

Revision of the genus *Intestinarius* gen. n. from Southeast Asia,  
with notes on a probable autapomorphy of Batrisitae  
(Coleoptera: Staphylinidae: Pselaphinae)

Ревизия рода *Intestinarius* gen. n. из Юго-Восточной Азии  
с заметками о возможной аутапоморфии Batrisitae  
(Coleoptera: Staphylinidae: Pselaphinae)

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КЛЮЧЕВЫЕ СЛОВА. Coleoptera, Staphylinidae, Pselaphinae, Batrisitae, *Intestinarius*, Юго-Восточная Азия, аутапоморфия, верхняя губа

ABSTRACT. The new genus *Intestinarius* is described. The genus includes the type species *I. quinquesulcatus* (Raffr.) (Malaysia, Singapore) and seven new species: *distorticeps* sp.n. (Java), *kuzmini* sp.n. (Yunnan), *orthopygium* sp.n. (Laos), *crassicornis* sp.n. (Laos), *ingeniosus* sp.n. (Sarawak), *pexatus* sp.n. (Sarawak), *diatretus* sp.n. (Sarawak). Key to species of the genus is provided. The character that is most probably the first known autapomorphy of Batrisitae is found and discussed.

РЕЗЮМЕ. В статье приведено описание нового рода *Intestinarius* с типовым видом *I. quinquesulcatus* (Raffr.) (Малайзия, Сингапур) и с 7-ю новыми видами: *distorticeps* sp.n. (Ява), *kuzmini* sp.n. (Юннань), *orthopygium* sp.n. (Лаос), *crassicornis* sp.n. (Лаос), *ingeniosus* sp.n. (Саравак), *pexatus* sp.n. (Саравак), *diatretus* sp.n. (Саравак). Дана определительная таблица видов рода. Обсуждается признак, который по всей видимости является первой выявленной аутапоморфией Batrisitae.

The Oriental region is extremely rich in members of the supertribe Batrisitae; these members are very diverse.

In 1894, Raffray described a peculiar species from Singapore, *Batrisus quinquesulcatus*. Later [Raffray, 1904] he placed it in the genus *Batrisodes*. Actually, this species considerably differs from the true *Batrisodes* in a number of characters and belongs, without a doubt, to a separate genus. Nomura & Idris [2003] and Nomura [2005] also reported this species in the course of their faunistic studies of the Pselaphinae of Malaysia and treated it as belonging to Gen. indet. 1.

The author of this work studied the type material of *B. quinquesulcatus* preserved in the Paris Museum

and, from 1994 on, collected this and several other species, closely related in several regions of Southeast Asia. This provided the opportunity to re-describe Raffray's species and describe a new genus and several new species.

In addition, in the course of studying the new genus, the author noticed a character that is most probably characteristic only of the supertribe Batrisitae and, thus, may prove the first known autapomorphy of the tribe. This possibility is confirmed by the results of the studies of this character in a considerable number of species from all the supertribes of Pselaphinae.

Abbreviations used in the present work are: MNHN — Muséum national d'histoire naturelle, Paris PCSK — Private collection of S. A. Kurbatov, Moscow ZMUM — Zoological Museum, University of Moscow, Moscow

The abdominal tergites and sternites are numbered according to Chandler [2001] in arabic (visible position) and roman (morphological position). The abdominal segments are counted from tergite 1 (IV) and sternite 1 (III).

*Intestinarius* Kurbatov, gen. n.

Type species: *Batrisodes quinquesulcatus* Raffray, 1894. Gender masculine.

DESCRIPTION. Anterior half of head's dorsal surface forming more or less rectangular protruding frontal lobe. Frontal lobe medially with distinct impression, posterior margin of which usually angulate. Antennal tubercles well-marked. Frontal lobe laterally, immediately behind antennal tubercles, with distinct incision; this incision with posterior margin denticle-shaped. Tentorial foveae strongly displaced backwards, situated near gular constriction, with vertexal sulcus beginning in

each fovea and directed anteriorly; vertexal sulci not confluent anteriorly. Area of vertex between sulci usually more or less raised. Head often with narrow longitudinal carina on lateral margin, lateral of vertexal sulcus. Long occipital carina present, reaching posterior margin of frontal impression. Eyes well-developed, situated at middle of head's length. Temples long, narrowed posteriorly, with lateral margin almost straight, longer than eyes in lateral view. Ventral portion of temples pubescent, with very long erect hairs. Anterior angles of labrum strongly angulately protruding anteriorly. Segment 4 of maxillary palpus dorsally with group of several recumbent setae. Antennae elongate, with each segment longer than wide, segment 7 and, to smaller degree, segment 5 always slightly wider than each of both adjacent segments. Antennal club 3-segmented, indistinct.

Pronotum dorsally with five longitudinal sulci conjoined basally by transverse antebasal sulcus; bases of exterior sulci confluent with lateral pronotal foveae; medial longitudinal sulcus posteriorly slightly reaching beyond antebasal sulcus. Additional longitudinal sulcus present under lateral margin of pronotum. All seven sulci disappearing somewhat behind anterior margin of pronotum. Base of pronotum with two pairs of basal foveae and pair of conical tubercles. Paranotal sutures absent.

Elytral sculpture includes three basal foveae and fine complete sutural sulcus; discal sulcus, if present, no longer than half of elytron.

Tergite 1 (IV) with two very short tubercle-like interior basal carinae and two long exterior carinae. Each interior carina with two small foveae at each side. Third, exterior, fovea present at base of exterior carina. Tergite 1 several times longer than tergite 2 or 3 and considerably longer than tergite 4.

Prosternum with two procoxal foveae. Mesosternum with two median foveae and forked lateral foveae. Mesocoxal cavities open. Metasternum with two lateral mesocoxal and two metasternal foveae. Median process of posterior margin of metasternum with very small incision medially. Metendostenite with longitudinal carinate protrusion medially.

Sternite 1 (III) medially strongly protruding downwards (this protrusion being of peculiar shape and clearly visible only in detached abdomen).

Profemora distinctly thickened, their interior margin with long carina and series of vertically protruding setae, these setae gradually getting shorter from distal end of femur to its middle (Fig. 9).

Male secondary sexual characters usually localized on trochanters, mesotibiae, tergites 3 and 4, and abdominal sternites, but sometimes also on palpi and metafemora.

Apical portion of aedeagus with numerous long setae.

Chandler [2001, pp. 254–255] and Löbl & Kurbatov [2001, pp. 565–566] almost simultaneously observed the absence of any adequate system for the supertribe Batrisitae. The difficulties of producing such system are related, on the one hand, to the extreme richness of the taxon, and, on the other hand, to the very high

lability of characters, prone to frequent reductions, reversions, and to parallel development. Under such conditions, all our opinions of the phylogenetic relations of the new genus may appear more or less subjective. We believe, notwithstanding, that the genus *Intestinarius* is the closest to the genus *Mnia*, because of the following characters: (1) anterior half of head forming rectangularly protruding frontal lobe with more or less parallel sides, and antennal base separated from anterior margin of eye (possible synapomorphy of these two genera); (2) median portion of sternite 1 of peculiar shape and strongly protruding downwards (Figs 7–8). In addition, the apical portion of the aedeagus of males of the new genus has numerous long setae. Males of many species of the genus *Mnia* have similar apex of the aedeagus, e.g., *M. elegans* Raffr., *M. eucera* Löbl, *M. gracilis* Löbl, *M. mutator* Löbl [see Löbl, 1973, Abb. 24, 25, 43–46, 63, 64], and some others, whereas in the rest of *Mnia* species the number of such setae is very small and the setae are sometimes shortened. It should also be noted that the profemora are distinctly thickened in both sexes in both these genera. Nevertheless, there are some considerable differences. For instance, the genus *Mnia* has such autapomorphies as the strongly elongated antennal segment 1 and the abdominal sternite 2 with a deep and narrow incision laterally at the base. Additionally, this genus has most of the pronotal structures reduced, namely: sulci (except the exterior), foveae (except the lateral), and conical tubercles, as well as all the sulci and foveae of the elytron.

#### *Intestinarius quinquesulcatus* (Raffray)

Figs 1–5, 18.

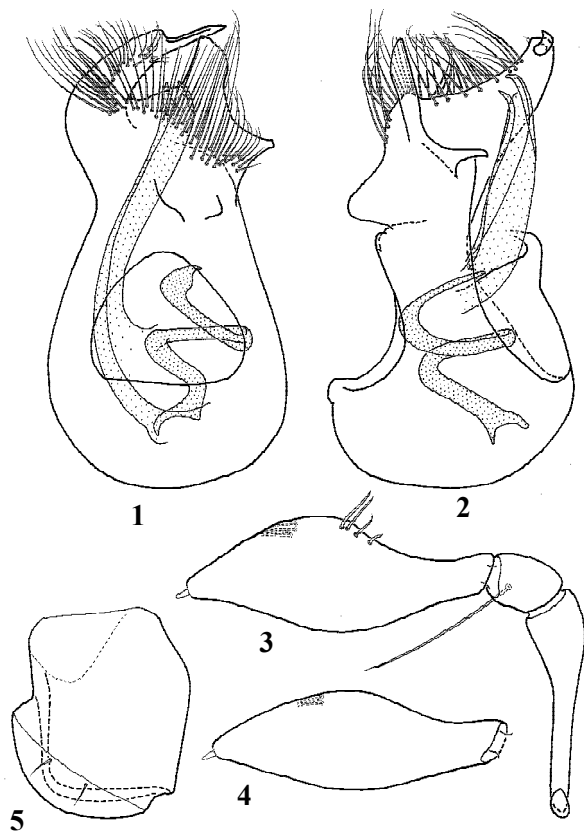
*Batrisis quinquesulcatus* Raffray, 1894: 241

*Batrisodes quinquesulcatus*, Raffray, 1904: 90

MATERIAL. Lectotype (designated here) ♂, provided with four labels: (1) Singapore; (2) Muséum Paris 1917 coll. A. Raffray; (3) TYPE [red]; (4) *B. quinquesulcatus* A. Raffray det. (MNHN). Paralectotype (designated here) ♀, provided with labels (1), (2), and (4) (MNHN). Additional material. 1 ♂: W Malaysia, Fraser's Hill, 1200 m, litter, 29.01.1999, leg. S. Kurbatov; 1 ♀: same locality, but 1000 m, 31.01.1999 (PCSK).

