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On the *Lathrobium* fauna of China I. The fauna of the Qinling Shan, the Daba Shan, and adjacent regions (Coleoptera: Staphylinidae: Paederinae)

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Abstract. Types and additional material of the paederine genus *Lathrobium* Gravenhorst, 1802 from the Qinling Shan, the Daba Shan, and adjacent mountain ranges in Central China (Gansu, Shaanxi, northern Sichuan, western Hubei) are revised. In all, 34 species are recognized, 29 of which are described and illustrated for the first time: *L. aquilinum* sp. n. (Shaanxi: Daba Shan); *L. biapicale* sp. n. (Sichuan: Songpan env.); *L. bifidum* sp n. (Hubei: Daba Shan); *L. biforme* sp. n. (Gansu: Qinling Shan); *L. brevilobatum* sp. n. (Shaanxi: Qinling Shan); *L. brevisternale* sp. n. (Sichuan: Min Shan); *L. brevitergale* sp. n. (Shaanxi: Qinling Shan); *L. concameratum* sp. n. (Shaanxi: Qinling Shan); *L. crassispinosum* sp. n. (Shaanxi/Sichuan: Micang Shan); *L. curvispinosum* sp. n. (Hubei: Daba Shan); *L. declive* sp. n. (Shaanxi: Qinling Shan); *L. detruncatum* sp. n. (Sichuan: Songpan env.); *L. effeminatum* sp. n. (Shaanxi: Qinling Shan); *L. falcatum* sp. n. (Gansu: Qinling Shan); *L. fissispinosum* sp. n. (Hubei: Daba Shan); *L. gansuense* sp. n. (Gansu: Qinling Shan); *L. huaense* sp. n. (Shaanxi: Qinling Shan); *L. inflexum* sp. n. (Gansu: mountains SE Longnan); *L. lentum* sp. n. (Sichuan: Songpan env.); *L. longispinosum* sp. n. (Shaanxi/Sichuan: Micang Shan); *L. lunatum* sp. n. (Gansu: Qinling Shan); *L. minicum* sp. n. (Gansu: Min Shan); *L. rectispinosum* sp. n. (Shaanxi: Daba Shan); *L. serrilobatum* sp. n. (Shaanxi/Sichuan: Micang Shan); *L. sociabile* sp. n. (Shaanxi: Qinling Shan); *L. spinigerum* sp. n. (Shaanxi: Micang Shan); *L. tectiforme* sp. n. (Shaanxi: Qinling Shan); *L. trifidum* sp. n. (Shaanxi/Chongqing: Daba Shan); *L. varisternale* sp. n. (Shaanxi: Qinling Shan). A lectotype is designated for *Lathrobium chinense* Bernhauer, 1938. Aside from one widespread macropterous species and one wing-dimorphic species distributed from Gansu to Jiangsu, all the species of the study region are locally endemic and micropterous. The distributions are mapped. The endemic micropterous and wing-dimorphic species are attributed to seven species groups. Several species are subject to more or less pronounced sexual size dimorphisms (males larger than females). The locally endemic species were collected primarily by sifting leaf litter, moss, and grass roots in forest and shrub habitats at altitudes of 1000–4080 m. The material of most species is represented partly by teneral adults found in July and August, suggesting pre-imaginal development in spring and early summer. A key to the species of the study region and a checklist of the *Lathrobium* species recorded from China and Taiwan are provided. Five species previously reported from China are excluded from the Chinese *Lathrobium* fauna; these records are most likely based on misidentifications. One widespread East Palaearctic species is recorded from China for the first time. The genus is now represented in mainland China by 89 and in Taiwan by 13 species.

Key words. Taxonomy, rove beetles, *Lathrobium*, Central China, Qinling Shan, Daba Shan, new species, lectotype designation, sexual size dimorphism, wing dimorphism, checklist, distribution maps, key to species.

INTRODUCTION

The Holarctic genus *Lathrobium* Gravenhorst, 1802 is currently represented in the Palaearctic region by approximately 380 species in two subgenera (Assing 2012; Smetana 2004; Schülke unpubl.). The West Palaearctic *Lathrobium* fauna can be considered rather well-studied. Rare discoveries of undescribed species in recent years are confined to regions such as Turkey, Iran, and Middle Asia. The inventory of the East Palaearctic fauna, on the other hand, is far from complete, as is evidenced not only by the number of recent and on-going species descriptions particularly from China (e.g., Peng et al. 2012a–e). Two-thirds of the 48 species recognized in a recent revision of the Himalayan fauna were newly described (Assing 2012).

According to a checklist provided by Peng et al. (2012a), 49 extant species of *Lathrobium* were previously reported from mainland China; the records of four species were regarded as doubtful. In the meantime, 15 additional species have been described (Peng et al. 2012b–e, 2013), thus raising the total number of species known from mainland China to 64. According to a recent revision, the genus is represented in Taiwan by thirteen locally endemic species (Assing 2010). In mainland China, *Lathrobium* is undoubtedly represented by more micropterous and locally endemic species than any other paederine genus. This conclusion is based not only on the number of described taxa, but also on personal observations both in the field and on material seen in various public and private collections. With a total of 66 described species recorded from mainland China, all of them micropterous and locally endemic, *Nazeris* Fauvel, 1873 is enormously diverse, too,

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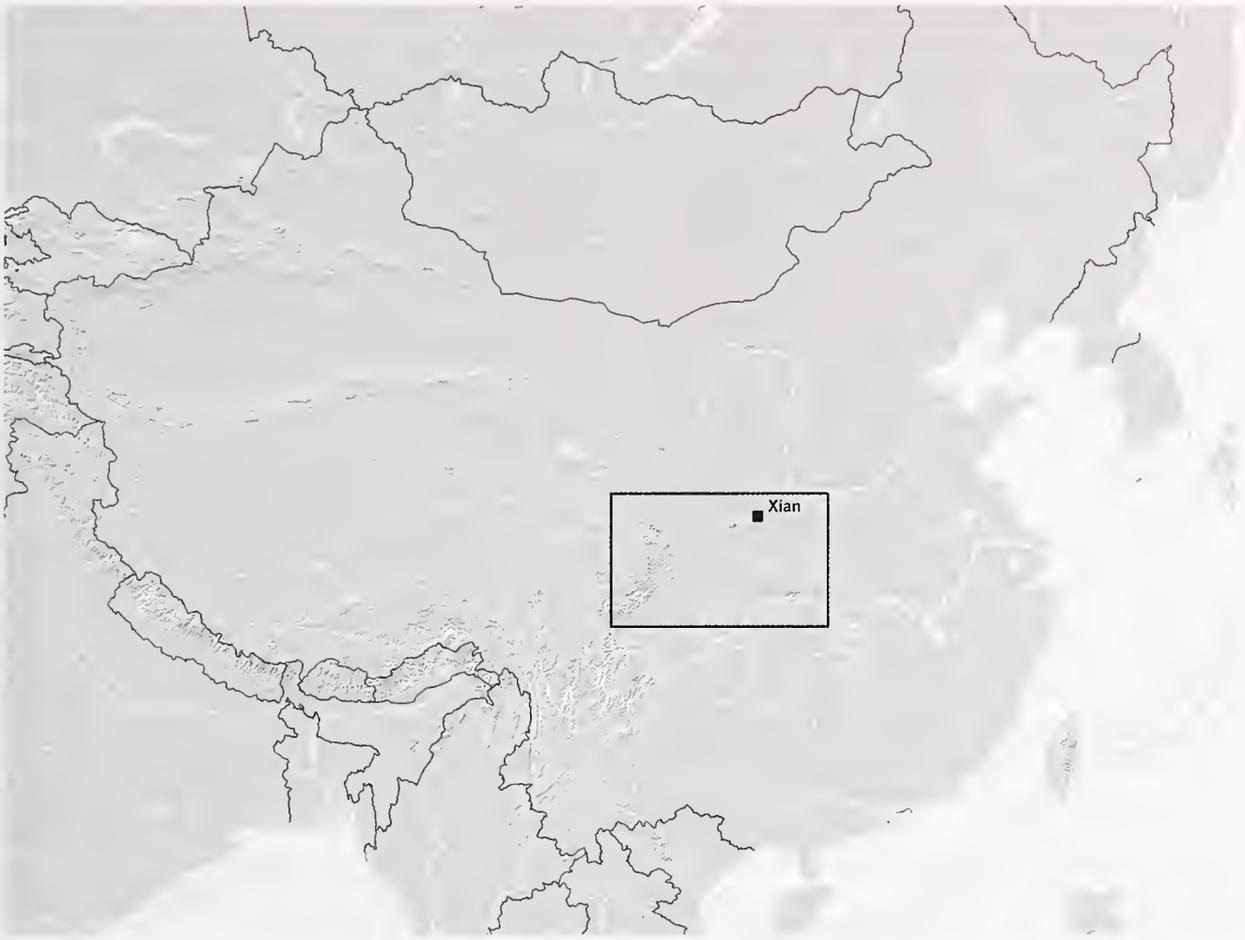


Fig. 1. Geographic position of the study region in China. The frame marks the outline of the distribution maps provided below.

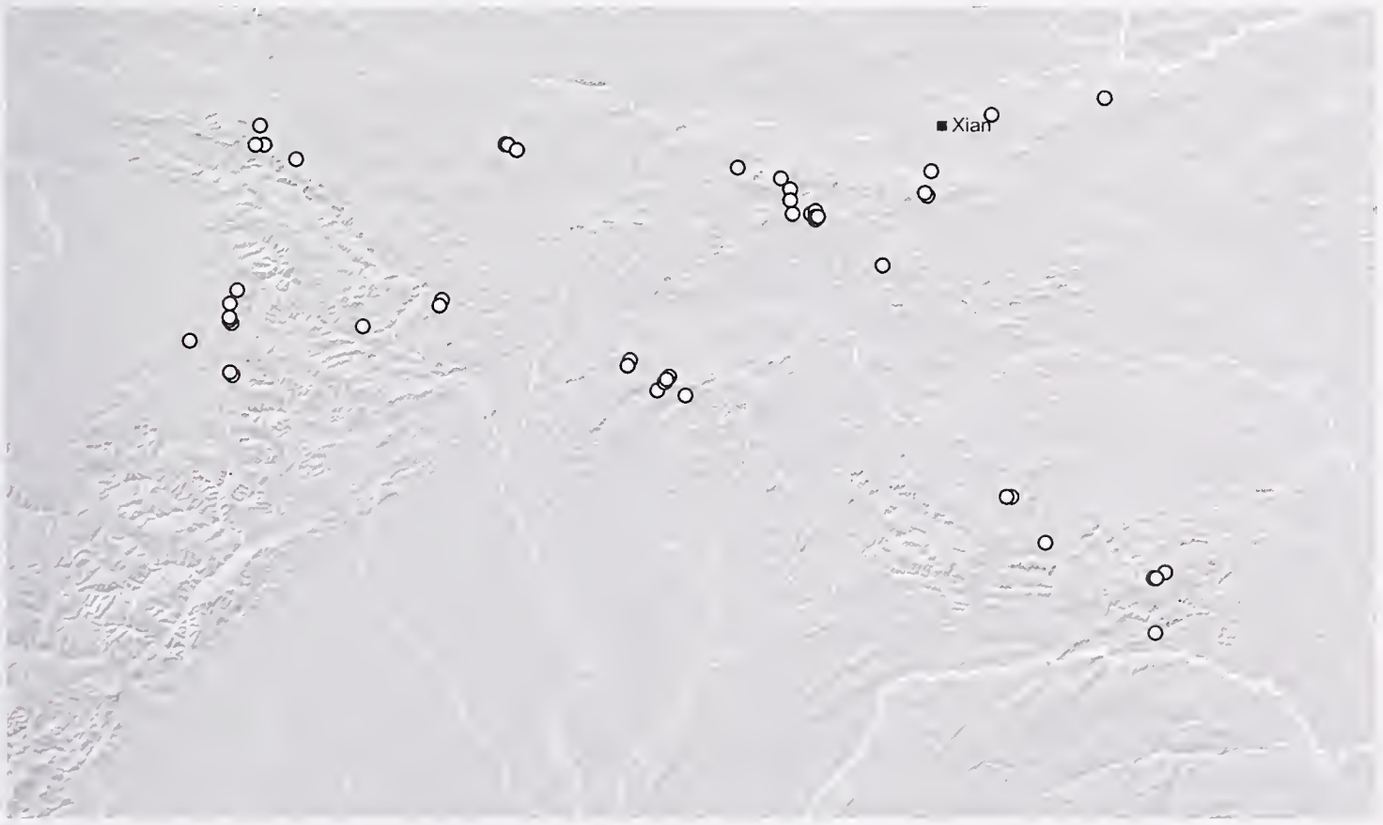


Fig. 2. Sample localities in the study region (all *Lathrobium* records pooled).

but this genus has received more attention in the past (Assing 2013). In the region covered in the present study, *Nazeris* is represented by only approximately half as many species as *Lathrobium*.

