

Two new species of the genus *Bioramix* Bates, 1879 (Coleoptera: Tenebrionidae: Platyscelidini), from the Chinese Provinces Sichuan and Tibet

Два новых вида рода *Bioramix* Bates, 1879 (Coleoptera: Tenebrionidae: Platyscelidini) из провинций Сычуань и Тибет Китая

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Ключевые слова: Coleoptera, Tenebrionidae, Platyscelidini, *Bioramix*, новые виды, Китай, Сычуань, Тибет.

Abstract. Two new species of the genus *Bioramix* Bates, 1879 are described from China: *Bioramix igori* sp. n. (Tibet – Xizang Autonomous Region) and *Bioramix hongyuanensis* sp. n. (Sichuan). Both species are included in the subgenus *Leipopleura* Seidlitz, 1893 and close to *B. reinigi* (Kaszab, 1940), *B. crypticoides* (Reitter, 1887) and *B. nagquana* Meng et Ren, 2005.

Резюме. В статье описываются 2 новых вида рода *Bioramix* Bates, 1879 из Китая: *Bioramix igori* sp. n. (провинция Тибет) и *Bioramix hongyuanensis* sp. n. (провинция Сычуань). Оба вида включены в подрод *Leipopleura* Seidlitz, 1893 и наиболее близки к *B. reinigi* (Kaszab, 1940), *B. crypticoides* (Reitter, 1887) и *B. nagquana* Meng et Ren, 2005.

Introduction

The genus *Bioramix* Bates, 1879 consists of 113 species (status of 2 species is unclear), and it is subdivided into 13 subgenera. The genus occurs in the mountains of Middle and Central Asia (except Eastern Tien Shan Mountains), the Himalayas, some provinces of China (Sichuan, Shaanxi), all Northern and Central Mongolia (except desert regions), Southern Siberia from Altai Mountains to Transbaikal [Egorov, 2009]. More than 20 species are distributed in China [Kaszab, 1940; Egorov, 2004, 2006a, b, c]. The subgenus *Leipopleura* was erected by Seidlitz [1893] for 6 species. Kaszab [1940] included 8 species in the subgenus. Egorov [1990] clarified its composition and his revision resulted in 12 species of *Leipopleura*. *Myatis nagquana* and *M. brevipilosum* [Meng, Ren, 2005], which were described later, should also be included in the subgenus *Leipopleura* [Egorov, 2006a]. *M. brevipilosum* Meng et Ren, 2005 is synonym of *Bioramix* (*Leipopleura*) *micans* (Reitter, 1889) [Egorov, 2006a]. Thus, the subgenus *Leipopleura*

now includes 13 species divided into two weakly distinct morphological groups that inhabit the Himalayas and the eastern part of Tibet (8 species) and Nanshan (4 species). The other species *B. picipes* (Gebler, 1833) belonging to the second group spread far to the north-west and inhabits Mongolia (northern and central semi-arid areas) and south of Siberia.

Two new species of the genus *Bioramix* from Tibet and Sichuan (China) are described in the paper. *B. igori* sp. n. and *B. hongyuanensis* sp. n. belong to *Leipopleura* and exhibit characters typical to the subgenus: prosternal process completely rounded; male abdomen without concentration of hairs in middle of ventrites; protibiae depressed from below and their outer margin sharp, blade-shaped; male pro- and mesotarsi widened, dense plantar pubescence present on first four tarsomeres. Both species are close (based on description) to the group of *B. reinigi* (Kaszab, 1940), *B. crypticoides* (Reitter, 1887), *B. nagquana* Meng et Ren, 2005, but differ by structure of the aedeagus.

Material and methods

The types of new species are deposited in the Museum of China West Normal University (MCWNU) (Nanchong, China) and Zoological Institute of Russian Academy of Sciences (ZIN) (St.-Petersburg, Russia).

In the morphological descriptions the following measurements were taken (by means of binocular-micrometer): 1) length of the antennomeres without joint parts and their maximum width; 2) length of pronotum along midline between anterior and posterior margin; 3) maximum width of pronotum; 4) length of elytra along suture from base to apex; 5) maximum width of elytra; 6) maximum width of tibia on apex; 7) maximum width of male tarsi; 8) maximum width and length of parameres (taken in dorsal view along middle groove) 9) length of phallobase (taken in lateral view) and general length of the aedeagus from apex of parameres to base of phallobase; 10) general length of the body from base of mandibles to apex of elytra (taken in lateral view). Density of punctuation is characterized as follows: 1) dense punctuation – distance

between punctures less than their diameter; 2) moderately dense – distance between punctures less than or equal to their diameter; 3) sparse punctuation – distance between punctures exceeding their diameter.