DESCRIPTION. Body length 2.3–2.5 mm. Pubescence of medium length (average length of elytral hairs 0.1 mm).

Head (length 0.56–0.59, width with eyes 0.50–0.51 mm) more or less smooth, only with several microtubercles on frontal impression and on temporal area. Frontal lobe width 0.31–0.32 mm, its sides behind lateral denticle straight and slightly dilating until anterior margin of eyes. Vertex flattened between vertexal sulci, protruding slightly. Vertexal sulci parallel along most of their length and slightly diverging only anteriorly, near frontal impression. Lateral carinae pronounced, long, anteriorly almost reaching lateral incisions of frontal lobe. Antennae elongate, with segments 1–8 smooth; scapus approximately 1.5 times as long as wide; segment 2 considerably narrower than segment 1, more than 1.5 times as long as wide; segment 3 as long as segment 2, but barely narrower; segment 4 somewhat longer than segment 3 and as wide as segment 3; following segments of flagellum still longer, longest of these, segment 7, being 2.5 times as long as wide; segment 9 as long or slightly shorter, but somewhat wider than segment 7; segment 10 slightly shorter and slightly wider than segment 9; segment 11 wider than segment 10 and no longer or barely longer than two preceding segments together.



Figs. 1–5. *Intestinarium quinquesulcatus* (Raffr.): 1–2 — aedeagus (1 — dorsal view, 2 — lateral view), 3 — maxillary palpus of the male, 4 — 4<sup>th</sup> article of the female maxillary palpus, 5 — IX sternite of the male.

Рис. 1–5. Детали строения *Intestinarium quinquesulcatus* (Raffr.): 1–2 — эдеагус (1 — дорсально, 2 — латерально), 3 — нижнечелюстной щупик самца, 4 — 4-й членик нижнечелюстного щупика самки, 5 — IX стернит самца.

Pronotum (length 0.55–0.57, width 0.52–0.54 mm) impunctate, smooth, only laterally with indistinct microtubercles. Sulci well pronounced, medial sulcus at middle of pronotum less than half as wide as interval between it and next sulcus.

Elytra (length along suture 0.72–0.75, width 0.78–0.82 mm) with dense very shallow punctures. Discal sulcus very indistinct, appearing as weak depression, perceivable until  $\frac{1}{3}$ – $\frac{1}{4}$  of elytral length.

**Male.** Palpal segment 4 with distinct incision in basal half of exterior margin, distal margin of incision with several erect setae (Fig. 3). Distal margin of tergite 3 and basal margin of tergite 4 medially with hairs directed posteriorly; tergite 4 very slightly raised medially in indistinct protuberance. Sternites 2–5 slightly flattened medially; sternite 6 weakly impressed basally. Protrochanter unmodified. Mesotrochanter with minute tubercle near base of posterior margin. Mesotibia with small apical denticle shorter than tarsal segment 1. Metatrochanter with small rounded tubercle basally on posterior margin and long curved apophysis distally on posterior margin. Metafemur unmodified. Aedeagus as in Figs. 1–2, length 0.41–0.42 mm.

**DIAGNOSIS.** This species is distinguished by the modified male palpal segment 4 and by the presence of both the tubercle and the apophysis on male metatrochanter.

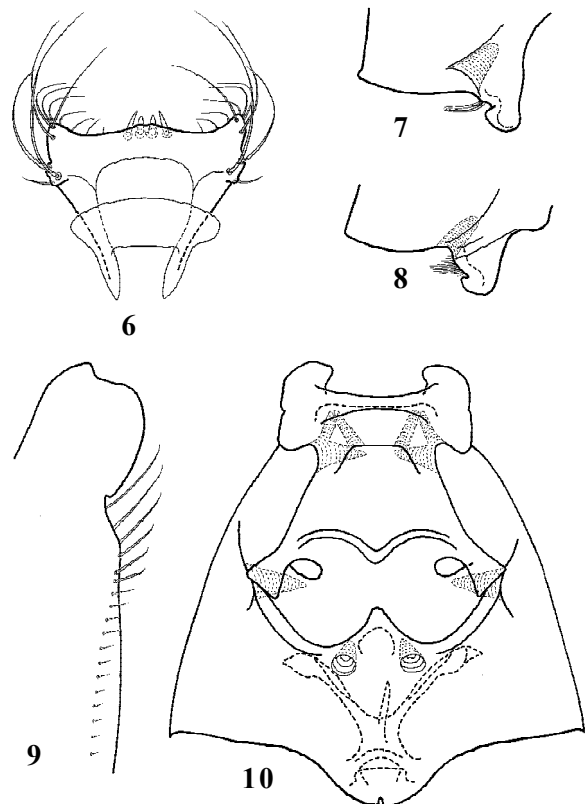
*Intestinarium kuzmini* Kurbatov, sp.n.

Fig. 6–7, 9–10, 12, 19.

**MATERIAL.** Holotype ♂: China, S Yunnan, Mengyang Nat. Res., 500 m, litter, 9.09.1994, leg. S. Kurbatov (ZMUM). Paratypes: 1 ♂, 6 ♀♀, same locality as holotype; 1 ♀, same locality as holotype, but 10.09.94 (ZMUM, PCSK).

**DESCRIPTION.** Body length 2.4–2.75 mm. Pubescence short, Pubescence short, oblique (length of hairs on elytra around 0.07 mm).

Head (length 0.54–0.57, width with eyes 0.47–0.50 mm) more or less smooth, impunctate, with some microtubercles on frontal impression. Frontal lobe width 0.34–0.35 mm, its sides parallel behind lateral denticle. Vertex between vertexal sulci flat, its sides almost abruptly depressed at vertexal sulci. Vertexal sulci parallel and only anteriorly, not far from posterior margin of frontal depression, suddenly diverging at some angle. Lateral carinae long, but not very distinct, almost reaching lateral incisions of frontal lobe anteriorly. Antennae less elongate than in preceding species; at least three proximal segments (especially scapus) with granular surface; scapus approximately 1.5 times as long as wide; segment 2 considerably narrower than scapus, less than 1.5 times as long as wide; segment 3 slightly narrower and shorter than segment 2, slightly longer than wide; segment 4 slightly longer than segment 3; following segments of flagellum longer, longest of



Figs 6–10. *Intestinarium kuzmini* sp.n. (6–7, 9–10) and *Mnia* sp. (8): 6 — labrum, 7, 8 — 1–2 abdominal sternites, lateral view, 9 — profemur, distal portion, 10 — meso- and metasternum.

Рис. 6–10. Детали строения *Intestinarium kuzmini* sp.n. (6–7, 9–10) и *Mnia* sp. (8): 6 — верхняя губа, 7, 8 — 1–2-й стерниты брюшка, латерально, 9 — дистальная часть переднего бедра, 10 — средне- и заднегрудь.

these being segment 7, approximately twice as long as wide; segment 9 as long, but slightly wider than segment 7; segment 10 slightly wider and slightly shorter than segment 9; segment 11 slightly wider than segment 10, as long as segments 9 and 10 together.

Pronotum (length 0.56–0.60, width 0.53–0.56 mm) impunctate. All sulci well-developed, medial sulcus dilated, at middle of pronotum approximately half as wide as interval between it and next sulcus.

Elytra (length 0.73–0.79, width 0.83–0.91 mm) practically impunctate, with barely perceptible traces of punctures. Discal sulcus not reaching middle of elytron.

**Male.** Paplus unmodified. Tergite 4 medially with small round impression; middle of impression with tuft of hairs directed posteriorly; anterior margin of impression slightly protruding over surface of tergite. Sternite 6 with distinct impression at base. Metatrochanter with small denticle medially on ventral margin. Mesofemur thickened, even somewhat thicker than profemur. Mesotibia with large apical tooth, rounded apically and slightly longer than segment 1 of mesotarsus. Metatrochanter apically on ventral margin with thick spine abruptly curved anteriorly at apex.

Aedeagus as in Fig. 12, length 0.51 mm.

**NOTE.** One female has tergite 4 with a sharp long spine medially. In all the other characters, this specimen is practically identical to the other females and, in addition, was collected together with them. We assume that females of this species are polymorphic in this character. Nevertheless, having no conclusive evidence, we refrain from including this female in the type series.

**DIAGNOSIS.** The new species is distinguished by the almost impunctate elytra, as well as by male secondary sexual characters, namely: the strongly thickened mesofemur, the long apical tooth on mesotibia, and the peculiar shape of abdominal tergite 4.

*Intestinarius distorticeps* Kurbatov, **sp.n.**

Fig. 11, 20.