Unlike the Himalayan fauna, which had been addressed by European authors such as Coiffait, the *Lathrobium* species of China had received little attention until very recently. Only two of the locally endemic species had been described prior to 1990. Based on the remarkable number of recently described species from various mountain ranges in China, on the results of the present study, and on the material from other regions seen in various collections (to be treated in future studies), the true diversity of *Lathrobium* in mainland China can be expected to comprise several hundred species.

The Qinling Shan is a geologically old mountain range in central China with an east-west extension of approximately 650 km from southern Gansu in the east to Henan in the west. The highest peak of the Qinling Shan is the Taibai Shan at 3,767 m. The Qinling Shan forms the main dividing line between the temperate north and the south of China, which is strongly influenced by subtropical monsoon rains. According to Rost (1993), the mountain range was partly glaciated at least in the late Pleistocene. Data on the geology, geography, and climate were compiled by Ratschbacher et al. (2003) and Rost (1993). Adjacent to the Qinling Shan is the Daba Shan, which extends along the border between Shaanxi and Sichuan eastwards into western Hubei and which is known to represent a glacial refuge. The Shennongjia massif forms the easternmost part of the range and has the highest peaks, with six peaks ranging in altitude from 3,000 to 3,105 m. For a map illustrating the geographic position of both the Qinling Shan and the Daba Shan see Assing (2013) and Fig. 1. Only three micropterous species were previously known from the Qinling Shan (Chen et al. 2005; Peng et al. 2013), none from the Daba Shan.

The present paper is based on material collected during a joint field trip to southern Shaanxi, southern Gansu, and northern Sichuan conducted by Michael Schülke, David Wrase (both Berlin), and the author in summer 2012, on material collected by Andreas Pütz, Michael Schülke, Aleš Smetana, and David Wrase during several earlier field trips to the Qinling Shan and the Daba Shan, as well as on additional material located in some museum collections.

MATERIAL AND METHODS

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). A digital camera (Nikon Coolpix 995) was used for the photographs. The maps were created using MapCreator 2.0 (primap) software. The localities where *Lathrobium* material was collected are mapped in Fig. 2.

Body length was measured from the anterior margin of the mandibles (in resting position) to the abdominal apex, the length of the forebody from the anterior margin of the mandibles to the posterior margin of the elytra, head length from the anterior margin of the frons to the posterior margin of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

COLLECTION MATERIAL DEPOSITORIES

FMNH	Field Museum of Natural History, Chicago (via L. H. Herman)
MHNG	Muséum d'Histoire Naturelle, Genève (G. Cuccodoro)
MNHUB	Museum für Naturkunde der Humboldt-Universtität Berlin (J. Frisch)
NHMB	Naturhistorisches Museum Basel (M. Geiser, I. Zürcher)
NHMW	Naturhistorisches Museum Wien (H. Schillhammer)
SNUC	Insect Collection of Shanghai Normal University, Shanghai
ZFMK	Zoologisches Forschungsmuseum Alexander Koenig, Bonn
cAss	author´s private collection
cPüt	priv. collection Andreas Pütz, Eisenhüttenstadt
cSch	priv. collection Michael Schülke, Berlin
cSme	priv. collection Aleš Smetana, Ottawa

RESULTS

Diversity and distribution

Including the 29 newly described taxa, the *Lathrobium* fauna of the study region is represented by as many as 34 named species. The true diversity, however, is probably significantly greater. Females representing several undescribed species were examined, a considerable number of the newly described taxa are known only from their respective type localities, and many regions of the Daba Shan, the Qinling Shan, and adjacent mountain ranges have not been studied thoroughly. Except for two species, *L. dignum* (widespread in the East Palaearctic) and *L. sinense* (widespread from Gansu to Jiangsu), all the species are locally endemic.

Natural history

The apterous species were almost exclusively found in leaf litter, moss, and grass roots of various forest biotopes, beneath shrubs, and in subalpine habitats at altitudes of 1070–4080 m. The widespread and macropterous *L. dignum* was collected both at low (400 m) and at high elevations of nearly 3,000 m. The wing-dimorphic *L. sinense* appears to inhabit a wide range of habitats (moist habitats with *Artemisia* and other herbs, banks of streams, shrub and forest biotopes) at a wide range of altitudes (600–2940 m). On numerous occasions, two or more *Lathrobium* species, often belonging to the same species group, were collected together in the same locality. It is unclear how they are ecologically segregated.

The examined material of the majority of species included teneral adults collected in July and August, suggesting that mating and pre-imaginal development occur in spring and early summer.

Remarkably, a considerable number of species, particularly those of the *L. varisternale* group (see below), are subject to a more or less pronounced sexual size dimorphism, with the males on average slightly or distinctly larger than the females. An explanation of how selection may have favoured such a dimorphism is unknown.

Species groups

The micropterous *Lathrobium* species described from the East Palaearctic region, including some of those recorded from mainland China, have mainly been attributed to species groups such as the *L. pollens* and *L. brachypterum*, and *L. harimanum* groups. *Lathrobium pollens* Sharp, 1889, *L. brachypterum* Sharp, 1889, and *L. harimanum* Watanabe, 1986 are probably locally endemic to certain regions in Japan; *L. pollens* was also reported from China, but this record is likely to be based on a misidentification (see also the checklist at the end of this paper). According to Watanabe (1991a, b, 1997), the representatives of the *L. pollens* group are characterized by "vestigial eyes and degenerated hind wings like the members of the group of *L. harimanum*, but can be distinguished from the latter by the darker colour of body and distinctly transverse head and elytra" (Watanabe 1991a), whereas the species of the *L. harimanum* group are distinguished from those of the *L. pollens* group by "the lighter colour of body, not transverse head, and long elytra" (Watanabe 1991b), and the "members of the *L. brachypterum* group are characterized by the body smaller in size than in the *Lathrobium* (s. str.) *pollens* group (Watanabe 1997). The limitations of this concept are evident, not only because it is based exclusively on typological principles, but also because it neglects numerous phylogenetically significant characters. Thus, it is not surprising that, in a paper containing the descriptions of seven new species from Yunnan, Watanabe & Xiao (1997) attribute "four of the seven [...] to the group of *Lathrobium* (s. str.) *pollens/brachypterum*" and the remaining three species to no group at all.

The endemic *Lathrobium* fauna of the study region is evidently represented by several distinct lineages, most of which are characterized particularly by the male and female sexual characters. In general, closely related species, particularly hypothesized adelphotaxa, are at the same time geographically close, suggesting that the separation of gene pools and ensuing speciation was – at least primarily – initiated by local geological and climatic events. There appear to be no closer phylogenetic affiliations between the *Lathrobium* fauna of the Qinling Shan and that of the Daba Shan. Except for the wing-dimorphic and more widespread sole representative of the *L. sinense* group, the species groups are confined to either the Qinling Shan (including the adjacent mountain ranges extending westwards into northern Sichuan) or the Daba Shan (including the Micang Shan).

The *L. sinense* group includes only one species, *L. sinense*, and is characterized above all by the highly derived morphology of the aedeagus, i.e., the conspicuous large sclerotized internal structure with a long and spine-like apical extension, and the short, stout, straight, and in ventral view weakly asymmetric ventral process (Figs 9–13). Additional diagnostic characters are the relatively small body size without sexual size dimorphism (length of forebody 2.6–3.0 mm), the weakly modified male sternite VII (Fig. 7), the shape and chaetotaxy of the male sternite VIII (symmetric, pubescence weakly modified, posterior excision relatively deep and V-shaped) (Fig. 8), and the anteriorly broadly undivided female tergite IX (Figs 16–17). Unlike the locally endemic species known from the study region, *L. sinense* is wing-dimorphic (Figs 3–6) and widespread (Fig. 18).

The *L. lentum* group, too, is represented only by a single species, *L. lentum*. It differs from all other species (groups) of the study region by the complete absence of microsculpture on the head (Fig. 163), by the conspicuously short tarsi, and by the general morphology of the aedeagus, particularly of the ventral process of the aedeagus (Figs 166–167). Additional diagnostic characters are the broad body, the relatively short pronotum (only approximately 1.2 times as long as broad), the chaetotaxy of the male sternite VII (with two extensive clusters of dense modified setae; Fig. 164), the weakly modified male sternite VIII (symmetric, narrowly without pubescence along the middle, broad and shallow posterior excision; Fig. 165), the posteriorly weakly produced female sternite VIII (only approximately as long as broad; Fig. 168), the completely divided female tergite IX, and the weakly pronounced sexual size dimorphism.

The *L. fissispinosum* group is constituted by a bi- or trilobed ventral process of the aedeagus, an evident synapomorphy (e.g., Figs 174–175, 180–181, 229–239), and additionally characterized by a more or less strongly modified (e.g., Figs 173, 179), sometimes asymmetric male sternite VIII (e.g., Fig. 192) and by the morphology the female tergite IX (anteriorly much shorter than tergite X, either undivided, with median suture, or completely divided; e.g., Figs 189, 197). The group comprises nine species (*L. fissispinosum*, *L. rectispinosum*, *L. curvispinosum*, *L. longispinosum*, *L. crassispinosum*, *L. spinigerum*, *L. trifidum*, *L. bifidum*, *L. serrilobatum*) distributed in the Daba Shan (including the Micang Shan). Within this group, six species (*L. fissispinosum*, *L. rectispinosum*, *L. curvispinosum*, *L. longispinosum*, *L. crassispinosum*, *L. spinigerum*) share a conspicuous synapomorphy, the presence of a remarkably long spine in the internal sac of the aedeagus (e.g., Figs 174–175, 180–181). Among the remaining three species, which lack the internal spine of the aedeagus, *L. trifidum* and *L. bifidum* apparently represent adelphotaxa, as can be inferred from the similarly derived morphology of the ventral process of the aedeagus and the similarly derived morphology of the female tergite IX (completely divided in the middle). The third species, *L. serrilobatum*, shares one synapomorphy, the small basal portion of the aedeagus, with *L. fissispinosum* and the five other species with a long spine in the internal sac of the aedeagus. Interestingly, the morphology of the female tergite IX is subject to pronounced variation in the *L. fissispinosum* group. Some species have this tergite completely divided (e.g., Figs 205, 212), in others it is undivided (e.g., Figs 189, 197), though always shorter in the middle than tergite X. These extremes are linked by transitional conditions: in some species the female tergite IX is not completely separated, but has a short suture in the middle.