Bioramix (Leipopleura) igori Li et L. Egorov, **sp. n.**
(Fig. 1–14, 30, 31, 34)

Material. Holotype, ♂ and paratypes (63♂, 44♀) with label: "CHINA: Tibet, Qamdo County, 3506 m, N 31°07.985' E 097°09.778', 21 July 2010, Ai-Min Shi and Yong-Sheng Pan leg.". First label of the holotype (written with Chinese characters) see fig. 34. Holotype and 103 paratypes (61♂, 42♀) in MCWNU, 4 paratypes (2♂, 2♀) in ZIN.

Description. Male. Body black; antennae, legs and palps brown; surface feebly shining. Head broad, anterior margin of clypeus straight, fronto-clypeal suture slightly obscure; most of genae densely punctate, covered with recumbent hairs. Dorsal surface of head convex. Punctuation of head fine, dense or moderately dense. Eyes transverse, with shallow emargination at anterior margin. Antennae, when posteriorly extended, reaching pronotal base. Length (width) ratio of 2nd to 11th antennomeres 16.4(13.4) : 28.2(13.6) : 18.8(13.6) : 19.2(13) : 19.2(13.2) : 19.2(13) : 19(15.6) : 17(15.6) : 16.4(16.6) : 24.8(16.2) (n = 5).

Pronotum transverse, 1.57–1.68 (1.65 on average, n = 5) times as wide as long, widest at base, 1.83–1.94 (1.89 on average, n = 5) times as wide as head. Ratio of pronotal width at anterior margin and base (n = 5) 61 : 100 on average. Outer margin of pronotum shallowly sinuate in middle, weakly converging anteriorly in basal 1/2, more abruptly converging anteriorly in anterior 1/3, finely bordered along entire length. Anterior margin slightly sinuate, finely bordered laterally; basal margin arcuate, weakly sinuate in the middle, not bordered. Anterior angles obtuse, rounded apically; posterior angles weakly obtuse. Pronotal surface between outer margins convex, punctures larger than those on head, finer at disc than laterally. Intercostal process sharply sloping behind procoxae, no prominence. Prothoracic hypomeron concave with obviously longitudinal wrinkles.

Elytra elongate-oval, 1.34–1.44 (1.39 on average, n = 5) times as long as wide, widest at base, 1.08–1.23 (1.18 on average, n = 5) times as wide as pronotum. Epipleural carina not reaching sutural angle, outer margin visible dorsally only at base. Elytral surface between outer side of epipleura and sutural margin convex, with shallow punctures and irregular fine wrinkles. Epipleural surface densely covered with fine wrinkles. Lateral carina of elytra (outer margin of pseudepipleura) visible in dorsal view only anteriorly, explanate on humeri, merging with epipleura, not reaching sutural angle. Mesoventrite with rather sparse recumbent hairs; surface finely granulate and wrinkles. Abdominal ventrites with yellow hairs; intercoxal process of abdomen rounded apically. Base of ventrite 5 at middle with shallowly depressed, impunctate semicircular area, apical margin widely rounded.

Legs strong, length (width) ratio of pro-, meso- and metafemora 68.8(24.4) : 74.2(22.2) : 87.2(22.4) (n = 5); that of corresponding tibiae 67.4(21.4) : 64.2(17.4) : 88.4(18) (n = 5). Protibiae gradually widening toward apex; apical margin not extended, underside shallowly concave; 3.05–3.45 (3.3 on average, n = 5) times as long as wide at apex. Inner apical surface of protibiae with small spur and dense yellow hairs. Metatibiae weakly incurved. Plantar surface of pro- and mesotarsomeres 1 to 4 with hair brushes. Protarsomeres strongly widened. Width (length) ratio of 1 to 4 pro-, meso- and metatarsomeres are as follows: 8.4(7.6) : 17.6(11.6) : 17(9.4) : 11.6(5.2) (n = 5), 9.6(11.4) : 15.8(11.2) : 13.8(9.4) : 8.2(6.2) (n = 5) and 7.2(32.2) : 6.4(14) : 5.8(11) : 6(18) (n = 5).