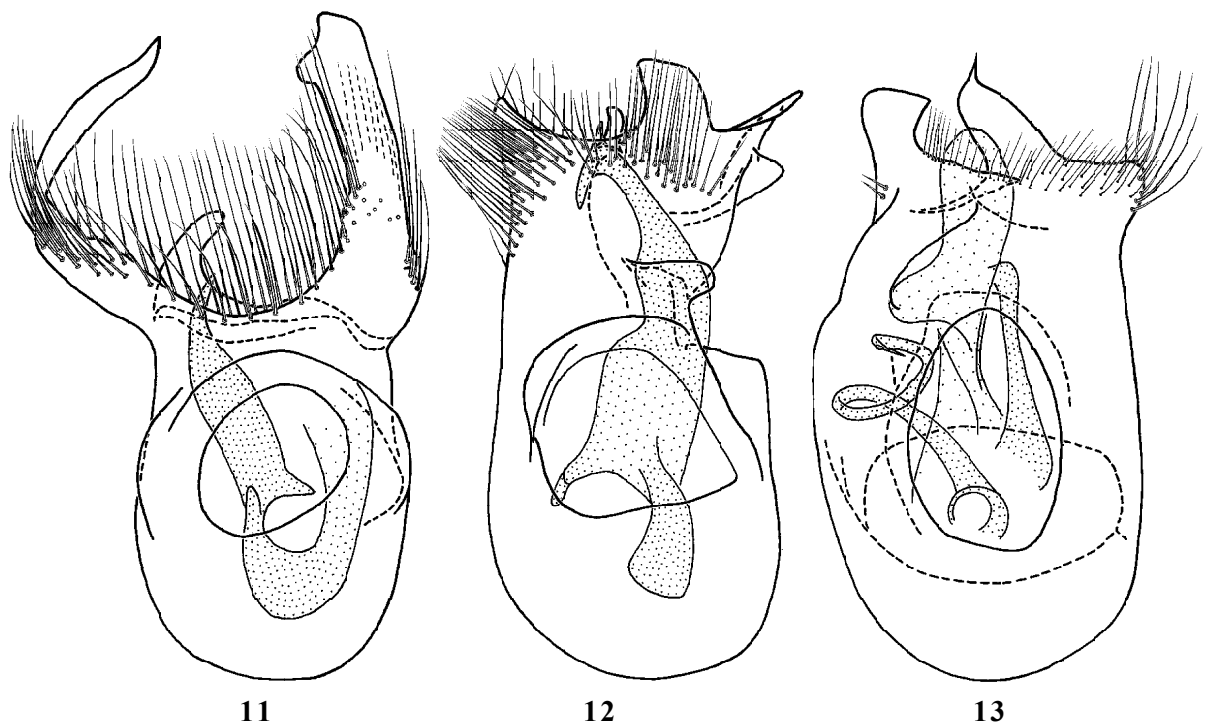
**MATERIAL.** Holotype ♂: W Jawa, Mt. Gedeh, 1400 m, litter, 25.05.1997, leg. S. Kurbatov (ZMUM). Paratypes: 1 ♂, same locality as holotype; 1 ♂, 1 ♀, same locality, but 28.05.97; 3 ♂♂ & 2 ♀♀, same locality, but 3.05.97; 2 ♀♀, same locality, but 1500 m, 4.05.97 (ZMUM, PCSK).

**DESCRIPTION.** Body length 2.6–2.85 mm. Pubescence short (average length of hairs on elytra 0.07 mm).

Head (length 0.58–0.60, width with eyes 0.49–0.51 mm) more or less smooth, impunctate except very finely punctate frontal impression, some indistinct punctures on sides of frons and few microtubercles near tentorial foveae. Frontal lobe width 0.37–0.39 mm, its sides parallel behind lateral denticle. Vertex between vertexal sulci very convex. Vertexal sulci not parallel, but curved round vertex. Lateral carinae weakly pronounced, perceptible only above eyes. Antennae very elongate; scapus with some tubercles, and segments 2–8 without any tubercles, smooth and shiny; scapus approximately 1.5 times as long as wide; segment 2 considerably narrower than scapus, also 1.5 times as long as wide; segment 3 somewhat narrower than segment 2, almost twice as long as wide; segment 4 barely longer than segment 3, and following segments of flagellum still longer, longest of these, segment 7, being 2.5 times as long as wide; segment 9 as wide as segment 7 or barely wider; segment 10 wider and barely shorter than segment 9; segment 11 slightly wider than segment 10, as long as segments 9 and 10 together or slightly shorter.

Pronotum (length 0.61–0.66, width 0.59–0.62 mm) impunctate. All sulci deep, well developed; medial sulcus wide, at middle of pronotum half as wide as interval between it and next sulcus, or even wider.

Elytra (length along suture 0.71–0.83, width 0.87–0.93 mm) with dense and rather large, but very shallow punctures. Discal sulcus practically absent.



Figs. 11–13. Aedeagi of *Intestinarius* species, dorsal view: 11 — *distorticeps*, 12 — *kuzmini*, 13 — *orthopygium*.  
Рис. 11–13. Эдеагусы видов рода *Intestinarius*, дорсально: 11 — *distorticeps*, 12 — *kuzmini*, 13 — *orthopygium*.

**Male.** Palpus unmodified. Abdominal tergites unmodified. Sternite 6 flattened. Protrochanter unmodified. Mesotrochanter with small fine spur medially on ventral margin. Mesofemur somewhat thickened, but thinner than profemur. Apex of mesotibia with short and flat tooth, apically rounded and shorter than tarsal segment 1. Metatrochanters with short and thick tooth basally on posterior margin. Aedeagus as in Fig. 11, length 0.64 mm.

**DIAGNOSIS.** The new species is distinguished by the very convex vertex; the vertexal sulci not parallel, somewhat curved round the vertex; the discal elytral sulcus almost entirely reduced; and male abdominal tergites unmodified.

*Intestinarius orthopygium* Kurbatov, sp.n.

Fig. 13, 21.

**MATERIAL.** Holotype ♂: Laos, 100 km N Vientiane, Vang Vieng, ca. 300 m, litter, 19.X.2003, leg. S. Kurbatov (ZMUM). Paratypes: 4 ♂♂, 4 ♀♀, same locality as holotype; 3 ♀♀, same locality, but 18.X.2003; 2 ♂♂, 5 ♀♀, same locality, but 20.X.2003; 2 ♂♂, 2 ♀♀, Laos, Bolikhamxai prov., rd. no. 8, Khamkeut (= Na Hin), ca. 500 m, litter, 31.X.2003, leg. S. Kurbatov (ZMUM, PCSK).

**DESCRIPTION.** Body length 2.25–2.40 mm. Pubescence rather short, oblique (length of hairs on elytra approximately 0.07–0.08 mm).

Head (length 0.54–0.55, width with eyes 0.46–0.47 mm) smooth, impunctate, sometimes with some microtubercles on frontal impression. Frontal lobe length 0.33–0.34 mm, its sides parallel behind lateral denticle. Vertex between vertexal sulci flat, as in preceding species. Vertexal sulci very weakly diverging anteriorly. Lateral carinae long, reaching very near lateral incisions of frontal lobe. Antennae moderately elongate, more or less as in preceding species, relatively thick; all antennal segments from 1 to 8 with granulate surface; segment 1 approximately 1.5 times as long as wide; segment 2 considerably narrower and shorter than segment 1, slightly longer than wide, barely wider than following segments; segment 3 slightly longer than wide; segment 4 slightly longer than segment 3; other segments of flagellum still longer, longest of these being segment 7, twice as long as wide; segment 9 as long or slightly shorter and no wider or barely wider than segment 7; segment 10 shorter and slightly wider than segment 9; segment 11 barely wider than segment 10, barely shorter than segments 9 and 10 together.

Pronotum (both length and width 0.53–0.54 mm) impunctate. All sulci well pronounced; medial sulcus not dilated, less than half as wide as interval between it and next sulcus at middle of pronotum.

Elytra (length 0.68–0.71, width 0.81–0.86 mm) with dense, very shallow, small punctures. Discal groove perceptible only in anterior half of elytron.

**Male.** Palpus unmodified. Tergite 4 with tubercle-like protrusion at base, posterior margin of protrusion (in lateral view) bearing tuft of long hairs. Sternites 2–5 barely flattened medially; sternite 6 basally with small weak impression. Protrochanter unmodified. Mesotrochanter with minute denticle basally on ventral margin. Mesotibia without distinct apical tooth. Metatrochanter basally on ventral margin with rather thick spine, curved anteriorly at very apex. Aedeagus as in Fig. 13, length 0.41–0.42 mm.

**DIAGNOSIS.** This species is distinguished by the smallest size, the relatively thick antennae with granulate segments 1–8, and by the absence of apical spine on male mesotibiae.

*Intestinarius crassicornis* Kurbatov, sp.n.

Fig. 14, 22.

**MATERIAL.** Holotype male: Laos, Bolikhamxai prov., km 15 rd. no. 8 from intersection with rd. no. 13, ca. 200 m, litter, 24.X.2003, leg. S. Kurbatov (ZMUM). Paratypes: 4 females, same locality as holotype (ZMUM, PCSK).

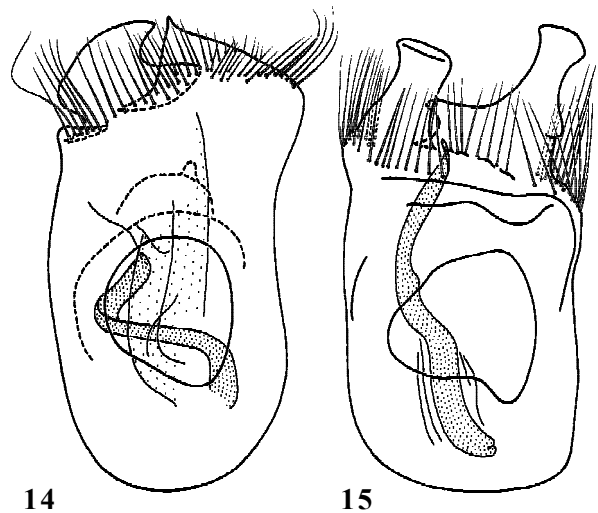
**DESCRIPTION.** Body length 2.5–2.7 mm. Pubescence of medium length, oblique (average length of hairs on elytra around 0.1 mm).