The pronounced interspecific variation of sexual characters, to some extent also of external characters, suggests that speciation in the *L. fissispinosum* group occurred in the more distant geological past.

The *L. effeminatum* group is represented only by a single species, *L. effeminatum* from the Qinling Shan, which is characterized particularly by the shape and chaetotaxy of the male sternite VIII (symmetric, weakly oblong, posterior margin convex and without median excision, practically unmodified pubescence; Fig. 74), the absence of a sexual dimorphism of the protarsi, and additionally by small body size, relatively sparse punctation of the abdomen, the absence of a sexual dimorphism of tergite VIII, an unmodified male sternite VII (Fig. 73), an aedeagus with a small basal portion and with a long, slender, and distinctly asymmetric ventral process (Figs 75–76), and by the morphology of the female tergite IX (anterior median portion undivided and distinctly shorter than tergite X).

The *L. gansuense* group comprises seven species distributed in northern Sichuan and the Qinling Shan: *L. gansuense*, *L. shaanxiense*, *L. declive*, *L. heteromorphum*, *L. biapicale*, *L. detruncatum*, and *L. brevisternale*. This group is constituted particularly by the presence of a small spine in the internal sac of the aedeagus (e.g., Figs 24, 32), and additionally by small to moderate body size, an oblong head (e.g., Figs 19, 27), blackish eyes with weakly defined ommatidia, mostly dense punctation of the whole abdomen, a weakly pronounced sexual dimorphism of the protarsi, the absence of sexual dimorphisms of body size (exception: *L. biapicale* with a weakly pronounced dimorphism) and of the shape of the posterior margin of tergite VIII, a weakly asymmetric male sternite VII (e.g, Figs 20, 28), a distinctly asymmetric male sternite VIII (with a characteristic pattern of modified setae and with the posterior excision moved to the left; e.g., Figs 21, 29), a strongly asymmetric and apically acute or bilobed ventral process (e.g., Figs 22–23, 30–31), and by the short posterior processes of the anteriorly broadly undivided female tergite IX (e.g, Fig. 26). The similar morphology of the aedeagus, as well as the similarly derived shape and chaetotaxy of the male sternite VIII suggest that *L. gansuense* and *L. shaanxiense* are adelphotaxa; the same is true of *L. detruncatum* and *L. brevisternale*. The species of this group were primarily found at higher elevations (only on one occasion below 2000 m, other records between 2270 and 4080 m).

The *L. aquilinum* group is represented by a single species, *L. aquilinum* from the Daba Shan (western Hubei). This group shares the symmetric aedeagus without internal spine (Figs 246–247) with the *L. varisternale* group, but is distinguished particularly by the completely divided female tergite IX, as well as by the rather stout and short ventral process of the aedeagus, and by the shape and chaetotaxy of the male sternites VII and VIII (Figs 244–245).

The *L. varisternale* group is the most diverse and evidently the phylogenetically most recent of the species groups in the study region. It includes 13 species distributed in the Qinling Shan and adjacent mountain ranges (Gansu, Shaanxi): *L. varisternale*, *L. minicum*, *L. lunatum*, *L. falcatum*, *L. biforme*, *L. mawenliae*, *L. tectiforme*, *L. sociabile*, *L. brevitergale*, *L. huaense*, *L. brevilobatum*, *L. concameratum*, *L. inflexum*. Remarkably, all of these species, except *L. inflexum*, are subject to a more or less pronounced sexual size dimorphism. In addition, they are characterized by moderately large body size, the presence of shallow microsculpture on the head, a weakly pronounced sexual dimorphism of the protarsi, dense punctation of the abdomen (punctation of tergite VII not distinctly sparser than that of anterior tergites), symmetric and weakly to moderately modified male sternites VII and VIII (e.g., Figs 80–83), the chaetotaxy of the male sternites VII and VIII (middle of sternite VIII mostly narrow-

ly non-pubescent at least in posterior half, often also middle of sternite VII partly non-pubescent), the morphology of the symmetric aedeagus (ventral process slender, mostly laterally more or less compressed, and apically acute; dorsal plate lamellate and usually with more or less pronounced median carina; absence of sclerotized spines in internal sac; e.g, Figs 84, 90, 97), the oblong and posteriorly more or less strongly produced female sternite VIII (e.g., Figs 92, 98, by the undivided and relatively long anterior portion of the female tergite IX (at least nearly as long as tergite X; e.g., Fig. 110), and the distinctly convex or even angled (cross-section) female tergite X (e.g, Fig. 156).

The low degree of character divergence particularly in the species allied to *L. huaense* (*L. huaense*, *L. tectiforme*, *L. sociabile*, *L. brevitergale*, *L. brevilobatum*, *L. concameratum*) suggests that speciation has occurred only in the recent geological past. Interspecific character variation among the species of this group is not clinal, since up to three species were found in the same locality. Thus, the hypothesis that the different morphs belong to the same variable species had to be rejected.

THE SPECIES OF THE STUDY REGION

Lathrobium dignum Sharp, 1874

Material examined. China: 1♂, Jiangsu, Nanjing University of Agriculture, VII.1991, leg. Cooter (cAss); 1♀, Gansu, Xiahe (=Labrang) env., 35°11.5'N, 102°30.6'E, 2940 m, 19.–22.V.2005, leg. Hájek, Král & Ružička (cSch); 1♀ [teneral], Gansu, 27 km E Xiahe, Bagatan bridge, 2750 m, 6.VIII.1994, leg. Smetana (cSme); 1♀, Shaanxi, 15 km N Xi'an, bank of Wei He river near road to Xi'an airport, 34°24'N, 108°55'E, 400 m, 22.VIII.1995, leg. Wrase (cAss). **Russia:** 4 exs., Russian Far East, Ussuri mountain range, Nikolsk Ussuriysk, leg. Mandl (NHMW, cAss); 1♂, 1♀, Russian Far East, Ussuryk District, Kaymanovka, 27.VII.1992, leg. Beloborodov (NHMB, cAss); 1♀, Russian Far East, Artem env., Kaymanovka, 23.–26.VII.1992, leg. Beloborodov (NHMB); 2♂ [det. Schülke], Russian Far East, Lazovskyi district, Pasetshnaya river, 18.V.1997, leg. Sundukov (cSch).

Comment. The above specimen from Jiangsu represents the first confirmed primary record from China. The records from Shaanxi and Gansu require confirmation, since they are based exclusively on females. For illustrations of the male sexual characters see Koch (1939a).

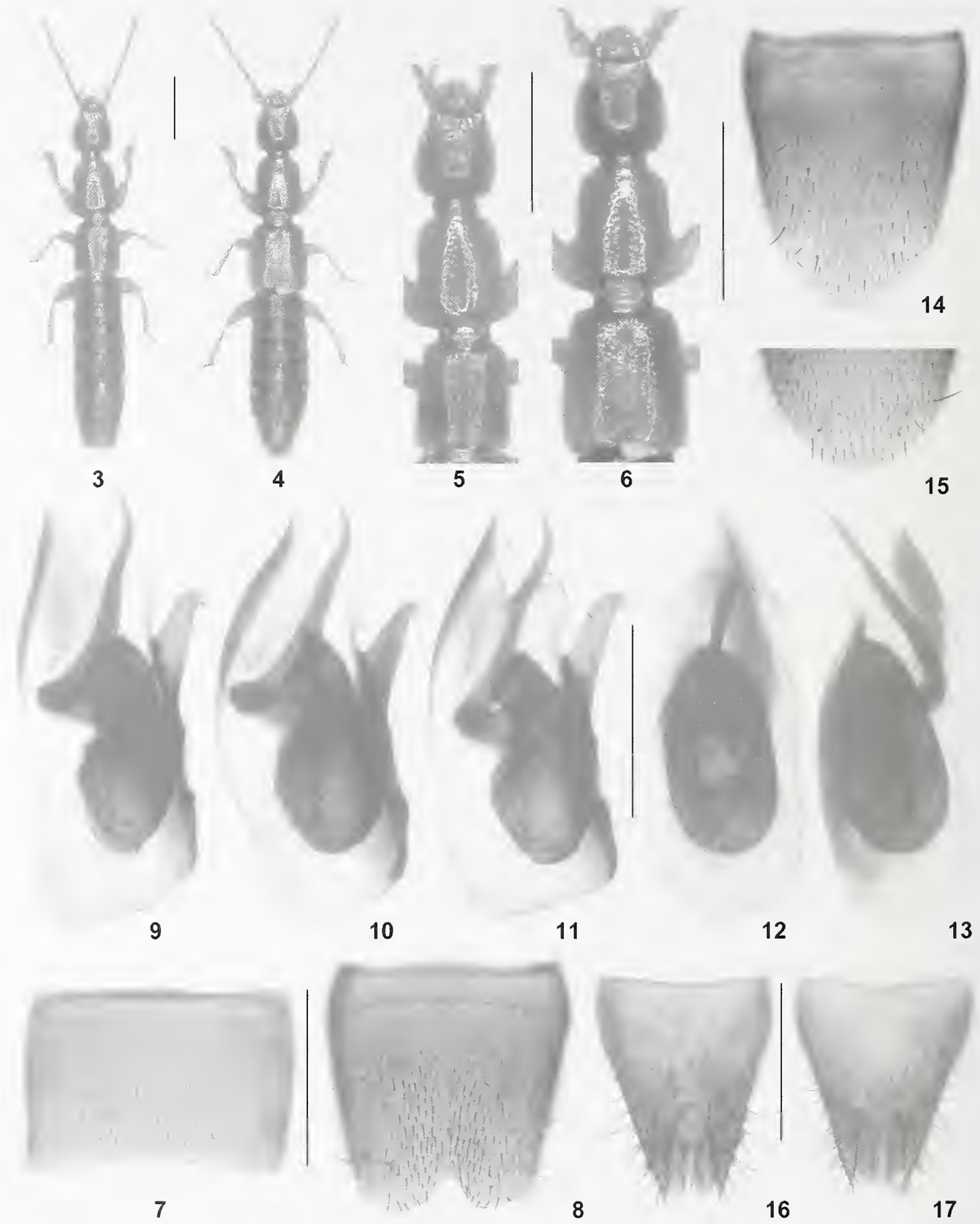
The *Lathrobium sinense* species group

***Lathrobium sinense* Herman, 2003** (Figs 3–18)
Lathrobium (s. str.) *chinense* Bernhauer, 1938: 36 f. (primary homonym).
Lathrobium sinense Herman, 2003: 6 (replacement name).

Type material examined. Lectotype ♂, present designation: "Nordwestl. China, Chinkiang, Col. Reitter / chinense Brnh. Type. / chinense Brnh. Typus Lathrobium / Chicago NHMus, M.Bernhauer Collection / Lathrobium chinense Bh. ♂, V.I. Gusarov det. 1993 / Lectotypus ♂ *Lathrobium chinense* Bernhauer, desig. V. Assing 2013 / Lathrobium sinense Herman, det. V. Assing 2013" (FMNH). Paralectotype ♀: "Nordwestl. China, Chinkiang, Col. Reitter / chinense Brnh. Cotypus Lathrobium / Chicago NHMus, M.Bernhauer Collection" (FMNH).