Aedeagus: length 4.28 mm, width 0.87 mm. Parameres 1.23 mm long and 0.6 mm wide, widened in apical 1/5, S-curved in lateral view. Spiculum gastrale as in fig. 10. Apical margin of abdominal sternite 8 sinuate.

Length of body 9.87–10.29 mm, width 4.85–5.23 mm.

Female. Body longer and wider. Pronotum 1.95–1.97 (1.96 on average, n = 5) times as wide as head, 1.67–1.82 (1.75 on average, n = 5) times as long as head. Elytra 1.15–1.19 (1.17 on average, n = 5) times as wide as pronotum, 1.28–1.31 (1.29 on average, n = 5) times as long as wide. Ratio of pronotal width at anterior margin to its maximum width and width at base 90 : 146.7 (n = 5). Ovipositor dorsally with yellow hairs and a hair tuft (with 3–4 long hairs) near apical margin.

Length of body 10.18–10.56 mm, width 5.26–5.63 mm.

Diagnosis. This new species is close to *B. nagquana*, but distinctly differs by the structure of aedeagus and proportions of pro- and mesotarsomeres. The species also differs from the closely related *B. reinigi* and *B. crypticoides* in the structure of aedeagus, completely expressed (not shortened) lateral keel of elytra (outer margin of pseudepipleura).

Etymology. The species is named for Igor K. Lopatin – the renowned specialist of Asian Chrysomelidae.

Distribution. China: Tibet (Xizang Autonomous Region), Taniantaweng Shan.

Ecology. The beetles were taken from an environment with rocks around many shrubs.

Bioramix (Leipopleura) hongyuanensis Li et L. Egorov,
sp. n.
(Fig. 15–29, 32, 33, 35)

Material. Holotype, ♂ and paratypes (15♂, 16♀) with label: "CHINA: Sichuan, Hongyuan County, 3580 m, N 32°46.956', E 102°34.078', 25 July 2009, Ai-Min Shi and Yong-Fu Wang leg.". First label of the holotype (written with Chinese characters) see fig. 35. Holotype and 27 paratypes (13♂, 14♀) in MCWNU, 4 paratypes (2♂, 2♀) in ZIN.

Description. Male. Body black, surface feebly shining. Head broad, anterior margin of clypeus weakly and arcuately convex, clypeus suture slightly obscure. Most of genae densely punctate, covered with recumbent hairs. Dorsal surface of head convex. Punctuation of head fine, dense or moderately dense. Eyes transverse, with shallow emargination at anterior margin. Antennae, when posteriorly extended, with 2 apical segments extending beyond base of pronotum. Length (width) ratio of 2nd to 11th antennomeres 16.0(14.5) : 29(14) : 21(13) : 18.5(13) : 20(13) : 20.5(14) : 23(16) : 19(17) : 18.5(17) : 24(15.5) (n = 5).

Pronotum transverse, 1.34–1.48 (1.4 on average, n = 5) times as wide as long, widest before the middle, 1.84–1.92 (1.87 on average, n = 5) times as wide as head. Ratio of pronotal width at anterior margin to its maximum width and width at base (n = 10) 77 : 117.5 : 113.5 on average. Outer margins of pronotum arcuately convex, bordered along entire length. Anterior margin weakly emarginate, bordered laterally; basal margin weakly emarginate, not bordered. Anterior angles weakly obtuse; posterior ones nearly rectangular. Pronotal surface between outer margins convex. Punctuation on disc similar to that on frons, mainly dense, coarser and denser at sides. Prosternum with rather sparse hairs directed backwards and small granules. Intercostal process sharply sloping behind procoxae, no prominence. Prothoracic hypomeron with longitudinal wrinkles.

Elytra elongate oval, 1.22–1.26 (1.24 on average, n = 5) times as long as wide, widest at base, 1.47–1.48 (1.48 on average, n = 5) times as wide as pronotum. Outer margin of epipleura dorsally visible only shortly at base, and reaching sutural angle. Elytral surface between outer side of epipleura and sutural margin convex, with sparse shallow punctures and irregular fine wrinkles. Epipleural surface covered with irregular wrinkles and small granules. Lateral carina of elytra (outer margin of pseudepipleura) visible in dorsal view only anteriorly, explanate on humeri, merging with epipleura, not reaching sutural angle. Mesoventrite with rather sparse recumbent hairs, fine granules and wrinkles. Abdominal ventrites with recumbent yellow hairs.