Head (length 0.56–0.57, width with eyes 0.47–0.51 mm) smooth, impunctate. Frontal lobe width 0.34–0.37 mm, its sides parallel behind lateral denticle. Vertex between vertexal sulci flat, as in *I. kuzmini*. Vertexal sulci weakly, but distinctly diverging anteriorly. Lateral carinae well-developed, long, reaching very near lateral incisions of frontal lobe. Antennae moderately elongate, more or less as in preceding species, relatively thick; all segments from 1 to 8 with granulate surface; segment 1 approximately 1.5 times as long as wide, segment 2 considerably narrower than segment 1, slightly longer than wide; segment 3 longer than wide, barely shorter and not narrower or barely narrower than segment 2; segment 4 not longer or barely longer than segment 3; following segments of flagellum longer, longest of these being segment 7, only twice as long as wide or still shorter; segment 9 as long as segment 7, as wide or slightly wider; segment 10 slightly shorter and slightly wider than segment 9; segment 11 slightly wider than segment 10, shorter than segments 9 and 10 together.

Pronotum (length 0.58–0.59, width 0.53–0.57 mm) impunctate, all sulci distinct; medial sulcus not dilated, less than half as wide as interval between it and next sulcus at middle of pronotum.

Elytra (length 0.76–0.85, width 0.88–0.95 mm) with dense, small, very shallow punctures. Discal sulcus distinct, almost reaching middle of elytron.

**Male.** Palpus unmodified. Basal half of tergite 4 with rather large longitudinal protuberance, its posterior surface (in lateral view) bearing tuft of hairs directed posteriorly; transverse impression present immediately behind protuberance, posterior margin of impression with fine tuft of hairs directed upwards; both tufts apically in contact with each



Figs. 14–15. Aedeagi of *Intestinarius* species, dorsal view: 14 — *crassicornis*, 15 — *ingeniosus*.

Рис. 14–15. Эдеагусы видов рода *Intestinarius*, дорсально: 14 — *crassicornis*, 15 — *ingeniosus*.

other. Abdominal sternites barely flattened medially. Pro- and mesotrochanter unmodified. Mesotibia with short apical tooth shorter than mesotarsal segment 1. Mesotrochanter basally on ventral margin with short flattened apophysis slightly curved anteriorly at apex. Aedeagus as in Fig. 14, length 0.42 mm.

**DIAGNOSIS.** The new species is distinguished by the relatively thick antennae with granulate segments 1–8 and by male secondary sexual characters, namely: the unmodified mesotrochanters and the shape of abdominal tergite 4.

*Intestinarius ingeniosus* Kurbatov, sp.n.

Figs 15, 23.

**MATERIAL.** Holotype ♂: NO Sarawak, Lambir Hills NP, ca. 100 m, litter, 12.X.2001, leg. S. Kurbatov (ZMUM). Paratype: 1 ♀, same locality as holotype (PCSK).

**DESCRIPTION.** Body length 2.8–2.9 mm. Pubescence of medium length (length of hairs on elytra 0.10–0.11 mm).

Head (length 0.61–0.62, width with eyes 0.56–0.59 mm) impunctate, frontal impression and sides of posterior half of head with microtubercles. Frontal lobe width 0.38–0.39 mm; its sides slightly sinuate behind denticle, then slightly, but distinctly dilating posteriorly. Vertex between vertexal sulci flat, slightly raised. Vertexal sulci parallel along most of their length and diverging only near frontal impression. Lateral longitudinal carinae absent. Antennae elongate, with segments 1–8 smooth, without granulation; scapus 1.5 times as long as wide; segment 2 considerably narrower, 1.5 times as long as wide; segment 3 slightly narrower and barely longer than segment 2; segment 4 as segment 3, and following segments longer, longest of these being segment 7, almost 2.5 times as long as wide, as long as segment 5 and barely longer than segment 6 or 8; segment 9 as segment 7, but barely wider; segment 10 slightly shorter and wider than segment 9; segment 11 slightly wider than segment 10 and slightly shorter than segments 9 and 10 together.

Pronotum (length and width 0.61–0.64 mm) with microtubercles at lateral margin. Medial sulcus narrow, at middle of pronotum less than 1/3 as wide as interval between it and next sulcus.

Elytra (length 0.80–0.88, width 0.93–0.96 mm) with dense, small, and very shallow punctures. Discal sulcus not very distinct, covering 1/3 of elytral length.

Male. Palpus unmodified. Posterior margin of tergite 3 with bidentate protrusion. Very base of tergite 4 impressed, and central part of this tergite raised as conical tubercle; anterior surface of this tubercle with weak longitudinal carina descending anteriorly into this impression. Medial portion of sternites (from posterior margin of sternite 2 to base of sternite 6) with common impression bearing dense hairs laterally; posterior 2/3 of sternite 6 with other impression, separated from that impression. Protrochanter unmodified. Mesotrochanter with small denticle on ventral margin. Mesotibia with very small apical denticle on anterior margin; posterior margin of mesotibia with tooth-like protrusion at level of distal 2/5 (tibia concave proximally of tooth and straight distally). Metatrochanter unmodified. Mesofemur thickened (in female also), not narrower than profemur, with semicircular carina-like protrusion basally on interior margin, this protrusion covering around 1/4 of femur length. Aedeagus as in Fig. 15, length 0.47 mm.

**DIAGNOSIS.** The new species is distinguished by the thickened metafemora in both sexes, the peculiar shape of male abdominal tergites 3 and 4 and male mesotibia, as well as by the presence of secondary sexual characters on the interior margin of metafemur.

*Intestinarius pexatus* Kurbatov, sp.n.

Figs 16, 24.

**MATERIAL.** Holotype ♂: NO Sarawak, Bario, ca. 1300 m, litter, 8.X.2001, leg. S. Kurbatov (ZMUM). Paratypes: 1 ♂, same locality as holotype; 1 ♂, same locality, but 1200 m, rotten wood, 3.X.2001 (PCSK).

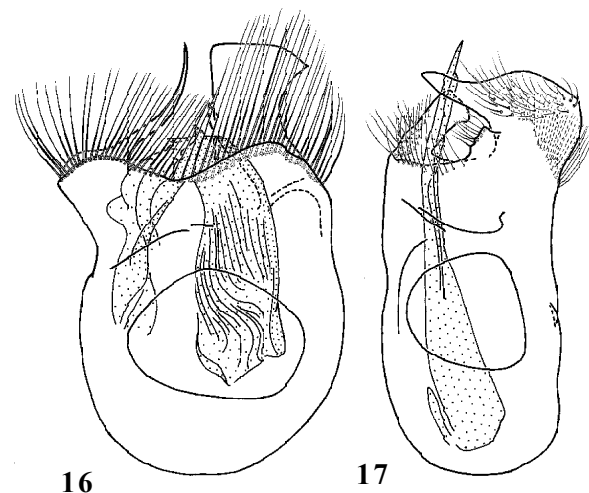
**DESCRIPTION.** Body length 2.35–2.45 mm. Pubescence long (average length of hairs on elytra 0.14–0.15 mm).

Head (length 0.56–0.58, width with eyes 0.51–0.56 mm) with rather numerous microtubercles, especially on frontal impression and laterally on posterior half of head. Frontal lobe width 0.36–0.38 mm, its sides in posterior half (behind lateral denticle) distinctly sinuate. Vertexal sulci slightly, but distinctly diverging anteriorly along entire length. Vertex between sulci flat, not raised. Lateral carinae absent. Antennae elongate; antennal segments 1–8 without granulations, smooth; scapus more than 1.5 times as long as wide; segment 2 considerably narrower, approximately 1.5 times as long as wide; segment 3 slightly narrower and not longer or slightly longer than segment 2; segment 4 not wider, but slightly longer than segment 3; following segments of flagellum still longer, longest of these being segment 7, 2.5 times (or even more) as long as wide; segment 9 as long as segment 7, but slightly wider; segment 10 as long or barely shorter and slightly wider than segment 9; segment 11 wider than preceding segments, as long as or slightly shorter than segments 9 and 10 together.

Pronotum (length 0.58–0.60, width 0.55–0.57 mm) with microtubercles, especially laterally and between lateral and intermediate sulci. All sulci narrow; medial sulcus at middle of pronotum less than 1/3 as wide as interval between it and next sulcus.

Elytra (length 0.76–0.80, width 0.84–0.86 mm) with dense, very shallow punctures. Discal sulcus indistinct, perceptible until level of anterior third of elytron.

Male. Palpus unmodified. Abdominal tergites unmodified. Apical 2/3 of sternite 6 with large transverse impression and protuberance-like raisings at sides of it; base of this sternite with considerably less pronounced transverse impression. Protrochanter with long spine basally on ventral surface. Mesotrochanter basally on ventral surface with long spine curved downwards. Mesotibia anteriorly with small, flat apical denti-



Figs. 16–17. Aedeagi of *Intestinarius* species, dorsal view: 16 — *pexatus*, 17 — *diatretus*.

Рис. 16–17. Эдеагусы видов рода *Intestinarius*, дорсально: 16 — *pexatus*, 17 — *diatretus*.

cle shorter than tarsal segment 1. Metatrochanter unmodified. Aedeagus as in Fig. 16, length 0.43–0.47 mm.

DIAGNOSIS. The new species is distinguished by the long pubescence, as well as by the shape of male sternite 6 and by the absence of secondary sexual characters on male abdominal tergites.

*Intestinarius diatretus* Kurbatov, **sp.n.**  
Figs 17, 25.

MATERIAL. Holotype ♂: NO Sarawak, Bario, 1300 m, litter, 8.X.2001, leg. S. Kurbatov (ZMUM).

DESCRIPTION. Body length 2.9 mm. Pubescence rather long (length of hairs on elytra around 0.13 mm).

