fig. 82). All specimens examined were collected in central Uzbekistan and in Turkmenistan. The Turkmenian record is not indicated on the map (Fig. 82) since it was impossible to precisely locate it.

Etymology. We name this species in memory of the Czech entomologist J. O. Voříšek (1921–2008), with whom the senior author shared a personal friendship for more than 30 years and whose kindness, warm hospitality and help with specimens and information was always inspirational.

Remarks. This species is easily recognisable by its comparatively smaller size, the barely convex elytra with faintly oblique declivity and vestiture of predominating brown scales with narrow stripes of whitish scales, the very long, flexible setae sparsely distributed over the entire dorsum, the long tufts of setae behind the base of the pronotum and the slightly shorter tarsal segments with long lateral setae.

Epexochus mongolicus Meregalli & Talamelli, sp. n.

Leucochromus consobrinus sensu Ter Minasyan, 1972: 543 (non Faust, 1904).

Diagnosis. An *Epexochus* species of large size, convex body, bell-shaped pronotum with straight base, large elytra with curved sides and flat intervals also at base, slightly curved hind tibiae and aedeagus with short, round apex.

Description. Dimensions. Body length excluding rostrum: 21.20 mm. Rostrum: length 3.89 mm, width 1.98 mm (ratio 1.96). Pronotum: length 5.64 mm, width 6.60 mm (ratio 0.85). Elytra: length 14.48 mm, width 9.48 mm (ratio 1.53). Ratio of elytral to pronotal length 2.57 (holotype).

Habitus. Body black, integument smooth, glossy, covered with simple sub-acuminate scales and with short setae (Figs. 69–71).

Rostrum robust, relatively short, with sides subparallel, dorso-lateral margins completely rounded; median triangular plate developed, raised, broadening from base to antennal insertion; median keel hardly distinct, obtuse, extending towards apex beyond antennal insertion; longitudinal-oblique furrows deep, shortly interrupted at antennal insertion and extending beyond antennae towards apex; upper margin of scrobes sinuate, reaching underside of eye; lower margin parallel to upper margin, not diverging at base on underside; scrobes narrow, glossy, deep; rostrum in lateral view straight, median keel visible, evenly and moderately convex, maximum height at antennal insertion; keels on underside linearly divergent from base to apex. Vestiture consisting of yellowish, aciculate, simple, glossy scales, progressively more slender and lanceolate towards apex (Figs. 72–73, 75, 77).

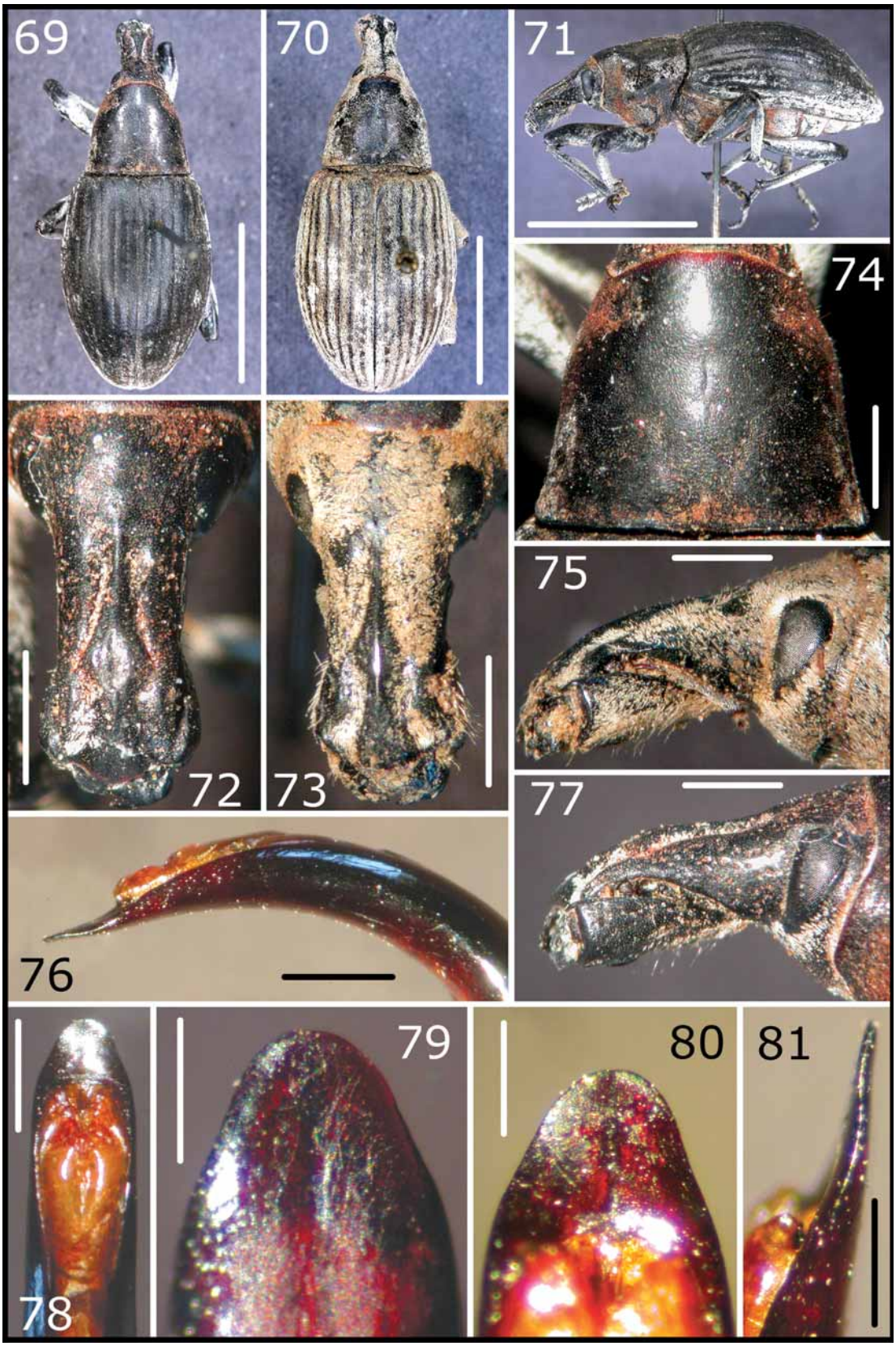
Antennae not studied (lost in both specimens examined).