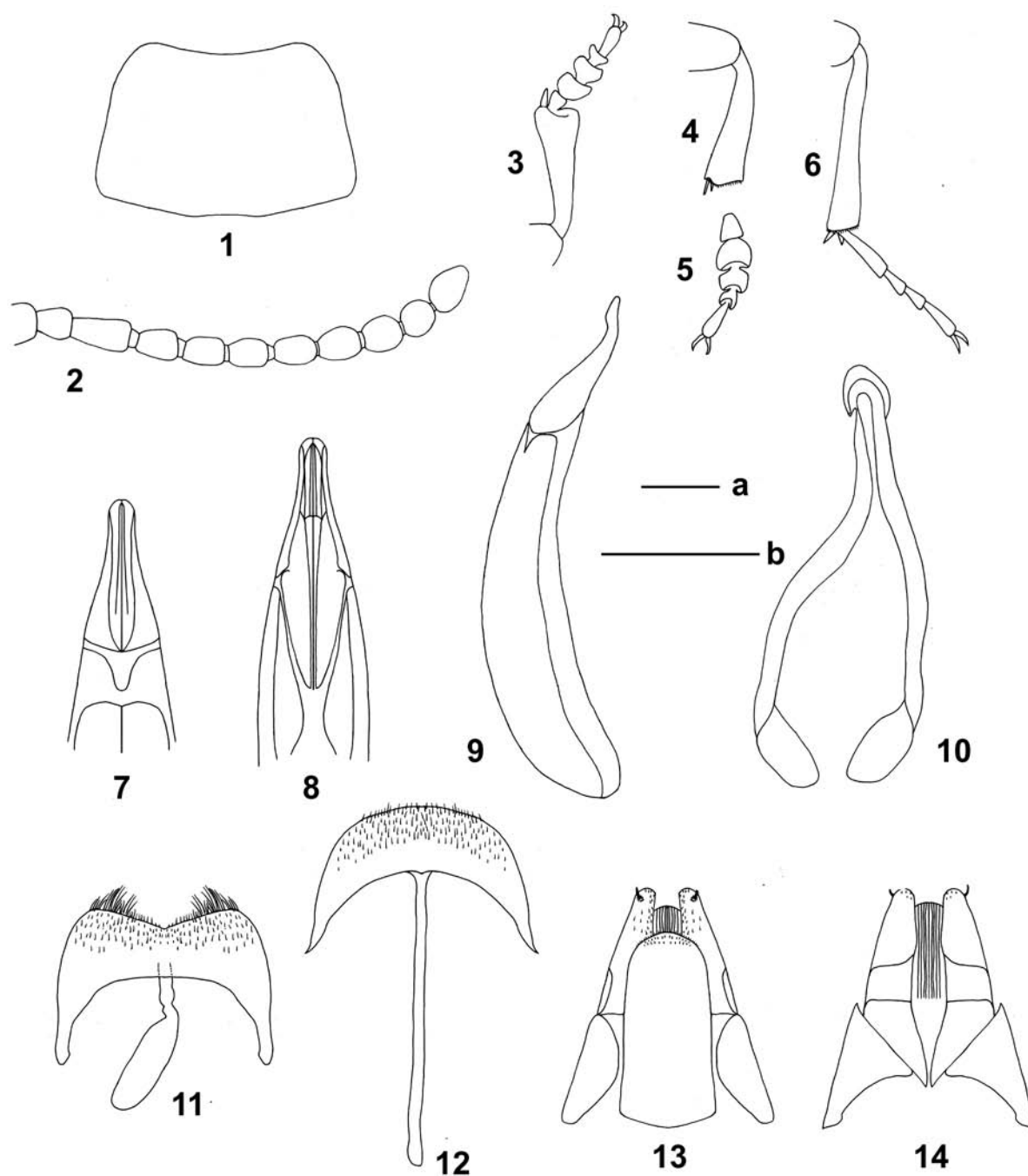


Fig. 1–14. *Bioramix (Leipopleura) igori* sp. n., details of structure.