Head (length 0.66, width with eyes 0.56 mm) with microtubercles on frontal impression and less pronounced, but larger tubercles laterally on posterior half of head. Frontal lobe width 0.38 mm, its sides in posterior half (behind lateral denticle) distinctly sinuate. Vertexal sulci almost parallel, very weakly diverging anteriorly along entire length. Vertex between sulci flat, not raised. Lateral carinae absent. Antennae elongate; antennal segments 1–8 without granulation, smooth; scapus 1.5 times (or even somewhat more) as long as wide; segment 2 considerably narrower, less than 1.5 times as long as wide; segment 3 as long as segment 2, but slightly narrower; segment 4 no longer or barely longer than segment 3; following segments of flagellum still longer, longest of these being segment 7, approximately 2.5 times as long as wide; segment 9 as long as segment 7, but slightly wider; segment 10 slightly shorter and slightly wider than segment 9; segment 11 wider than preceding segments, slightly shorter than segments 9 and 10 together.

Pronotum (length 0.63, width 0.61 mm) smooth, impunctate, only with some microtubercles near lateral fovea. Longitudinal sulci narrow; medial sulcus less than 1/3 as wide as interval between it and next sulcus.

Elytra (length 0.90, width 1.02 mm) with dense, very shallow punctures. Discal sulcus nearly reaching middle of elytron.

**Male.** Palpus unmodified. Tergite 3 medially with flattening, surface of flattening granulate. Tergite 4 near base with transverse raising having carina-like apex; bare, non-pubescent (unlike rest of segment's surface) anterior wall of raising almost abruptly descending to base of tergite. Abdominal sternites from posterior margin of sternite 2 to sternite 5 with common medial flattening; sternite 6 slightly impressed basally. Protrochanter unmodified. Mesotrochanter on ventral margin with flat tooth curved anteriorly. Mesotibia interiorly with poorly visible apical denticle considerably shorter than tarsal segment 1. Metatrochanter unmodified. Metafemur strongly modified: posterior surface of femur clearly sinuate basally; dorsal surface of femur before middle with small protuberance protruding backwards; this protuberance with long, quite flat semitransparent plate of complicated shape directed backwards along surface of femur; apex of this plate pointed, reaching ventral margin of femur; ventral margin of femur basally carinate and medially angulate and with tuft of hairs. Aedeagus as in Fig. 17, length 0.56 mm.

DIAGNOSIS. The new species is distinguished by male secondary sexual characters, namely: the shape of abdominal tergite 4 and the complicated shape of metafemur.

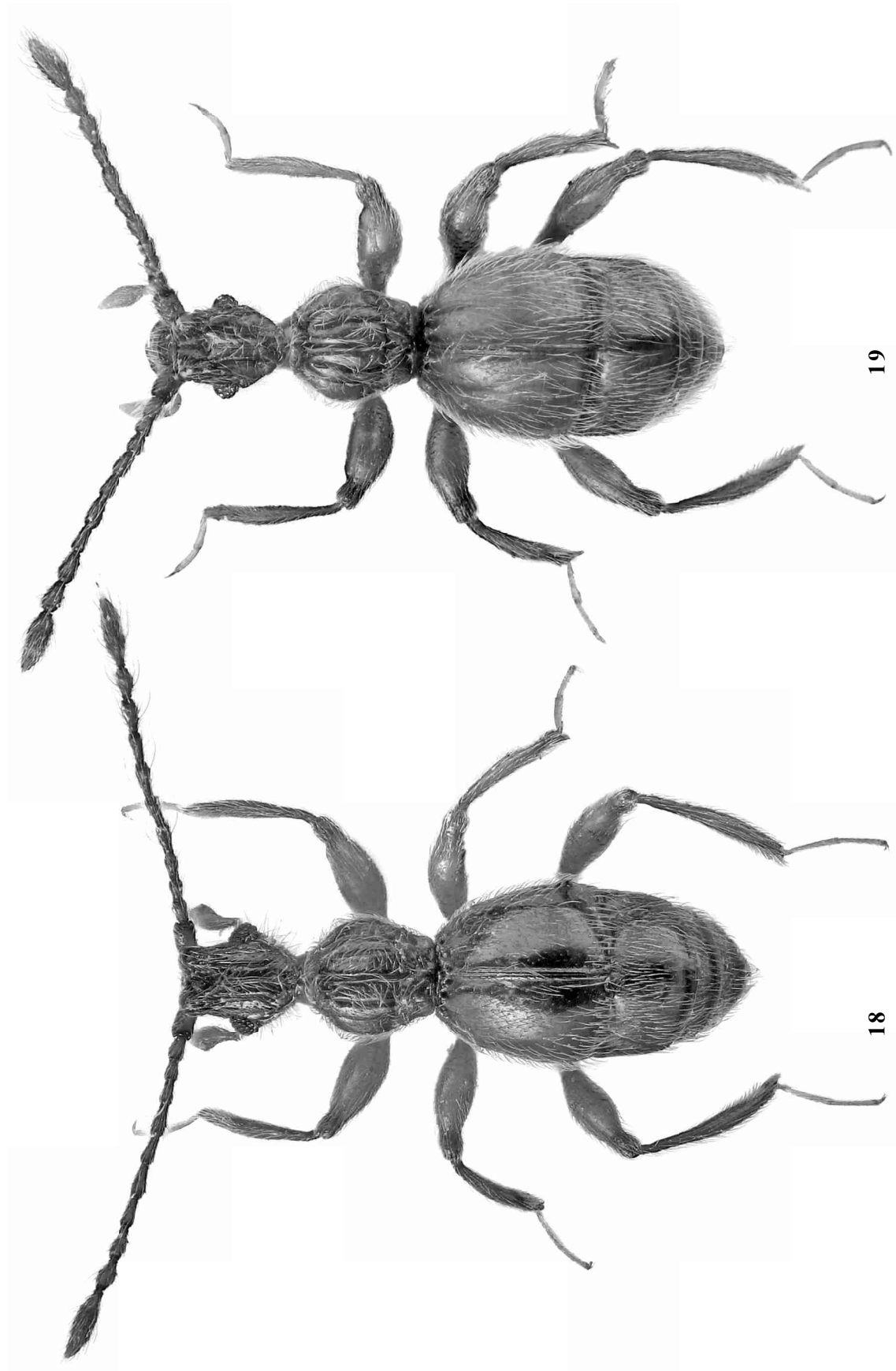
KEY TO SPECIES OF THE GENUS *INTESTINARIUS*

1. Vertex between vertexal sulci flattened, slightly convex in lateral view ..... 2
- Vertex between vertexal sulci very convex, gibbous in lateral view ..... *distorticeps* Kurbatov

2. Head with fine longitudinal carina lateral of vertexal sulcus on each side. Male: metatrochanter with apophysis on ventral margin ..... 3
- Lateral longitudinal carinae absent. Male: metatrochanter unmodified ..... 6
3. Antennae more elongate, with segment 3 more than 1.5 times as long as wide and segments 1–8 smooth and shiny. Male: exterior margin of segment 4 of maxillary palpus sinuate at base ..... *quinquesulcatus* (Raffray)
- Antennae more robust, with segment 3 slightly longer than wide and at least segments 1–8 with granulate surface, matt. Male: segment 4 of maxillary palpus unmodified ..... 4
4. Medial sulcus of pronotum not dilated, at middle of pronotum less than half as wide as interval between it and next sulcus. Antennal segments 1–8 with surface granulate, matt. Male: abdominal tergite 4 with medial tubercle; apical denticle of mesotibia shorter than segment 1 of mesotarsus ..... 5
- Medial sulcus of pronotum dilated, at middle of pronotum no less than half as wide as interval between it and next sulcus. Antennal segments 4–8 with surface shiny, almost without granulation, unlike granulate, matt segments 1–2. Male: abdominal tergite 4 without medial tubercle; apical denticle of mesotibia large, longer than segment 1 of mesotarsus ..... *kuzmini* Kurbatov
5. Pubescence short, length of hairs on elytra 0.07–0.08 mm. Male: tubercle on tergite 4 angulately protruding backwards; tergite without impressions behind tubercle; apical denticle of mesotibia practically imperceptible. Body length 2.25–2.4 mm ..... *orthopygium* Kurbatov
- Pubescence of medium length, length of hairs on elytra around 0.1 mm. Male: tubercle on tergite 4 rectangularly protruding backwards; tergite with smooth transverse impression behind tubercle; apical denticle of mesotibia practically distinct, only slightly shorter than segment 1 of mesotarsus. Body length 2.5–2.7 mm ..... *crassicornis* Kurbatov
6. Male: abdominal tergites unmodified; protochanter with long spine; metafemora unmodified. Body length 2.35–2.45 mm ..... *pexatus* Kurbatov
- Male: at least abdominal tergite 4 unmodified; protochanter without spines; metafemora with secondary sexual characters. Body length 2.8–2.9 mm ..... 7
7. Male: posterior margin of tergite 3 protruding backwards in two denticles; metafemur basally on ventral margin with semicircular carinate protuberance ... *ingeniosus* Kurbatov
- Male: tergite 3 with medial flattening, this flattening with granulate surface; Metafemur of complicated shape: in basal half of posterior portion strongly sinuate, medially on dorsal surface with tubercle bearing long semitransparent plate of complicated shape, and with angulate middle of ventral surface bearing tuft of hairs ..... *diatretus* Kurbatov