Comment. The original description of *Lathrobium chinense* is based on an unspecified number of syntypes from "Nordwestl. China: Chinkiang" (Bernhauer 1938). The name is a junior primary homonym of *Lathrobium chinense* Boheman, 1858 and was replaced with the nomen novum *L. sinense* by Herman (2003). Two syntypes, a male and a female which had been dissected by V. Gusarov, were located in the Bernhauer collection. The male is designated as the lectotype.

Additional material examined. China, Gansu: 2♂, 3♀, W-Qinling Shan, 43 km N Chengxian, 34°08'N, 105°47'E, 1750 m, moist stream valley with ponds, meadow with *Artemisia*, scraped from soil and collected from soil surface, 28.VII.2012, leg. Assing & Schülke (cAss, cSch); 1♂, 1♀, W-Qinling Shan, N Chengxian, 34°10'N, 105°42'E, 1830 m, stream valley with secondary deciduous forest, moist litter sifted, 29.VII.2012, leg. Assing" (cAss); 1♂, 5♀, W-Qinling Shan, 101 km NW Longnan, 34°03'N, 104°10'E, 2200 m, SW-slope with shrubs, litter sifted, 1.VIII.2012, leg. Assing & Schülke" (cAss, cSch); 2♀ [1♀ macropterous], W-Qinling Shan, 47 km N Chengxian, 34°10'N, 105°43'E, 1850 m, mixed secondary forest margin, litter sifted, 29.VII.2012, leg. Schülke & Wrase (cSch, cAss); 2♀, Xiahe (=Labrang) env., 35°11.5'N, 102°30.6'E, 2940 m, 19.–22.V.2005, leg. Hájek, Král & Ružička (cSch). **Sichuan:** 2♂, 4♀, Micang Shan, 42 km S Hanzhong, 32°41'N, 106°49'E, 1090 m, stream valley, secondary mixed forest, litter, grass, and herbs near path sifted, 17.VIII.2012, leg. Assing & Schülke (cAss, cSch); 1♀ [macropterous], Micang Shan, 42 km S Hanzhong, 32°41'N, 106°49'E, 1090 m, 14.VIII.2012, leg. Assing" (cAss). **Shaanxi:** 1♀, Qinling Shan, SW Zhouzhi, 33°44'N, 107°58'E, 1900 m, mixed forest, litter and soil sifted, 25.VII.2012, leg. Assing (cAss); 5♂, 1♀, Qinling Shan, 105 km SW Xi'an, pass on road Zhouzhi–Foping, N-slope, 33°46'N, 107°58'E,



Figs 3–17. *Lathrobium sinense*. **3.** Habitus of brachypterus male. **4.** Habitus of macropterus female. **5.** Forebody of brachypterus male. **6.** Forebody of macropterus female. **7.** Male sternite VII. **8.** Male sternite VIII. **9–11.** Aedeagus in lateral view of males from Shaanxi (**9**) and two localities in Gansu (**10–11**). **12.** Aedeagus in ventral view. **13.** Aedeagus in dorsal view. **14.** Female sternite VIII (Shaanxi). **15.** Posterior portion of female sternite VIII (Gansu). **16–17.** Tergites IX–X of females from Shaanxi (**16**) and Gansu (**17**). Scale bars: 3–6: 1.0 mm; 7–17: 0.5 mm.

Fig. 18. Distributions of species of the *L. sinense* group (open symbols) and the *L. gansuense* group (filled symbols): *L. sinense* (open circles; record from Jiangsu not shown); *L. detruncatum* (filled diamond); *L. brevisternale* (filled triangle).

1700 m, small creek valley, mixed deciduous forest, sifted, 3.VII.2001, leg. Schülke & Smetana (cSch, cSme, cAss); 2♀ [1 teneral], Qinling Shan, 105 km SW Xi'an, pass on road Zhouzhi–Foping, 33°44'N, 107°59'E, 1990 m, mixed deciduous forest with bamboo, sifted, 2.&4.VII.2001, leg. Schülke & Wrase (cSch); 2♂, 4♀ [1♂ teneral], Qinling Shan, 105 km SW Xi'an, pass on road Zhouzhi–Foping, 33°44'N, 107°58'E, 1880 m, sifted, 4.VII.2001, leg. Schülke (cSch, ZFMK); 2♀, Qinling Shan, 30 km SSW Xi'an, Autoroute km 33, 108°49'E, 34°00'N, 600 m, river valley, sifted, 31.VIII.1995, leg. Schülke (cSch); 1♀, 31 km E Xi'an, Li Shan near Lintong, 34°20'N, 109°16'E, 1000–1200 m, 23.& 25.VIII.1995, leg. Wrase (cSch); 1♂, 2♀, Ningshan County, Huoditang, 33°26'N, 108°27'E, 1500–1700 m, 12.VII.2012, leg. Chen, Li, Ma, Zhao & Pan (SNUC); 1♂, 1♀ [♀ macropterous], same data, but Nanzheng County, Liping National Forest Park, 32°50'N, 106°36'E, 1400–1600 m, 12.VII.2012, leg. Chen, Li, Ma, Zhao & Pan (SNUC). **Hubei:** 3♀ [1 macropterous], 2 exs. without abdominal apex, Daba Shan, pass E Da Shennongjia, 12 km NW Muyuping, 31°30'N, 110°21'E, 1950–2050 m, mixed deciduous forest, sifted, 16.-22.VII.2001, leg. Schülke & Wrase (cSch, cAss). **Without exact data:** 1♂, S-Shaanxi/W-Hubei, VII.2001, leg. Wrase (cSch).

Description. Relatively small, wing-dimorphic species; body length 4.9–6.3 mm; length of forebody 2.6–2.9 mm (brachypterous morph), 2.8–3.0 mm (macropterous morph). Habitus of both morphs as in Figs 3–4. Coloration variable: head reddish to blackish-brown; pronotum and elytra reddish to dark-brown, mostly at least slightly paler than head; abdomen reddish to blackish-brown; legs dark-yellowish; antennae reddish.

Head (Figs 5–6) oblong, approximately 1.05–1.10 times as long as broad; posterior angles moderately marked; punctation variable, usually moderately coarse and not particularly dense, even sparser in median dorsal portion; interstices in median dorsal portion broader, in anterior, lateral, and posterior dorsal portions narrower, as broad as, or broader than average diameter of punctures; microsculpture shallow, but distinct. Eyes relatively large, composed of > 50 defined ommatidia, approximately half the length of postocular region in dorsal view, and nearly half as long as postocular region in lateral view. Antenna 1.6–1.7 mm long.

Pronotum (Figs 5–6) slender 1.25–1.30 times as long as broad and slightly broader than head; punctation similar to that of head; impunctate midline of moderate width; interstices without microsculpture.

Elytra of variable length, 0.65–0.85 times (brachypterous morph; Fig. 5) or 0.90–1.05 times (macropterous morph; Fig. 6) as long as pronotum; punctation rather

sparse, fine, and shallow; interstices without microsculpture. Hind wings dimorphic, either fully developed (macropterous morph) or of reduced length (brachypterous morph). Protarsomeres I–IV with weakly pronounced sexual dimorphism.

Abdomen with very fine and very dense punctation, punctures not distinctly sparser on tergite VII than on tergites III–VI; interstices with fine and distinct microreticulation; posterior margin of tergite VII in macropterous morph with, in brachypterous morph without palisade fringe; posterior margin of tergite VIII convex, shape subject to some variation, but without sexual dimorphism.

♂: sternites III–VI unmodified; sternite VII moderately transverse, weakly depressed in the middle, with few darker and longer setae near posterior margin, posterior margin weakly concave, almost truncate (Fig. 7); sternite VIII approximately as long as broad or weakly oblong, pubescence weakly modified, posteriorly with ill-defined cluster of slightly denser setae on either side of the narrowly non-pubescent middle, posterior excision moderately deep and broadly V-shaped (Fig. 8); aedeagus (Figs 9–13) 0.8–1.0 mm long; ventral process short, laterally somewhat compressed, somewhat pointing right in ventral view, and straight in lateral view; dorsal plate lamellate, thin, apically pointed, without median carina, and basally very weakly sclerotized; internal sac with conspicuous, large and strongly sclerotized structure apically extending into a long and twisted spine.

♀: sternite VIII (Figs 14–15) oblong, 0.8–0.9 mm long, moderately to strongly convex posteriorly; tergite IX broadly undivided anteriorly; relative lengths of tergites IX and X variable, tergite X somewhat shorter to slightly longer than tergite IX in the middle (Figs 16–17).

Intraspecific variation. *Lathrobium sinense* is subject to considerable intraspecific variation, not only of external characters such as size, coloration, punctation, length of elytra and hind wings, the shape of the posterior margin of tergite VIII, the shape of the female sternite VIII (Figs 14–15), and the relative lengths of the female tergites IX–X (Figs 16–17), but also of the male primary and secondary sexual characters, particularly the shape of the ventral process of aedeagus (Figs 9–11). At least the variability of the ventral process of the aedeagus appears to be clinal to some extent, suggesting reduced gene flow between populations.

Unlike all other congeners from the study region, *L. sinense* is wing-dimorphic, this dimorphism not only affecting the length of the elytra and hind wings, but also the presence/absence of the palisade fringe at the posterior margin of tergite VII. The presence of a macropterous morph explains why *L. sinense* is more widespread (Fig. 18) than its micropterous congeners in the Qinling Shan and the Daba Shan. Four in a total of 53 examined specimens are macropterous; all of them are females.

Comparative notes. The male sexual characters do not suggest closer relationships to any of the other species known from the Qinling Shan and the Daba Shan. *Lathrobium sinense* is readily distinguished from them by its wing dimorphism, the relatively long elytra even in the brachypterous morph, the oblong head, the shapes and chaetotaxy of the male sternites VII and VIII, the shape of the female sternite VIII, and particularly by the derived morphology of the aedeagus (shape of ventral process, basally conspicuously large and apically spine-shaped internal structure).