1 – pronotum; 2 – antenna; 3 – protibia and protarsus; 4 – mesotibia; 5 – mesotarsus; 6 – metatibia and metatarsus; 7, 8 – apical part of aedeagus (parameres), dorsal and ventral view; 9 – aedeagus, lateral view; 10 – spiculum gastrale; 11 – male sternite VIII with unpaired defensive gland; 12 – female sternite VIII and spiculum ventrale; 13, 14 – ovipositor, dorsal and ventral view.

Рис. 1–14. *Bioramix (Leipopleura) igori* sp. n., детали строения.

1 – переднеспинка; 2 – усик; 3–6 – голени и лапки передних, средних и задних ног; 7, 8 – верхняя часть эдеагуса (парамеры), вид сверху и снизу; 9 – эдеагус, вид сбоку; 10 – гастральная спикула; 11 – стернит VIII самца с непарной железой; 12 – стернит VIII самки и вентральная спикула; 13, 14 – яйцеклад, вид сверху и снизу.

Legs strong, length (width) ratio of pro-, meso- and metafemora 69(23.5) : 73(22.5) : 89.5(21.5) (n = 5); that of corresponding tibiae 65.5(21) : 59.5(18.5) : 83(19) (n = 5). Protibiae gradually widening toward apex; apical margin not extended, underside shallowly concave; 3.05–3.19 (3.13 on average, n = 5) times as long as wide apex. Hind tibiae straight. Plantar surface of pro- and mesotarsomeres 1 to 4 with hair brushes. Width (length)

ratio of 1 to 4 pro-, meso- and metatarsomeres are as follows: 10(7) : 18(11.5) : 15(9) : 10.5(6.5) (n=5), 10.5(10) : 14.5(11) : 11.5(9.5) : 8.5(6.5) (n=5) and 7.5(29) : 7.5(10.5) : 7.5(12) : 7(16.5) (n=5).

Aedeagus: length 2.33 mm, width 0.5 mm. Parameres 0.7 mm long and 0.25 mm wide. Spiculum gastrale as in fig. 25. Apical margin of abdominal sternite VIII sinuate.

Length of body 9.5–10 mm, width 4.57–4.8 mm.