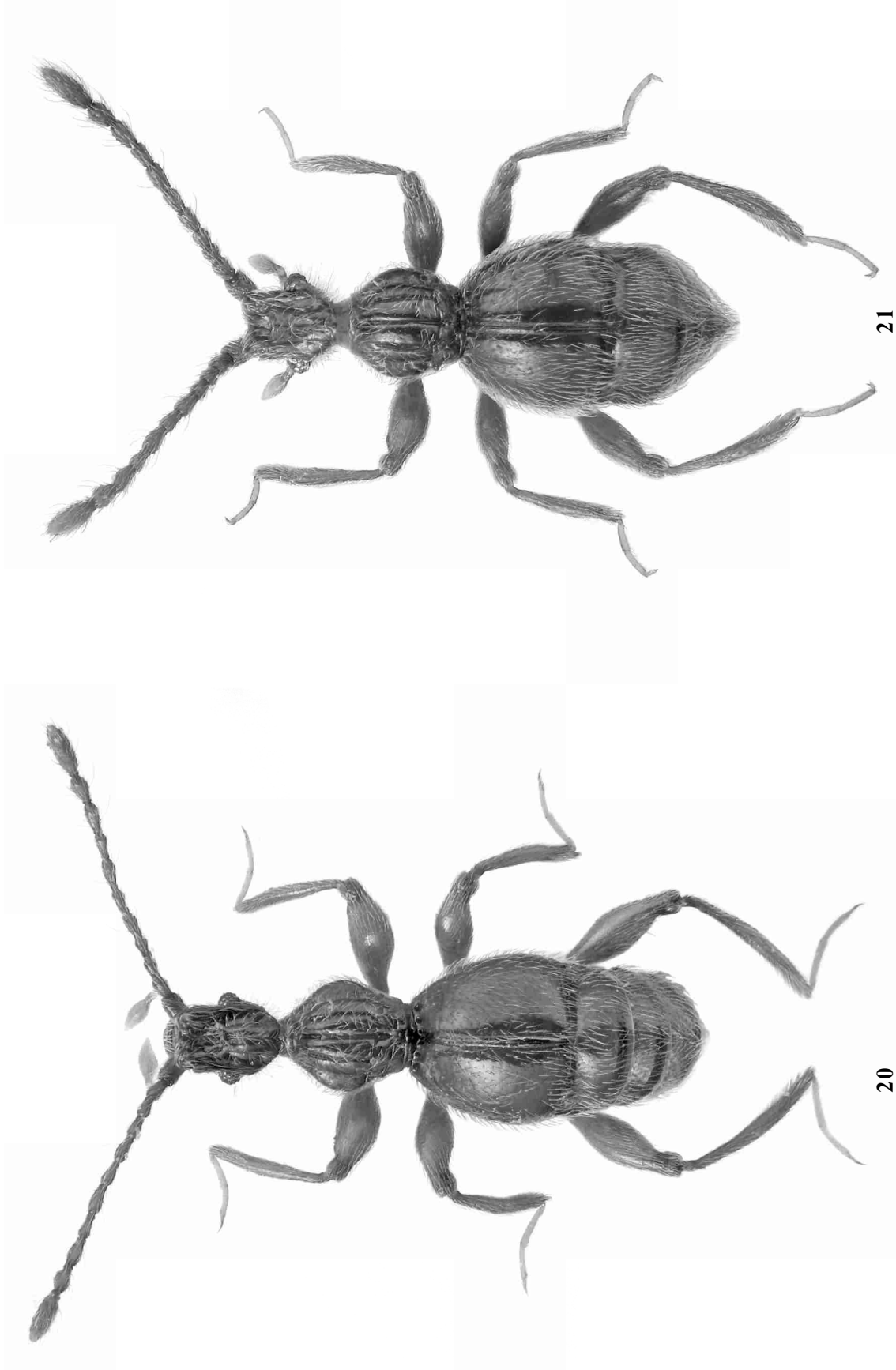
The structure of the supertribe Batrisitae, as we noted above, is insufficiently developed. Moreover, not a single autapomorphy of this supertribe has been found so far. The well-known character of the incision (dorsal and ventral) of the apex of antennal segment 1 can hardly be considered apomorphic, because it has much wider distribution among pselaphines (see, e.g., the similar state of this character in members of Proterini *sensu* Cucodoro & Kurbatov, 2007 or in the group of genera *Morana*–*Nipponobythus*), as well as because of the difficulties of interpreting the states of this character.

In the course of our studies, we found a character, the apomorphic state of which is probably characteris-



Figs 18–19. *Intestiniarius* spp., habitus: 18 — *I. quinquesulcatus*; 19 — *I. kuzmini*.  
Рис. 18–19. *Intestiniarius* spp., внешний вид: 18 — *I. quinquesulcatus*; 19 — *I. kuzmini*.

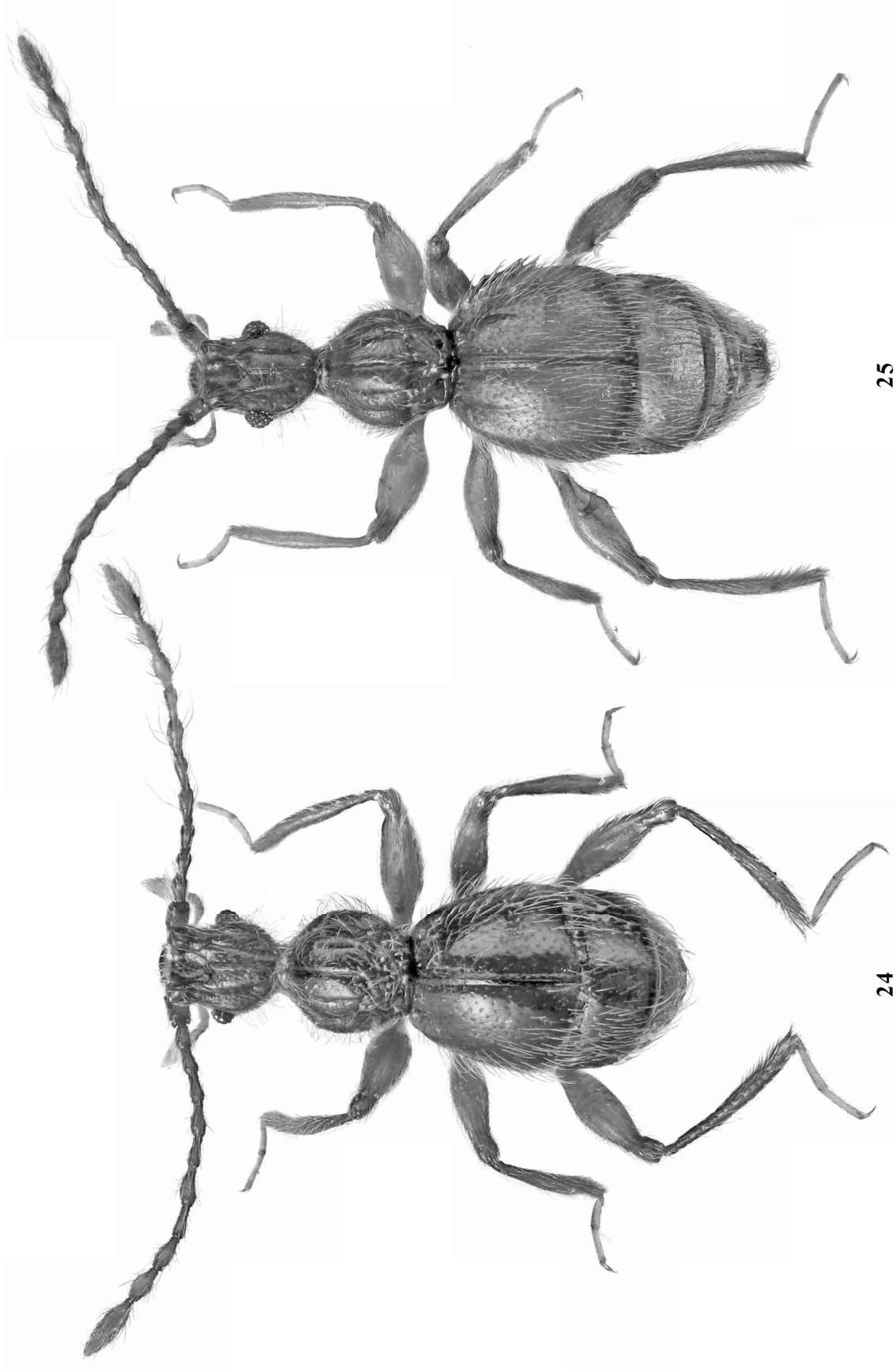




Figs 20–21. *Intestinarius* spp., habitus: 20 — *I. distorticeps*; 21 — *I. orthopygium*.  
Рис. 20–21. *Intestinarius* spp., внешний вид: 20 — *I. distorticeps*; 21 — *I. orthopygium*.



Figs 22–23. *Intestinarius* spp., habitus: 22 — *I. crassicornis*; 23 — *I. ingentosus*.  
Рис. 22–23. *Intestinarius* spp., внешний вид: 22 — *I. crassicornis*; 23 — *I. ingentosus*.



Figs 24–25. *Intestinarius* spp., habitus: 24 — *I. pexatus*; 25 — *I. diatretus*.  
Рис. 24–25. *Intestinarius* spp., внешний вид: 24 — *I. pexatus*; 25 — *I. diatretus*.

tic only of the members of Batrisitae. This character is the presence of four large specialized setae, situated next to each other medially on the anterior margin (the epipharynx) of labrum. The presence of a series of four setae on the labrum of the Japanese Batrisitae, close to the genus *Batrisoplisus*, was observed by Nomura [1991, p. 9], yet he did not pay special attention to this character, because, according to his data, in this group only two such setae are present in members of two genera, *Batrisoplisus* and *Physomerinus*, whereas both character states occur in the outgroups. We studied this character in both sexes of species from 27 genera of the supertribe, including *Batrisoplisus* and *Physomerinus*, and observed the constancy of its modality among Batrisitae. A checklist of all the Batrisitae in which this character was examined is given below. This checklist shows our effort to provide maximum scope of taxonomic and geographic representation of the group.