Head transverse, interocular distance as long as rostral width at base, forehead flattened laterally and slightly convex in middle; interocular pit very small. Vestiture consisting of scales similar to those of rostrum, simple, directed towards middle. Eyes large, upper part broadened, lower margin rounded.

Pronotum bell-shaped, base rectilinear, medially not lobed towards scutellum, sides slightly sinuate from base to apex, maximum width at base, postocular lobes small, slightly angulate, upper part weakly expanded above head; dorsum flat, lacking median glossy line, densely punctulate on entire surface except for two small, round, glossy dorso-lateral patches; isolated, glossy, slightly larger punctures barely distinct, more numerous on sides. Vestiture consisting of lanceolate, glossy, ivory and brownish scales, brown scales mainly present on dorsum, sides with usually trifid light scales; setae extremely short, barely visible (Fig. 74).

Scutellum small, triangular.

Elytra broad, distinctly wider than pronotum, base nearly straight, sides curvilinear, maximum width in middle of length, evenly rounded to apex; in lateral view convex, evenly and progressively curved on declivity. Intervals completely flat, also at base, odd ones as wide as even ones. Striae narrow, deep, with distinct small punctures. Vestiture consisting of whitish and brown oval or elliptical scales, faintly acuminate, about three times as long as wide, brown scales usually more abundant along striae, forming scattered and



FIGURES 69–81. *Epexochus mongolicus*, structural details (69, 71–72, 74, 76–81: holotype; 70, 73, 75: paratype). 69–70: habitus, dorsal view; 71: habitus, lateral view; 72–73: rostrum, dorsal view; 74: pronotum; 75, 77: rostrum, lateral view; 76: aedeagus, lateral view; 78: aedeagus, dorsal view; 79–81: apex of aedeagus, ventral, dorsal and lateral views. Scale bars: 69–71: 10 mm; 72–75, 77: 2 mm; 76, 78: 1 mm; 79–81: 500 μm.

irregular patches and short stripes; pale scales predominant along intervals, forming an irregularly oval, nearly white patch on interval 6 in middle of its length; setae short, semi-erect, stiff, relatively abundant on entire surface (Fig. 39).

Legs slender. Femora very slightly thickened in middle, with dense vestiture of lanceolate scales and raised whitish setae. Tibiae with fore tibia slightly sinuate on inner side, middle tibia short, robust, hind tibia slightly but distinctly curved; all tibiae with thick coating of pale, slender, acuminate scales, at least 5 times as long as wide, and dense erect, whitish, stiff setae. Tarsi with segments slightly widened, segment 2 at least as long as wide, lobes of 3 slightly broadened; all densely scaly, lateral tuft of setae short.

Ventrites. Ventrite II slightly narrower than I, III and IV 2/3 as long as II, V transverse, apex sinuate; scales on all ventrites dense, very long, bifid or, rarely, simple, whitish with very narrow basal brown stripes.

Genitalia. Aedeagus evenly, moderately curved; apical lamella broad, well developed, rounded at apex, slightly sinuate in lateral view (Figs. 76, 78–81). Female genitalia unknown (abdomen in only female examined empty).

Variation. The two available specimens are very similar to each other, although the collecting localities are about 150 km apart; the elytra are slightly more curved in the paratype but this may also be due to the sex of the specimen.

Material examined. Holotype ♂: MONGOLIA: "Mongolia, 10 km S Uzitsh-Somona, Kobdoskij Ajmak [48°01'N 91°38'E], Arnoldi, 2–3 VIII.[1]968 (ZIN). Paratype ♀♀: "Mongolia, Gobi Altaj aimak, zwischen Biž gol und Bodončijn gol, cca 50 km NW von Biž gol [45°46'N 92°10'E], 1600 m, Exp. Dr. Kaszab 1966" (HNHM) (specimen incomplete).

Distribution (Fig. 82). Both known specimens were collected in the Mongolian Altai mountains.

FIGURE 82. Distribution of the genus *Epexochus* [map taken from Encarta World Atlas 2000 (Microsoft Corporation), elaborated with Photoshop 7.0 (Adobe Systems Incorporated)].

Etymology. The species named is formed after the country of the species' origin.

Remarks. *Epexochus mongolicus* is morphologically more similar to *E. lehmanni* than to the other two

species and differs from it principally in the intervals being flat for their entire length, including at the base, the pronotum less transverse, with slightly sinuate base, curved backwards near the lateral margin, the rostrum shorter and more robust, the hind tibiae curved and more densely squamose and the apex of the aedeagus larger and rounded (Figs. 79–80 vs. 32–35). The paucity of available material of *E. mongolicus* does not allow assessment of other seemingly differential characters from *E. lehmanni*, such as the larger size and the apparently typical whitish spot on elytral interval 6. The other two species, occurring at the opposite limits of the range of the genus, are more differentiated from *E. mongolicus*, in that *E. korotyaevi* has the base of the pronotum medially lobed towards the scutellum (Fig. 74 vs. 42) and *E. voriseki* is smaller, with flat elytra, slightly convex intervals and hair-like, flexible setae on the entire body (Figs. 69–71 vs. 54–55).

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