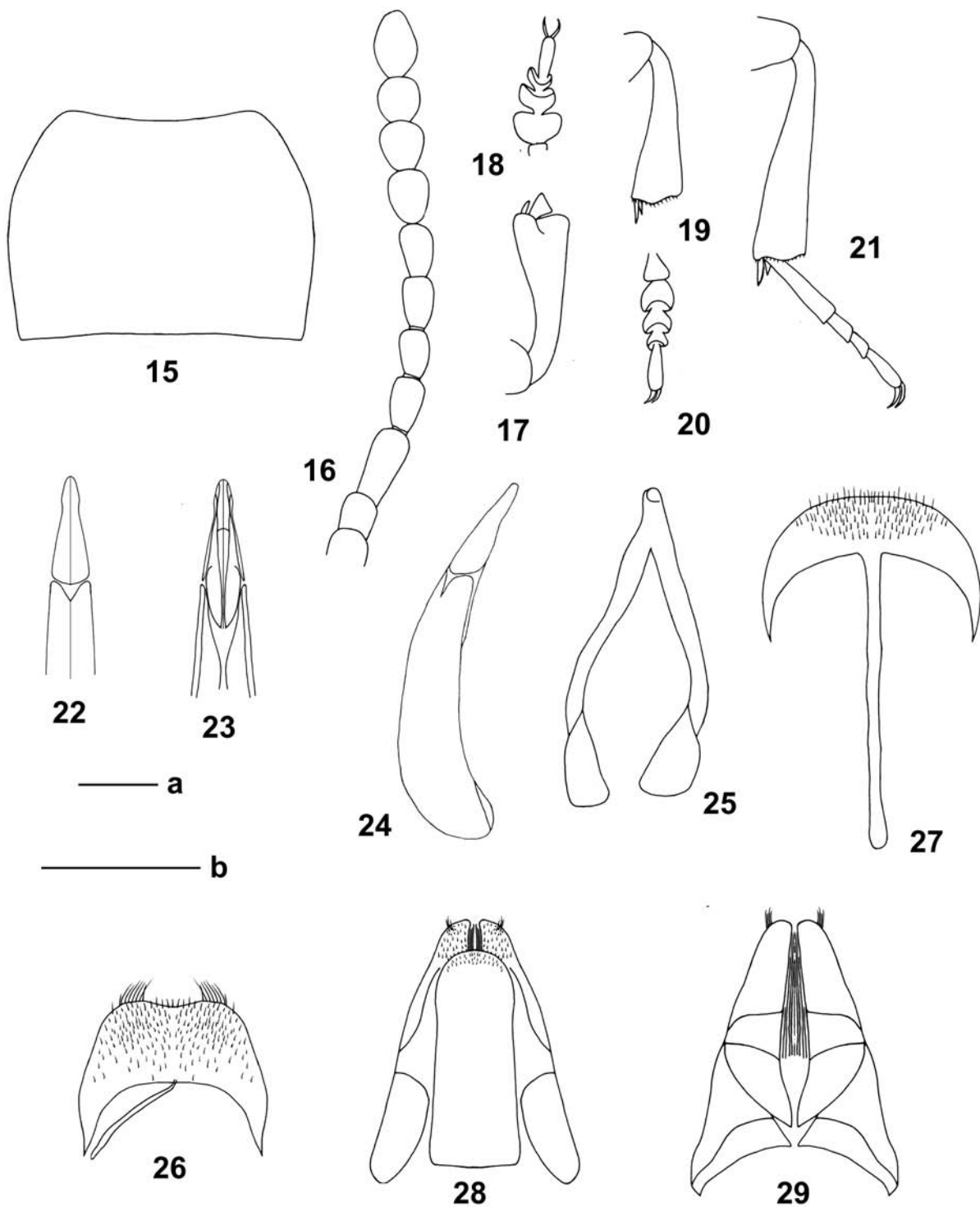


Fig. 15–29. *Bioramix (Leipopleura) hongyuanensis* sp. n., details of structure.

15 – pronotum; 16 – antenna; 17 – protibia; 18 – protarsus; 19 – mesotibia; 20 – mesotarsus; 21 – metatibia and metatarsus; 22, 23 – apical part of aedeagus (parameres), dorsal and ventral view; 24 – aedeagus, lateral view; 25 – spiculum gastrale; 26 – male sternite VIII with unpaired defensive gland; 27 – female sternite VIII and spiculum ventrale; 28, 29 – ovipositor, dorsal and ventral view.

Рис. 15–29. *Bioramix (Leipopleura) hongyuanensis* sp. n., детали строения.

15 – переднеспинка; 16 – усик; 17–21 – голени и лапки передних, средних и задних ног; 22, 23 – верхинная часть эдеагуса (парамеры), вид сверху и снизу; 24 – эдеагус, вид сбоку; 25 – гастральная спикула; 26 – стернит VIII самца с непарной железой; 27 – стернит VIII самки и вентральная спикула; 28, 29 – яйцеклад, вид сверху и снизу.