*Acanthicomus spinicollis* (Jeann.) (Tanzania), *Ambicocerus kaszabi* Leleup (Ghana), *Arthmius sabomba* Park (Panama), *Atheropterus* sp. (Natal), *Batriasymmodes cavivrus* (Casey) (North Carolina), *Batribolbus palpator* Raffr. (Ceylon), *Batrisaulax jeanneli* Leleup (Tanzania), *Batrisiella micromela* (Jeann.) (S Vietnam), *Batrisodes globosus* LeC. (Oklahoma), *Batrisomalus microphthalmus* Raffr. (Ceylon), *Batrisoplisus raffrayi* Jeann. (Japan), *Batrisopsis myrmecophila* Raffr. (Singapore), *Batrisus sibiricus* Sharp (S Primorye), *Bergrothia saulcyi* (Reitt.) (S Ossetia), *Coryphomodes* sp. (New South Wales), *Coryphomus adventus* Löbl & Kurb. (Ceylon), *Cratna ?cicatricosa* Raffr. (N Vietnam), *Hingstoniella* sp. (Nepal), *Intestinarius kuzmini* sp.n. (Yunnan), *I. orthopygium* sp.n. (Central Laos), *Mnia* nr. *mutator* Löbl (W Malaysia), *Mnia* sp. (N Vietnam), *Nesiotomina spinicollis* (Motsch.) (Ceylon), *Physomerinus* nr. *pedator* (Sharp) (S Vietnam), *Sathytes* sp. (Sichuan), *Syrbatus furcaticornis* Jeann. (Kenya), *Tribasodema factiosum* Löbl & Kurb. (Ceylon), *Tribasodes longicornis* (Sharp) (Japan), *Veddabatrax sexualis* Löbl & Kurb. (Ceylon) (Figs 6, 26–51).

We also studied this character in more than one hundred different genera of the other five supertribes of the pselaphines, and we invariably observed on the epipharynx of labrum only at most two specialized setae or entire absence of such setae. We illustrate this with drawings of the labrum of the following species (mostly from Euplectitae, Goniaceritae, and Pselaphitae, because the monophyly of these taxa, especially the former two, is by no means evident):

Faronitae: *Faronus siculus* Fiori (Sicily); Euplectitae: *Octomicrus longulus* Schauf. (S Vietnam), *Megalocarpus mirus* Coulon (S India), *Rhexidius granulatus* Casey (California), *Tiliactus properus* Kurb. (Russian Far East), *Morius occidentens* Casey (California), *Pteracmidius bicaudatus* Jeann. (Chile), *Philoscotus rostralis* Nomura (Japan), *Sebaga notonoda* Park (Panama), *Metopiellus hirtus* Reitt. (Brasil); Goniaceritae: *Proterus elenae* Cucc. & Kurb. (Sumatra), *Dalmoburis petrunkevitchi* Park (Costa Rica), *Goniacerus gibbus* Motsch. (Panama), *Euphalepsus* sp. (Belize), *Harmophorus* sp. (S Yunnan), *Batraxis splendida* Nomura (S Korea), *Takaorites torticornis* Jeann. (Japan), *Pygoxyon bythiniforme* Reitt. (NW Caucasus), *Bryaxis koltzei* (Reitt.) (Russian Far East), *Tycho striola* Guillb. (France); *Prespelea quirsfeldi* Park (New Carolina); Pselaphitae: *Caccoplectus probus* Chandler (Guiana), *Palimboldus robusticornis* Wilson (SE Australia), *Odontalgus coreanus* Löbl (N Vietnam), *Mestogaster barbieri* Jeann. (S Vietnam), *Phalepsus* sp. (Peru), *Centrophthalmus sinensis* Raffr. (China, Guangxi), *Ctenisis raffrayi* Casey (Arizona), *Barrossellus* sp. (Tanzania), *Bellenden belousovi* Kurb. (Gansu); Clavigeritae: *Claviger testaceus* Preyssl. (Czechia) (Figs 52–82).

Thus, the presence of a series of four large setae on the epipharynx of labrum is very probably an autapomorphy of the supertribe Batrisitae, which supports the doubtless monophyly of this group. The state of this character in *Euphalepsus* Reitt. (Fig. 63) and *Phalepsoides* Raffray confirms the appropriateness of the recent exclusion of these genera from the supertribe Batrisitae by Chandler [1999, p. 171–172].

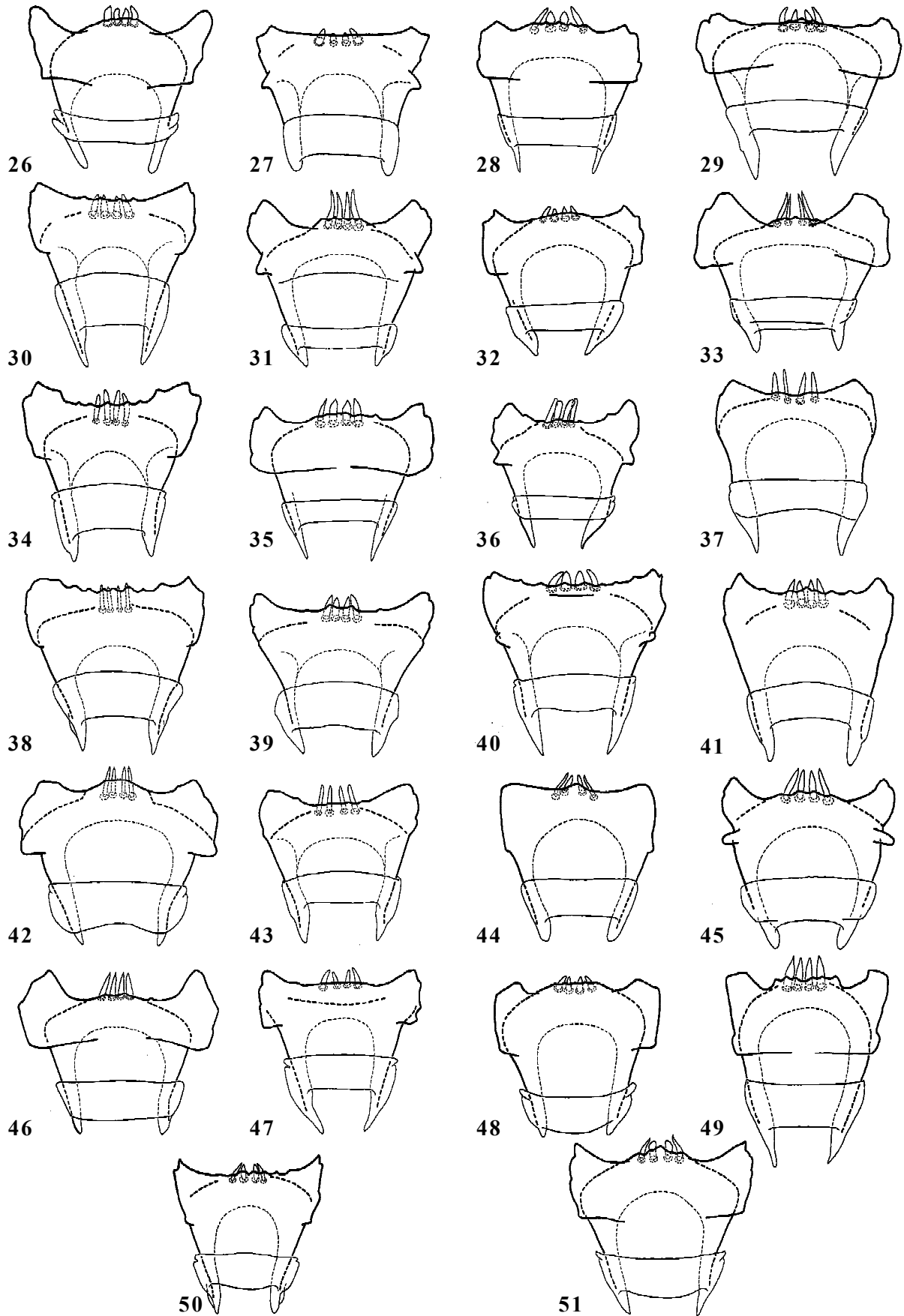
The discussed character is only seldom observed directly in intact dry specimens, because the anterior margin of labrum is usually covered by the closed mandibles; making microscopic preparations of mouthparts necessary for observing this character.

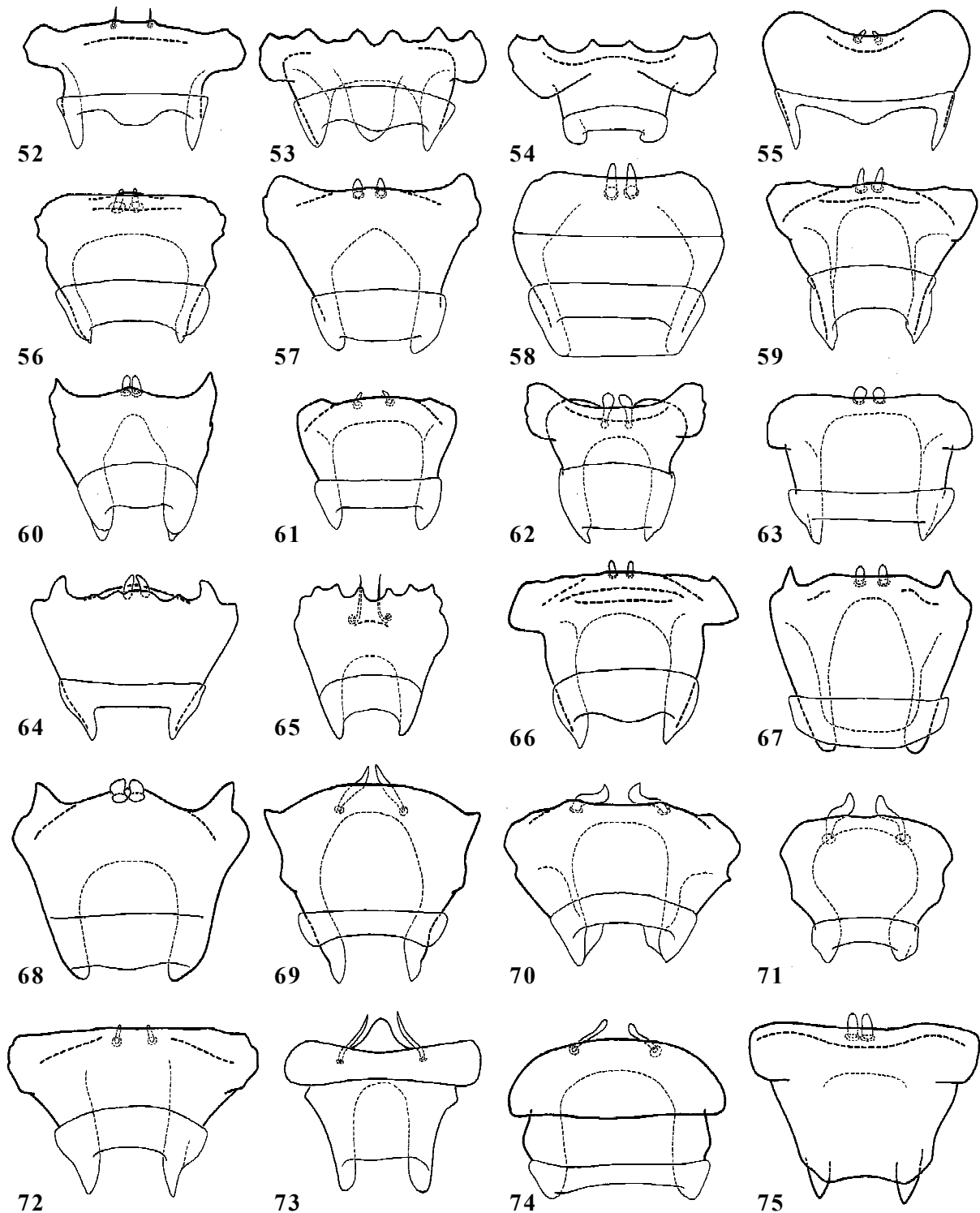
Finally, we would like to note that the extreme diversity of Batrisitae, comprising over 200 described genera with about 1700 species in the world fauna, still prevents us from being completely sure of the invariance of this character state among all the members of this group. We believe, notwithstanding, that the phylogenetic significance of this character is beyond doubt.