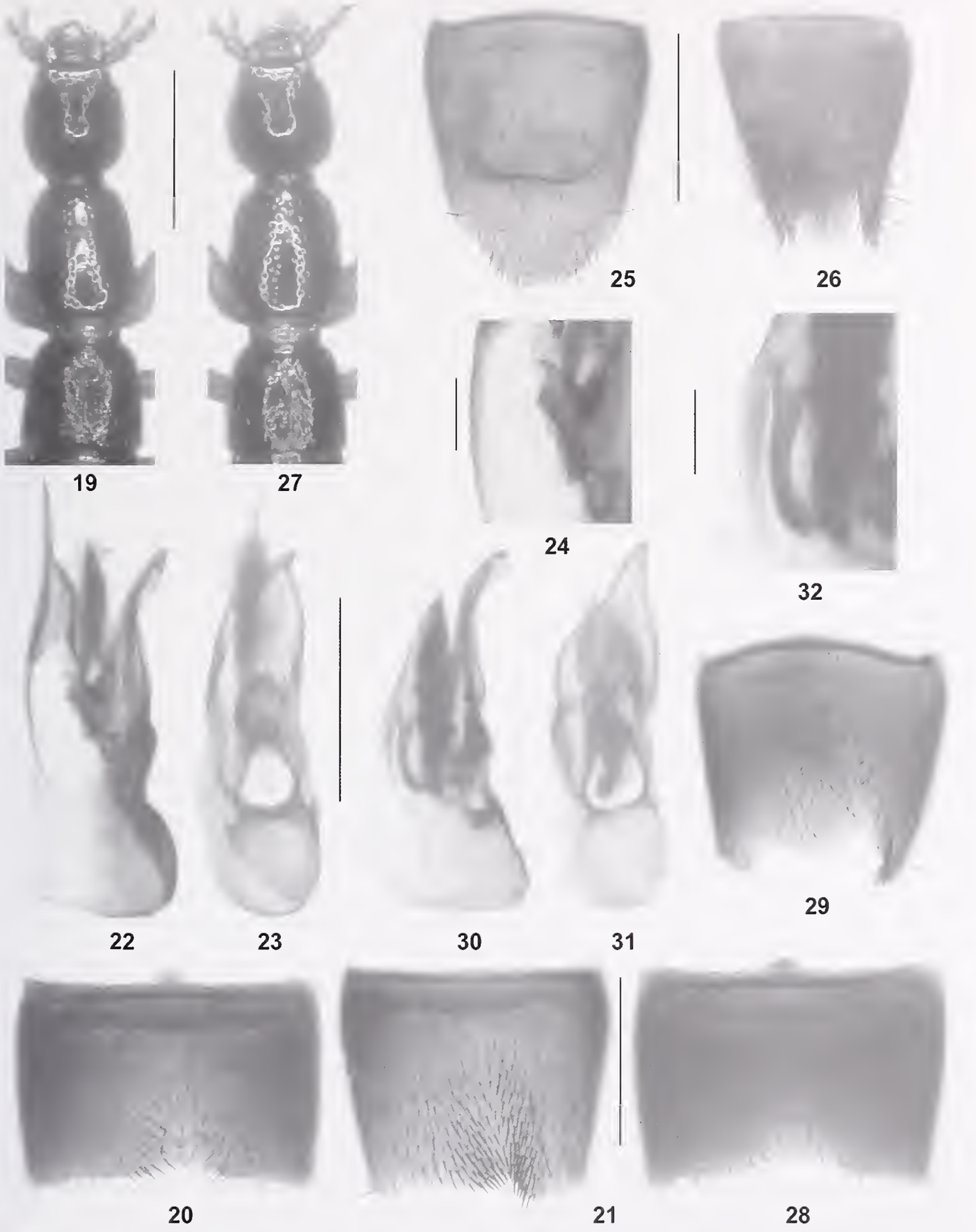
Distribution and natural history. The currently known distribution ranges from southern Gansu across the Qinling Shan and the Daba Shan to Jiangsu in East China (Fig. 18). The species appears to live in a wide range of habitats. Many specimens were sifted from leaf litter and moss in mixed deciduous forests and shrubland habitats, others collected in grassland or from soil in wetlands. The elevations range from 600 up to 2940 m. Syntopic species are *L. biforme*, *L. lunatum*, *L. longispinosum*, *L. crassispinosum*, *L. fissispinosum*, *L. curvispinosum*, *L. bifidum*, *L. tectiforme*, *L. brevitergale*, *L. concameratum*, and *L. effeminatum*. The sex ratio in the samples (17♂ : 35♀) is biased in favour of females. Two specimens collected in July are teneral.

The *Lathrobium gansuense* species group

Lathrobium gansuense sp. n. (Figs 19–26, 42)

Type material. Holotype ♂: "CHINA [10] - S-Gansu, W-Qinling Shan, NW Longnan, 34°14'32"N, 103°54'29"E, 3000 m, 2.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium gansuense* sp. n., det. V. Assing 2012" (cAss). Paratypes: 24♂, 17♀: same data as holotype (cAss); 21♂, 13♀: "CHINA: S-Gansu [CH12-10], W-Qinling Shan, 132 km NW Longnan, Lazikou pass, 34°14'32"N, 103°54'29"E, 3000 m, N-slope, pasture with shrubs, litter sifted, 2.VIII.2012, leg. M. Schülke" (cSch, ZFMK); 3♂, 1♀ [♀ teneral]: "CHINA [11] - S-Gansu, W-Qinling Shan, NW Longnan, 34°07'57"N, 103°56'15"E, 2260 m, 3.VIII.2012, V. Assing" (cAss); 1♀: "CHINA (S.Gansu) W.Qinling Shan, 125 km NW Longnan, Lazidou pass, S.side, Zhuli valley, 34°07'57"N, 103°56'15"E, 2260 m (N.slope, mixed forest, oak/pine near creek, moss, litter sifted) 3.VIII. 2012 D.W. Wrase [11]" (cSch).

Etymology. The specific epithet (adjective) is derived from the name of the province where the type locality is situated and represents an analogy to *L. shaanxiense*, the name of its closest relative.



Figs 19–32. *Lathrobium gansuense* (**19–26**) and *L. declive* (**27–32**). **19, 27.** Forebody. **20, 28.** Male sternite VII. **21, 29.** Male sternite VIII. **22–23, 30–31.** Aedeagus in lateral and in ventral view. **24, 32.** Sclerotized internal structure of aedeagus in lateral view. **25.** Female sternite VIII. **26.** Female tergites IX–X. Scale bars: 19, 27: 1.0 mm; 20–23, 25–26, 28–31: 0.5 mm; 24, 32: 0.1 mm.

Description. Small species without sexual size dimorphism; body length 5.3–6.8 mm; length of forebody 2.5–2.8 mm. Coloration: forebody dark reddish-brown to dark-brown; legs and antennae pale-reddish.

Head (Fig. 19) oblong, usually 1.10–1.15 times as long as broad; posterior angles weakly pronounced; punctation rather coarse and dense, sparser in median dorsal portion; interstices narrower than average diameter of punctures in lateral, anterior, and posterior portion, somewhat broader than diameter of punctures in median dorsal portion; microsculpture very shallow, but distinct. Eyes relatively large, composed of > 50 weakly defined ommatidia, approximately 1/3 the length of postocular region in dorsal view, and approximately 0.35 times as long as postocular region in lateral view. Antenna 1.4–1.5 mm long.

Pronotum (Fig. 19) 25–1.30 times as long as broad and 1.05–1.10 times as broad as head; punctation similar to that of head, but somewhat sparser; midline broadly impunctate; interstices without microsculpture.

Elytra (Fig. 19) moderately short, approximately 0.6 times as long as pronotum; punctation rather sparse, fine, and shallow; interstices without microsculpture. Hind wings completely reduced. Protarsomeres I–IV with moderate sexual dimorphism.

Abdomen with fine and dense punctation, punctures only slightly sparser on tergite VII than on III–VI; interstices with fine and distinct microreticulation; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex, without sexual dimorphism.

♂: protarsomeres I–IV moderately and rather variably dilated; sternites III–VI unmodified; sternite VII moderately transverse, with rather extensive and shallow median impression posteriorly, this impression with rather weakly modified long black setae, posterior margin weakly and broadly concave, weakly asymmetric (Fig. 20); sternite VIII asymmetric, weakly transverse, with distinct, oblique median impression, this impression with cluster of moderately modified black setae on either side of middle, posterior margin with shallow excision of asymmetric shape and in asymmetric position (Fig. 21); aedeagus (Figs 22–24) approximately 0.9 mm long; ventral process distinctly asymmetric, broad in ventral view, and with acute and somewhat twisted and curved apex; dorsal plate lamellate, rather weakly sclerotized, apically conspicuously acute, needle-shaped, and with long, thin, and slender basal portion; internal sac with dark membranous structures and with short and stout, apically somewhat wrench-shaped sclerotized internal structure.

♀: protarsomeres I–IV distinctly dilated, but at least slightly less so than in male; sternite VIII approximately 0.8 mm long, moderately oblong, posterior margin convexly produced in the middle (Fig. 25); tergite IX anteriorly broadly undivided, posterior process short; tergite X distinctly shorter than tergite IX in the middle (Fig. 26).

Comparative notes. *Lathrobium gansuense* is undoubtedly most closely related to, and probably the sister species of *L. shaanxiense*, as can be inferred from the similar external morphology, the similar female terminalia, and particularly the similarly derived morphology of the male sexual characters (shape and chaetotaxy of the male sternites VII and VIII; aedeagus with distinctly asymmetric, basally broad, and apically acute ventral process, with long and slender basal portion of the dorsal plate, and with somewhat hook-shaped sclerotized spine in internal sac). It differs from *L. shaanxiense* by the apically less acute ventral process of the aedeagus (both in lateral and in ventral view), the apically needle-shaped dorsal plate (*L. shaanxiense*: apically convex in dorsal view), the shape of the internal sclerotized structure of the aedeagus, the less asymmetric shape and chaetotaxy of the male sternite VII, the more asymmetric male sternite VIII, and the slightly more oblong female sternite VIII.

Distribution and natural history. The species was discovered in two geographically close localities at and near the Lazikou pass in the western Qinling Shan, to the northwest of Longnan, southern Gansu (Fig. 42). Numerous specimens were sifted from moss and leaf litter in a moist pasture with shrubs at an altitude of 3000 m, some also in a mixed forest near a stream at an altitude of 2260 m, in the latter locality together with *L. lunatum*. Three of the paratypes are teneral.

Lathrobium declive sp. n. (Figs 27–32, 42)

Type material. Holotype ♂: "CHINA - Shaanxi, Qinling Shan, Houzhenzi to Taibai Shan, 3500 m, alpine meadows, 2.–4.VIII.1998, leg. Trýzna et al. / Holotypus ♂ *Lathrobium declive* sp. n., det. V. Assing 2012" (cAss).

Etymology. The specific epithet (Latin, adjective: oblique) refers to the shape of the posterior margin of the male sternite VIII.

Description. Body length 5.4 mm; length of forebody 2.7 mm. Coloration: forebody blackish-brown; abdomen blackish; legs and antennae pale-reddish.

External characters (Fig. 27) as in *L. gansuense*, except as follows:

Head with very shallow traces of microsculpture; abdomen with less pronounced microsculpture and with slightly sparser punctation.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII moderately transverse, pubescence not distinctly modified, posterior margin broadly concave in the middle, weakly asymmetric (Fig. 28); sternite VIII with rather deep and strongly asymmetric posterior excision, pubescence weakly modified (Fig. 29);

aedeagus (Figs 30–31) approximately 0.9 mm long; ventral process distinctly asymmetric, basally broad and apically acute in ventral view, subapically curved in lateral view; dorsal plate thin and lamellate, weakly sclerotized, and apically acute; internal sac with dark membranous structures and with moderately short, slender, and apically somewhat wrench-shaped sclerotized internal structure (Fig. 32).

♀: unknown.

Comparative notes. *Lathrobium declive* is clearly closely related to *L. gansuense* and allied species, as is suggested by the similarly derived morphology of the male sternite VIII and the aedeagus. Among the species of the *L. gansuense* group, it is externally most similar to *L. gansuense* and *L. shaanxiense*, but readily distinguished from them by the shape and chaetotaxy of the male sternite VIII, as well as by the shapes of the ventral process and the internal sclerotized structure of the aedeagus.

Distribution and natural history. The type locality is situated near the summit of the Taibai Shan, the highest mountain in the Qinling Shan range (Fig. 42). According to the data provided on the label, the holotype was collected in an alpine meadow at an altitude of 3500 m.

Lathrobium shaanxiense Chen, Li & Zhao, 2005
(Figs 33–38, 42)

Type material examined. Paratype ♂: "China: Shaanxi Prov., Baoji City, Taibaishan, alt. 2350–2750, 14-IIV-2004 [sic], Hu, Tang&Zhu leg. / Paratype *Lathrobium shaanxiensis* [sic] / Chen, Li & Zhao, 2012 [sic], SHNU collections" (cAss).