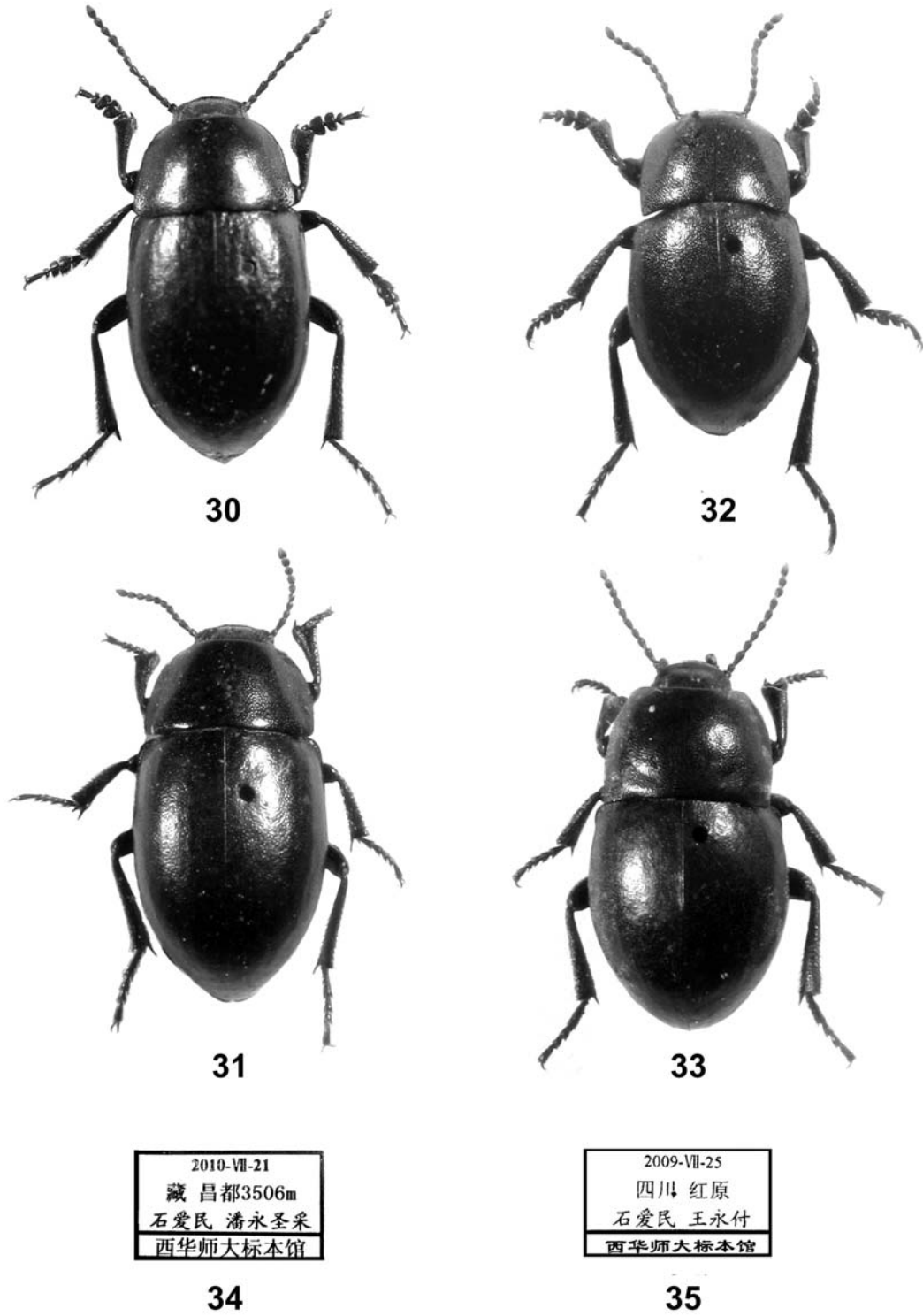


Fig. 30–35. New species of *Bioramix*: habitus, labels of holotypes.

30, 31, 34 – *B. igori* sp. n.; 32, 33, 35 – *B. hongyuanensis* sp. n. 30, 32 – male; 31, 33 – female; 34, 35 – first labels of the holotypes.

Рис. 30–35. Новые виды рода *Bioramix*, внешний вид, этикетки голотипов.

30, 31, 34 – *B. igori* sp. n.; 32, 33, 35 – *B. hongyuanensis* sp. n. 30, 32 – самец; 31, 33 – самка; 34, 35 – первые этикетки голотипов.

Female. Body longer and wider. Pronotum 1.85–1.98 (1.93 on average, $n = 5$) times as wide as head, 1.75–2.65 (2.1 on average, $n = 5$) times as long as head. Elytra 1.22–1.28 (1.26 on average, $n = 5$) times as wide as pronotum, 2.13–2.41 (2.23 on average, $n = 5$) times as long as wide. Ratio of pronotal width at anterior margin to its maximum width and width at base 82.3 : 126.3 : 123.3 ($n = 5$). Ovipositor dorsally with yellow hairs and a hair tuft (with 3–4 long hairs) near apical margin.

Length of body 10.36–10.55, width 5.23–5.47 mm.

Diagnosis. The species is close to *B. nagquana*, but clearly differs by structure of aedeagus and proportions of pro- and mesotarsomeres. The species also differs from the closely related *B. reinigi* and *B. crypticoides* in the structure of aedeagus, completely expressed (not shortened) lateral keel of elytra (outer margin of pseudopipleura).

Etymology. The species is named from the type locality.

Distribution. China: Sichuan Province, Qionglai Shan.

Ecology. The beetles were taken from an environment with small rocks and grass.

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