ACKNOWLEDGEMENTS. We thank to N. Berti (Muséum national d'histoire naturelle de Paris) for the loan of the type material of *Batrisodes quinquesulcatus* Raffr., to G. Cuccodoro (Muséum d'histoire naturelle de Genève) for the chance to study and make preparations of the species

Figs. 26–51. Labrum of Batrisitae: 26 — *Acanthicomus spinicollis*, 27 — *Ambicocerus kaszabi*, 28 — *Arthmius sabomba*, 29 — *Atheropterus* sp., 30 — *Batriasymmodes cavivrus*, 31 — *Batribolbus palpator*, 32 — *Batrisaulax jeanneli*, 33 — *Batrisiella micromela*, 34 — *Batrisodes globosus*, 35 — *Batrisomalus microphthalmus*, 36 — *Batrisoplisus raffrayi*, 37 — *Batrisopsis myrmecophila*, 38 — *Batrisus sibiricus*, 39 — *Bergrothia saulcyi*, 40 — *Coryphomodes* sp., 41 — *Coryphomus adventus*, 42 — *Cratna ?cicatricosa*, 43 — *Hingstoniella* sp., 44 — *Mnia* nr. *mutator*, 45 — *Nesiotomina spinicollis*, 46 — *Physomerinus* nr. *pedator*, 47 — *Sathytes* sp., 48 — *Syrbatus furcaticornis*, 49 — *Tribasodema factiosum*, 50 — *Tribasodes longicornis*, 51 — *Veddabatrax sexualis*.

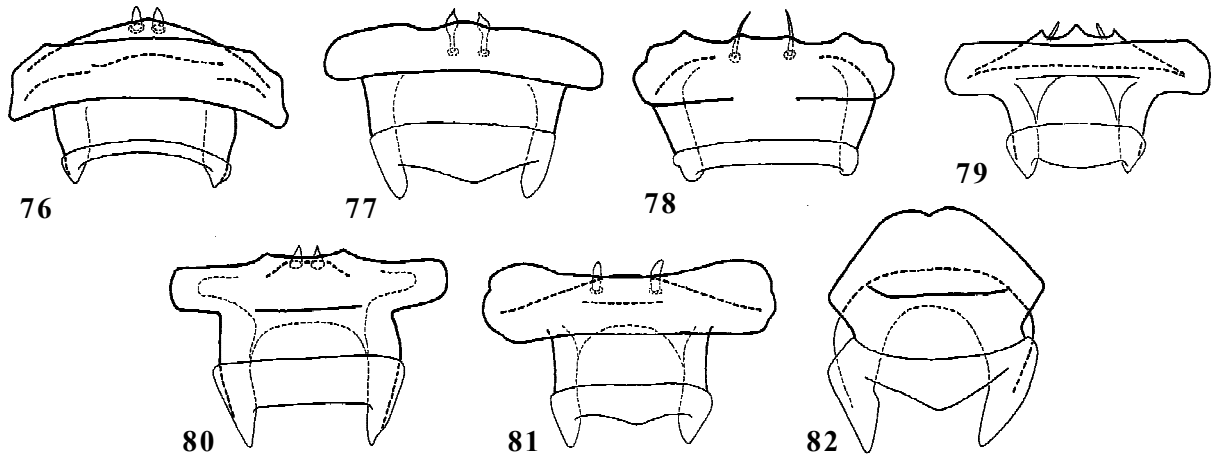
Рис. 26–51. Верхняя губа Batrisitae: 26 — *Acanthicomus spinicollis*, 27 — *Ambicocerus kaszabi*, 28 — *Arthmius sabomba*, 29 — *Atheropterus* sp., 30 — *Batriasymmodes cavivrus*, 31 — *Batribolbus palpator*, 32 — *Batrisaulax jeanneli*, 33 — *Batrisiella micromela*, 34 — *Batrisodes globosus*, 35 — *Batrisomalus microphthalmus*, 36 — *Batrisoplisus raffrayi*, 37 — *Batrisopsis myrmecophila*, 38 — *Batrisus sibiricus*, 39 — *Bergrothia saulcyi*, 40 — *Coryphomodes* sp., 41 — *Coryphomus adventus*, 42 — *Cratna ?cicatricosa*, 43 — *Hingstoniella* sp., 44 — *Mnia* nr. *mutator*, 45 — *Nesiotomina spinicollis*, 46 — *Physomerinus* nr. *pedator*, 47 — *Sathytes* sp., 48 — *Syrbatus furcaticornis*, 49 — *Tribasodema factiosum*, 50 — *Tribasodes longicornis*, 51 — *Veddabatrax sexualis*.





Figs. 52-75. Labrum of Pselaphinae: 52 — *Faronus siculus*, 53 — *Octomicrus longulus*, 54 — *Megalocarpus mirus*, 55 — *Sebaga notonoda*, 56 — *Rhexidius granulatus*, 57 — *Pteracmidius bicaudatus*, 58 — *Philoscotus rostralis*, 59 — *Morius occidentis*, 60 — *Metopiellus hirtus*, 61 — *Tiliactus properus*, 62 — *Proterus elenae*, 63 — *Euphalepsus* sp., 64 — *Batraxis splendida*, 65 — *Goniacerus gibbus*, 66 — *Pygoxyon bythiniforme*, 67 — *Takaorites torticornis*, 68 — *Dalmoburis petrunkevitchi*, 69 — *Harmopnorus* sp., 70 — *Tychus striola*, 71 — *Prespelea quirsfeldi*, 72 — *Bryaxis koltzei*, 73 — *Barrosellus* sp., 74 — *Phalepsus* sp., 75 — *Palimbolus robusticornis*.

Рис. 52-75. Верхняя губа Pselaphinae: 52 — *Faronus siculus*, 53 — *Octomicrus longulus*, 54 — *Megalocarpus mirus*, 55 — *Sebaga notonoda*, 56 — *Rhexidius granulatus*, 57 — *Pteracmidius bicaudatus*, 58 — *Philoscotus rostralis*, 59 — *Morius occidentis*, 60 — *Metopiellus hirtus*, 61 — *Tiliactus properus*, 62 — *Proterus elenae*, 63 — *Euphalepsus* sp., 64 — *Batraxis splendida*, 65 — *Goniacerus gibbus*, 66 — *Pygoxyon bythiniforme*, 67 — *Takaorites torticornis*, 68 — *Dalmoburis petrunkevitchi*, 69 — *Harmopnorus* sp., 70 — *Tychus striola*, 71 — *Prespelea quirsfeldi*, 72 — *Bryaxis koltzei*, 73 — *Barrosellus* sp., 74 — *Phalepsus* sp., 75 — *Palimbolus robusticornis*.



Figs. 76–82. Labrum of Pselaphinae: 76 — *Odontalgus coreanus*, 77 — *Centrophthalmus sinensis*, 78 — *Ctenisis raffrayi*, 79 — *Bellenden belousovi*, 80 — *Mestogaster barbieri*, 81 — *Caccoplectus probus*, 82 — *Claviger testaceus*.

Рис. 76–82. Верхняя губа Pselaphinae: 76 — *Odontalgus coreanus*, 77 — *Centrophthalmus sinensis*, 78 — *Ctenisis raffrayi*, 79 — *Bellenden belousovi*, 80 — *Mestogaster barbieri*, 81 — *Caccoplectus probus*, 82 — *Claviger testaceus*.

*Ambicocerus kaszabi* Leleup, *Batrisopsis myrmecophila* Raffr., *Megalocarpus mirus* Coulon, and *Metopiellus hirtus* Reitt., to K. Makarov (Moscow pedagogical university) for photography and computer processing of the image of all the eight studied species of the genus *Intestinarius*, and to D. S. Chandler (University of New Hampshire) for his comments in the course of this study. Special thanks are due to the author's friend Dmitry Kuzmin, who made possible the trip to Yunnan and in whose honour one of the new species described in this work is named. P. N. Petrov (Marburg, Germany) translated this work into English.

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