Additional material examined. China: Shaanxi: 2♂, 2♀ [1♀ teneral], SW Meixian, Qinling Shan, 34°01'31"N, 107°24'13"E, 1870 m, N-slope, secondary deciduous forest, near stream, litter and grass sifted, 26.VII.2012, leg. Assing & Schülke (cAss, cSch).

Comment. The external and particularly the male sexual characters leave no doubt that this species belongs to the *L. gansuense* group. Among the species of this group, it appears to be most closely allied to *L. declive* and *L. gansuense*, with which it shares the similarly derived shape and chaetotaxy of the male sternite VIII, as well as the similar morphology of the aedeagus. The male and female sexual characters are illustrated in Figs 33–38.

The above specimens represent the first records since the original description, which is based on a male holotype and a male paratype from "Taibaishan Conv. (alt. 2750–3300 m)" (Chen et al. 2005). The distribution is mapped in Fig. 42. One of the above females is teneral.

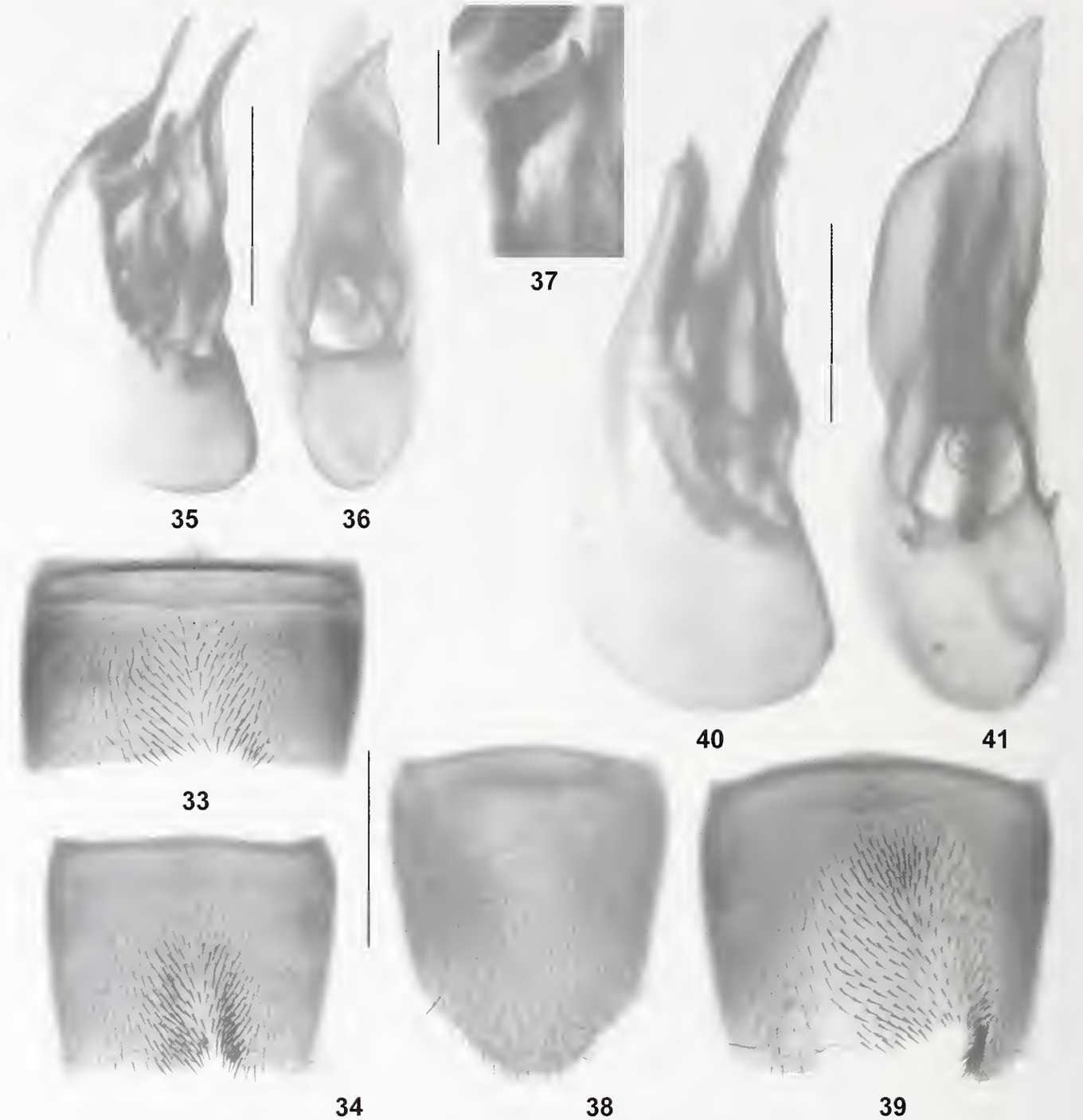
Lathrobium heteromorphum Chen, Li & Zhao, 2005
(Figs 39–41)

Type material examined. Paratype ♂: "China: Shaanxi Prov., Baoji City, Taibaishan, alt. 2350–2750, 14-IIV-2004 [sic], Hu, Tang&Zhu leg. / Paratype *Lathrobium heteromorphum* / Chen, Li & Zhao, 2012 [sic], SHNU collections" (cAss).

Comment. This species belongs to the *L. gansuense* group, as can be inferred particularly from the similarly derived morphology of the asymmetric ventral process of the aedeagus and by the shape and chaetotaxy of the strongly asymmetric male sternite VIII. The latter and the shape of the morphology of the aedeagus somewhat resemble those of *L. declive*, from which *L. heteromorphum* is readily distinguished by the distinctly larger body size (length of forebody: 3.2 mm), the paler coloration (forebody reddish; abdomen brown with reddish apex), the distinctly denser punctation of the forebody, the much more strongly modified setae on the male sternite VIII (Fig. 39), and the distinctly larger (1.5 mm) and differently shaped aedeagus (Figs 40–41). *Lathrobium heteromorphum* has been recorded only from the type locality, the Taibai Shan.

Lathrobium biapicale sp. n. (Figs 42–54)

Type material. Holotype ♂: "CHINA [19] - N-Sichuan, N Songpan, 33°03'15"N, 103°43'36"E, 3390 m, spruce forest, sifted, 9.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium biapicale* sp. n., det. V. Assing 2012" (cAss). Paratypes: 11♂, 19♀: same data as holotype (cAss; MNHUB); 6♂, 4♀: "CHINA: N-Sichuan [CH12-19], 47 km N Songpan, road S 301 km 118, N Gongangling pass, 33°03'15"N, 103°43'36"E, 3390 m, spruce forest with shrubs, litter, moss & mushrooms sifted, 9.VIII.2012, leg. M. Schülke" (cSch); 3♂, 1♀: "CHINA [21]- N-Sichuan, N Songpan, 33°04'31"N, 103°42'38"E, 3230 m, spruce forest, sifted, 9.VIII.2012, V. Assing" (cAss); 3♂, 1♀: "CHINA: N-Sichuan [CH12-21], 49 km N Songpan, road S 301 km 114, N Gongangling pass, 33°04'31"N, 103°42'38"E, 3230 m, spruce forest, litter, moss & mushrooms sifted, 9.VIII.2012, leg. M. Schülke" (cSch); 1♀: "CHINA: N-Sichuan [CH12-20], 60 km N Songpan, road S 301 km 103, N Gongangling pass, 33°10'06"N, 103°43'13"E, 3000 m, forest near creek, litter sifted, 9.VIII.2012, leg. M. Schülke" (cSch); 3♂, 2♀: "CHINA [23]- N-Sichuan, pass ENE Songpan, 3920 m, 32°44'23"N, 103°44'31"E, sifted, 10.VIII.2012, V. Assing" (cAss); 16♂, 24♀: "CHINA [24]- N-Sichuan, pass NW Songpan, 3600 m, 32°55'32"N, 103°25'56"E, sifted, 11.VIII.2012, V. Assing" (cAss, MNHUB); 5♂, 16♀: "CHINA: N-Sichuan [CH12-24], pass 35 km NNW Songpan, 32°55'32"N, 103°25'56"E, 3600 m, moist N-



Figs 33–41. *Lathrobium shaanxiense* (**33–38**) and *L. heteromorphum* (**39–40**). **33.** Male sternite VII. **34, 39.** Male sternite VIII. **35–36, 40–41.** Aedeagus in lateral and in ventral view. **37.** Sclerotized internal structure of aedeagus in lateral view. **38.** Female sternite VIII. Scale bars: 33–36, 38–41: 0.5 mm; 37: 0.1 mm.

slope with Salix and other shrubs, litter, grass roots & moss sifted, 11.VIII.2012, leg. M. Schülke" (cSch); 8♂, 10♀: "CHINA (N-Sichuan) pass 35 km NNW Songpan 32°55'32"N, 103°25'56"E, 3600 m, (moist N-slope with Salix, other shrubs, litter, moss, soil sifted, 11.VIII.2012, D.W. Wrase [24]" (cSch); 7♂, 7♀: "CHINA [26] - N-Sichuan N Songpan, 33°15'26"N, 103°46'03"E, 2700 m, spruce forest with birch, 12.VIII.2012, V. Assing" (cAss, MNHUB); 7♂, 3♀: "CHINA: N-Sichuan [CH12-26], 70 km N Songpan, road S 301, above Gan lake, N Gongangling pass, 33°15'26"N, 103°46'03"E, 2700 m, spruce forest with birch, litter, mushrooms, moss, and dead wood sifted, 12.VIII.2012, leg. M. Schülke" (cSch, ZFMK); 1♀: "CHINA (N.Sichuan) 70 km N Songpan, road S 301, above Gan lake, 33°15'26"N, 103°46'03"E, 2700 m (spruce forest with birch, litter, moss, soil sifted)

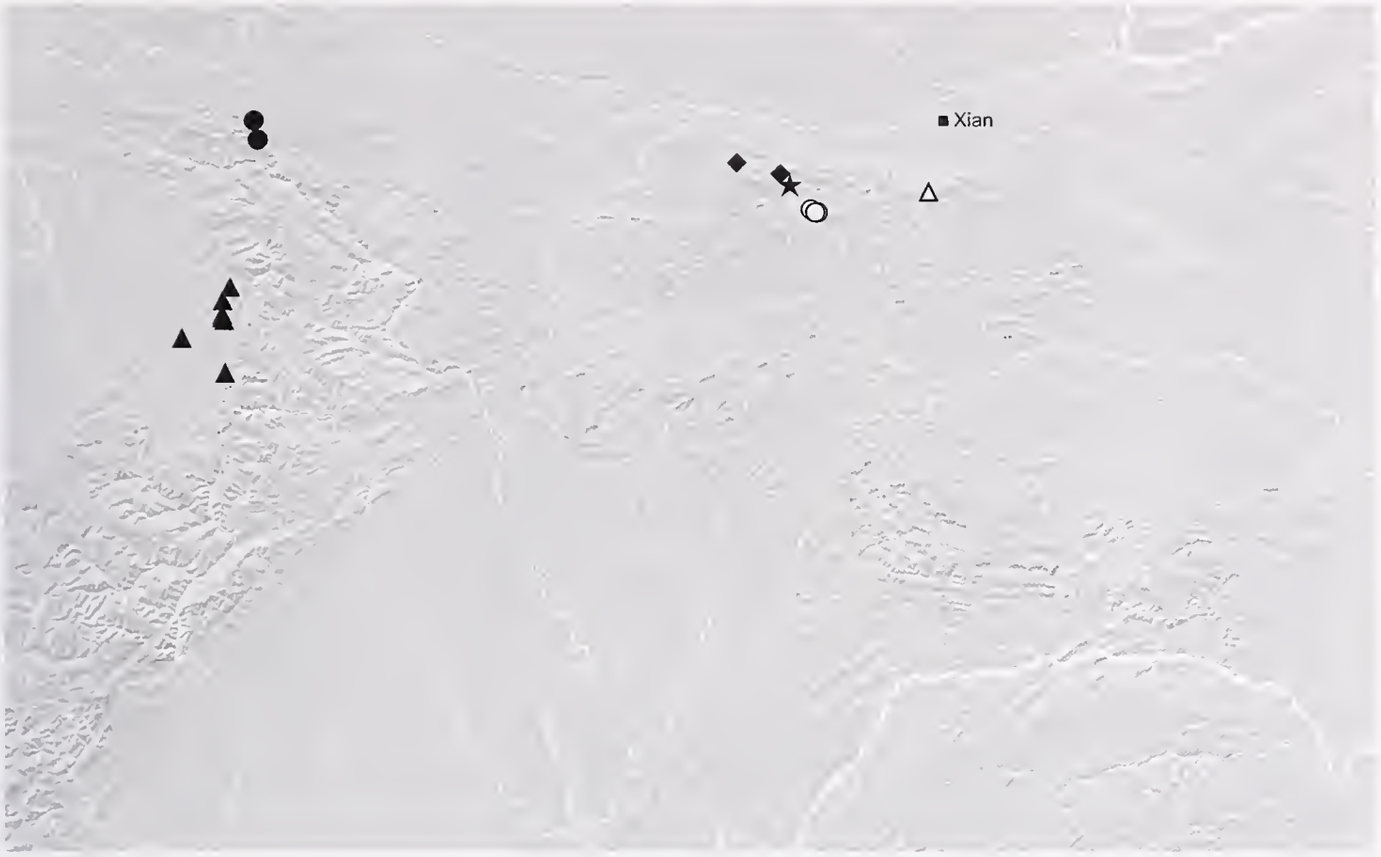


Fig. 42. Distributions of species of the *L. gansuense* group (filled symbols) and the *L. varisternale* group (open symbols): *L. biapicale* (filled triangles); *L. gansuense* (filled circles); *L. shaanxiense* (filled diamonds); *L. declive* (filled star); *L. concameratum* (open circles); *L. sociabile* (open triangle).

12.VIII.2012, D.W. Wrase" (cSch); 1♂: "CHINA (Sichuan) Pass zw. Zhangla u. Jiuzhaigou, 3400–3500 m, 30.VI.1996, W. Heinz leg." (cSme).

Etymology. The specific epithet (Latin, adjective: with two apices) alludes to the apically bifid ventral process of the aedeagus.

Description. Size subject to weakly pronounced sexual dimorphism, males on average slightly larger; body length 6.0–8.2 mm (♂), 5.5–7.5 mm (♀); length of forebody 3.0–3.5 mm (♂), 2.8–3.4 mm (♀). Coloration: forebody dark-brown to blackish-brown; abdomen blackish-brown to blackish; legs dark-reddish to dark-brown with paler tarsi; antennae reddish.

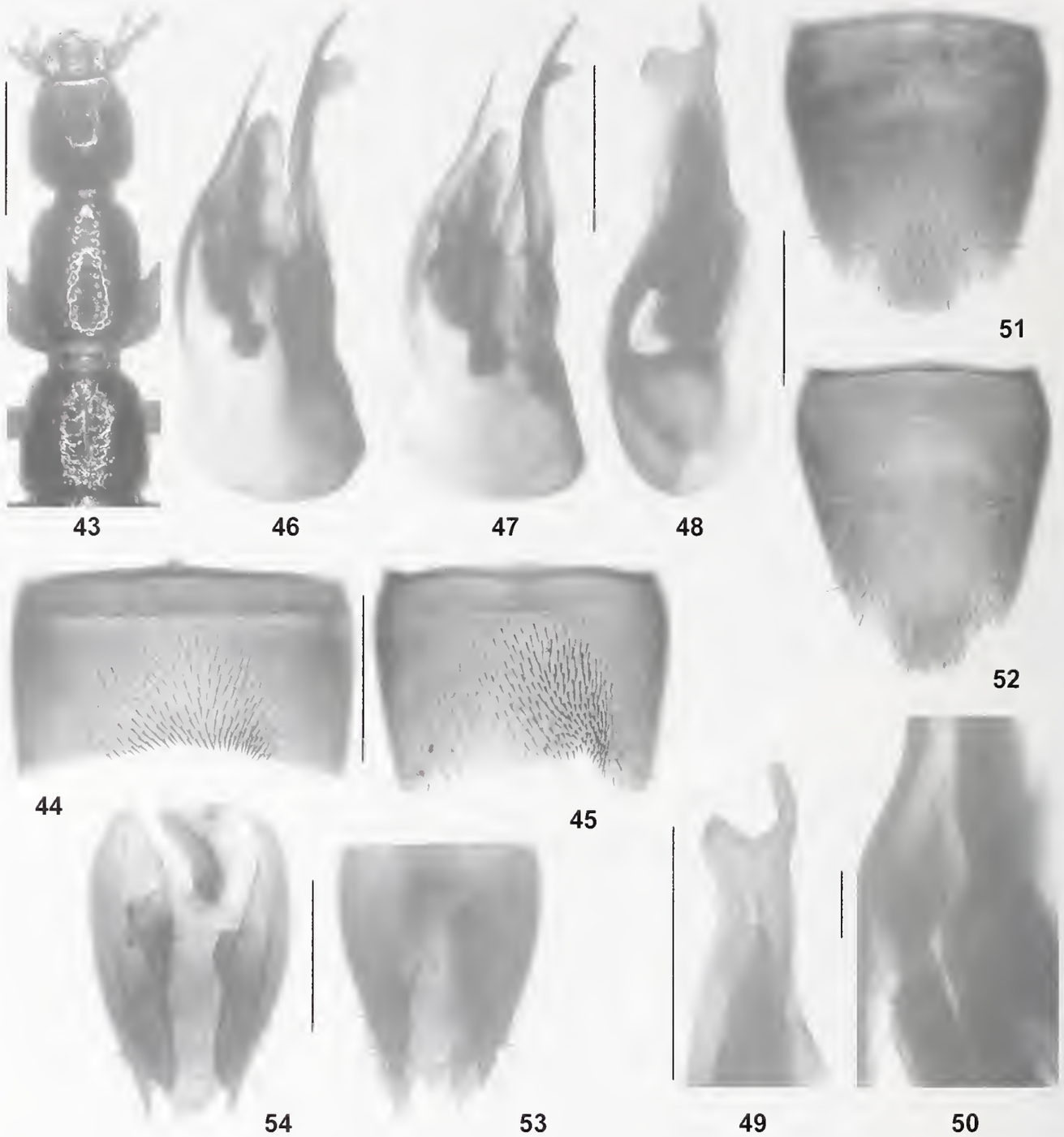
Head (Fig. 43) oblong, 1.05–1.10 times as long as broad; posterior angles moderately pronounced, rounded but noticeable; punctation moderately coarse and of somewhat variable density, sparser in median dorsal portion; interstices on average approximately as broad as diameter of punctures, somewhat broader than diameter of punctures in median dorsal portion; microsculpture shallow, but distinct. Eyes relatively large, composed of > 50 weakly defined ommatidia, 1/4–1/3 the length of postocular region in dorsal view. Antenna 1.6–1.8 mm long.

Pronotum (Fig. 43) approximately 1.3 times as long as broad and 1.05 times as broad as head; punctation similar to that of head; midline broadly impunctate; interstices without microsculpture.

Elytra (Fig. 43) moderately short, approximately 0.6 times as long as pronotum; punctation sparse, fine, and shallow; interstices without microsculpture. Hind wings completely reduced. Protarsomeres I–IV with moderate sexual dimorphism.

Abdomen with fine and dense punctation, punctures only slightly sparser on tergite VII than on tergites III–VI; interstices with fine and shallow microreticulation; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex to almost truncate, without evident sexual dimorphism.

♂: protarsomeres I–IV moderately and rather variably dilated; sternites III–VI unmodified; sternite VII strongly transverse and somewhat asymmetric, with rather extensive and shallow median impression, this impression with weakly modified long black setae, posterior margin broadly concave, with broad median concavity in asymmetric position (Fig. 44); sternite VIII asymmetric, strongly transverse, with oblique median impression, this impression with cluster of moderately modified short black setae, posterior margin broadly and very asymmetrically



Figs 43–54. *Lathrobium biapicale*. **43.** Forebody. **44.** Male sternite VII. **45.** Male sternite VIII. **46–48.** Aedeagus in lateral and in ventral view. **49.** Apical portion of ventral process of aedeagus in ventral view. **50.** Sclerotized internal structure of aedeagus in lateral view. **51–52.** Female sternite VIII. **53.** Female tergites IX–X. **54.** Apex of female abdomen in ventral view. Scale bars: 43: 1.0 mm; 44–49, 51–54: 0.5 mm; 50: 0.1 mm.

excised (Fig. 45); aedeagus (Figs 46–50) 1.4–1.5 mm long; ventral process distinctly asymmetric, broad in ventral view, apically with two lobes, the left one lamellate and the right one shaped like a spine (ventral view); dorsal plate lamellate, thin, and apically acute, without median carina; internal sac with short forked sclerotized spine and with additional dark membranous structures.

♀: protarsomeres I–IV distinctly dilated, but at least slightly less so than in male; sternite VIII (Figs 51–52) approximately 1.0 mm long, oblong, posterior margin with truncate projection in the middle; tergite IX anteriorly broadly undivided, posterior processes short; tergite X longer than tergite IX in the middle (Fig. 53); abdominal apex ventrally with oblique amorphous, moderately sclerotized sclerite (Fig. 54).

Intraspecific variation. The species is subject to rather pronounced intraspecific variation of size, the shape of the protarsomercs I–IV, the shape of the femalc sternite VIII (Figs 51–52) and also of the shape of the apices of thc ventral process of the aedeagus. Both apices may vary in shape and length (Figs 48–49).

Comparative notes. The similarly derived shapes and chaetotaxy of the asymmetric male sternites VII and VIII, the morphology of the aedeagus (asymmetric ventral process; presence of a short sclerotized spine in internal sac; long, lamellate, and thin dorsal plate), the morphology of the female terminalia (posterior processes of tergite IX short; tergite IX anteriorly broadly undivided), and the external characters (oblong head; finely punctate elytra) suggest that *L. biapicale* belongs to the *L. gansuense* species group. It is distinguished from other representatives of this group particularly by the conspicuous morphology of the ventral process of the aedeagus, as well as by the shapes and chaetotaxy of the male sternites VII and VIII, and by the shape of the female sternite VIII. It differs from the syntopic *L. lentum* by the paler coloration, the more slender pronotum, the longer legs (particularly the longer tarsi), the more slender habitus, and by the completely different sexual characters.

Distribution and natural history. The species was found in great numbers in various localities near Songpan, northern Sichuan (Fig. 42). The specimens were sifted from leaf litter, moss, and grass roots in montane primary mixed and coniferous forests (spruce, birch, etc.), in subalpine rhododendron vegetation, and in subalpine shrub vegetation at altitudes of 2700–3920 m, in one locality together with *L. detruncatum* and *L. lentum*.

Lathrobium detruncatum sp. n. (Figs 18, 55–62)

Type material. Holotype ♂: "CHINA [24]- N-Sichuan, pass NW Songpan, 3600 m, 32°55'32"N, 103°25'56"E, sifted, 11.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium detruncatum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 1♂, 1♀: same data as holotype (cAss); 2♂: "CHINA: N-Sichuan [CH12-24], pass 35 km NNW Songpan, 32°55'32"N, 103°25'56"E, 3600 m, moist N-slope with Salix and other shrubs, litter, grass roots & moss sifted, 11.VIII.2012, leg. M. Schülke" (cSch); 2♂: "CHINA (N-Sichuan) pass 35 km NNW Songpan 32°55'32"N, 103°25'56"E, 3600 m, (moist N-slope with Salix, other shrubs, litter, moss, soil sifted) 11.VIII.2012, D.W. Wrase [24]" (cAss).

Etymology. The specific epithet (Latin, adjective) alludes to the apically truncate dorsal plate of the aedeagus.

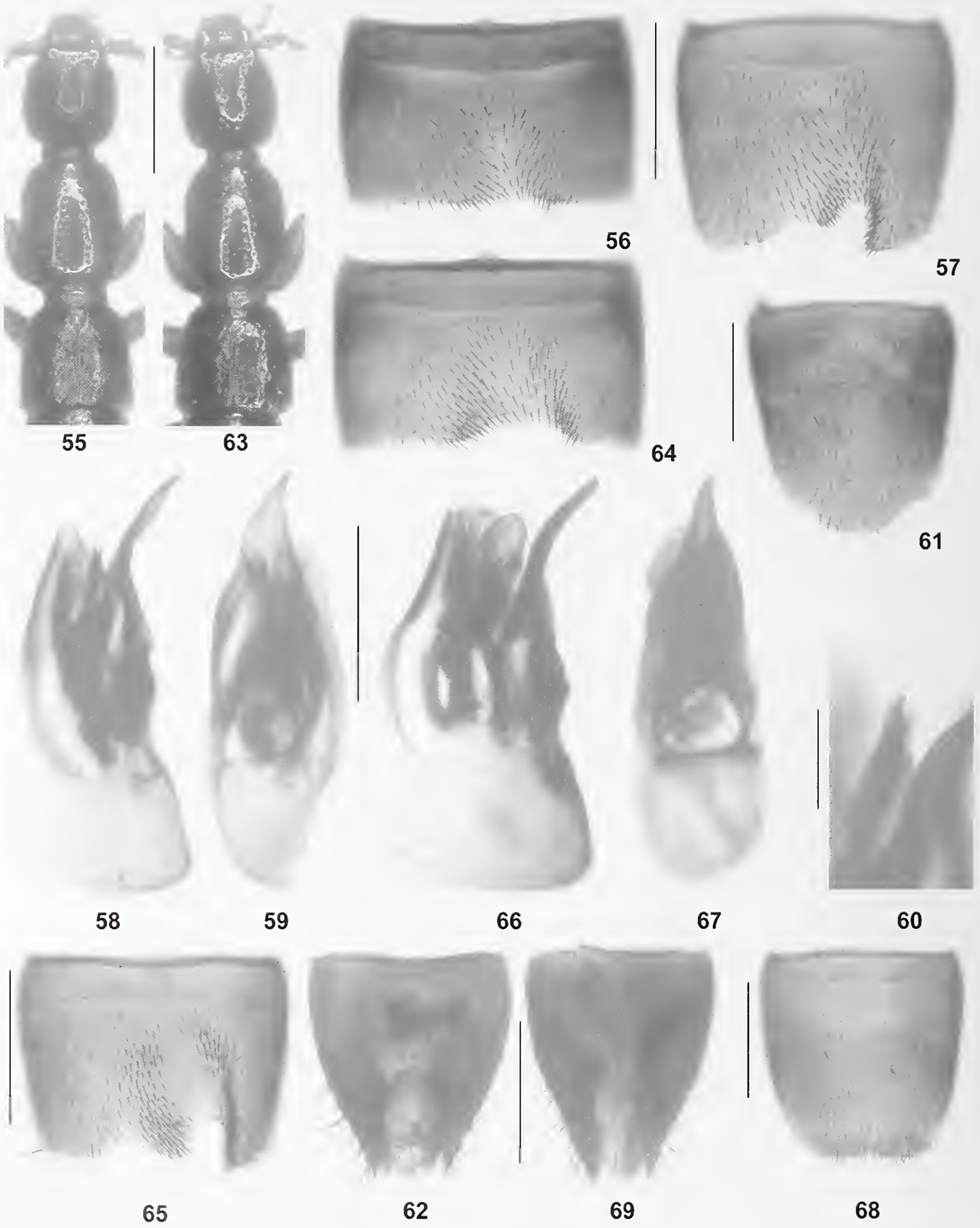
Description. Body length 7.0–7.5 mm (♂), 7.0 mm (♀); length of forebody 3.1–3.2 mm (♂), 3.1 mm (♀). Coloration: body blackish; legs yellowish-brown; antennae reddish. Microreticulation of head very shallow, often almost obsolete, except for frons where the microsculpture is usually more distinct. Other external characters (Fig. 55) as in *L. biapicale*.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 56) strongly transverse and somewhat asymmetric, with shallow and oblique median impression, this impression with weakly modified long black setae, posterior margin truncate, with very shallow median concavity in asymmetric position and with fringe of long marginal setae; sternite VIII (Fig. 57) strongly asymmetric, distinctly transverse, with oblique median impression, this impression with moderately modified short black setae posteriorly, posterior margin broadly, deeply, and very asymmetrically excised; aedeagus (Figs 58–60) approximately 1.2 mm long; ventral process distinctly asymmetric and apically acute; dorsal plate lamellate, thin, and apically truncate, without median carina, and with long and weakly sclerotized basal portion; internal sac with short forked sclerotized spine and with additional dark membranous structures.

♀: protarsomeres I–IV distinctly dilated, but slightly less so than in male; sternite VIII approximately 1.0 mm long, oblong, posterior margin with convex projection in the middle (Fig. 61); tergite IX anteriorly broadly undivided, posterior processes short; tergite X slightly shorter than tergite IX in the middle (Fig. 62).

Comparative notes. The similarly derived shapes and chaetotaxy of the asymmetric male sternites VII and VIII, the morphology of the aedeagus (asymmetric ventral process; presence of a short forked sclerotized spine in internal sac; long, lamellate, and thin dorsal plate), the morphology of the female terminalia (posterior processes of tergite IX short; tergite IX anteriorly broadly undivided), and the external characters (oblong head; finely punctate elytra) indicate that *L. detruncatum* belongs to the *L. gansuense* species group. Together with the following species, its hypothesized adelphotaxon, it is most closely related to *L. biapicale*, as can be inferred from the male secondary sexual characters and from the presence of a forked sclerotized spine in the internal sac of the aedeagus. It is distinguished from other representatives of this group particularly by the conspicuous morphology of the aedeagus, as well as by the shapes and chaetotaxy of the male sternites VII and VIII, and by the shape of the female sternite VIII, from the syntopic *L. biapicale* additionally by the on average paler legs and the more indistinct or even nearly obsolete microsculpture of the head.

Distribution and natural history. The type locality is situated to the northwest of Songpan, northern Sichuan (Fig.



Figs 55–69. *Lathrobium detruncatum* **(55–62)** and *L. brevisternale* **(63–69). 55, 63.** Forebody. **56, 64.** Male sternite VII. **57, 65.** Male sternite VIII. **58–59, 66–67.** Aedeagus in lateral and in ventral view. **60.** Sclerotized internal structure of aedeagus in lateral view. **61, 68.** Female sternite VIII. **62, 69.** Female tergites IX–X. Scale bars: 55, 63: 1.0 mm; 56–59, 61–62, 64–69: 0.5 mm; 60: 0.1 mm.

18). The specimens were sifted from grass roots, leaf litter, and moss on a moist north slope with *Salix* sp. and other shrubs at an altitude of 3600 m, together with numerous specimens of *L. biapicale* and *L. lentum*.

Lathrobium brevisternale sp. n. (Figs 18, 63–69)

Type material. Holotype ♂: "CHINA [22]- N-Sichuan, pass ENE Songpan, 4080 m, 32°44'54''N, 103°43'43''E, sifted, 10.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium brevisternale* sp. n., det. V. Assing 2012" (cAss). Paratypes: 2♀♀: same data as holotype (cAss); 1♀: "CHINA: N-Sichuan [CH12-22], Min Shan, pass 17 km NE Songpan, 32°44'54''N, 103°43'43''E, 4080 m, W-slope with scree and shrubs, litter and moss sifted, 10.VIII.2012, leg. M. Schülke" (cSch).

Etymology. The specific epithet (Latin, adjective) refers to the conspicuously short female sternite VIII, a character distinguishing *L. brevisternale* from all other species treated in this paper.

Description. Body length 7.3 mm (♂), 6.3–7.0 mm (♀); length of forebody 3.1 mm (♂), 2.9–3.0 mm (♀). Coloration: body blackish; legs brown; antennae reddish. Other external characters (Fig. 63) as in *L. biapicale*.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 64) strongly transverse and distinctly asymmetric, with shallow oblique median impression, this impression with weakly modified long black setae, posterior margin truncate, with broad and distinct median concavity in asymmetric position; sternite VIII (Fig. 65) strongly asymmetric, distinctly transverse, with distinct oblique latero-median impression, this impression extensively without setae in the middle and delimited by oblong cluster of moderately modified short black setae on either side, posterior margin strongly modified, distinctly bisinuate, posterior excision deep, rather narrow, and in lateral position; aedeagus (Figs 66–67) approximately 1.2 mm long; ventral process distinctly asymmetric and apically acute; dorsal plate lamellate, thin, and apically truncate, without median carina, and with long and weakly sclerotized basal portion; internal sac with short forked sclerotized spine and with additional dark membranous structures.

♀: protarsomeres I–IV distinctly dilated, but less so than in male; sternite VIII approximately 0.9 mm long, approximately as long as broad, posterior margin broadly convex, in the middle weakly concave (Fig. 68); tergite IX anteriorly broadly undivided, posterior processes short; tergite X approximately as long as tergite IX in the middle (Fig. 69).

Comparative notes. *Lathrobium brevisternale* is probably the adelphotaxon of *L. detruncatum*, with which it not only shares similar external characters, but also similar modifications of the male sternites VII and VIII (sternite VII transverse, with oblique impression, and with shallow posterior concavity in asymmetric position; sternite VIII strongly asymmetric, with oblique impression, and with rather deep posterior excision in lateral position), as well as an aedeagus with an asymmetric, basally broad, and apically very acute ventral process and with an apically truncate dorsal plate. It differs from *L. detruncatum* by the darker legs, the more pronounced posterior concavity of the male sternite VII, the shape and chaetotaxy of the male sternite VIII, the basally broader, apically more slender (ventral view), and narrowly truncate apex (lateral view) of the ventral process of the aedeagus, and by the shorter, posteriorly not produced female sternite VIII.

Distribution and natural history. The type locality is situated in the Min Shan to the northeast of Songpan, northern Sichuan (Fig. 18). The specimens were sifted from litter beneath low subalpine shrub vegetation on a west slope with scree, at an altitude of 4080 m. No other *Lathrobium* species was present at the site.

The *Lathrobium effeminatum* species group

Lathrobium effeminatum sp. n. (Figs 70–77)

Type material. Holotype ♂: "China Shaanxi Qinling pass rd. Zhouzhi Foping 105 km SW Xi'an / N-slope 1700 m 33°46'N 107°58'E 3.VII.2001 A. Smetana [C91] / Holotypus ♂ *Lathrobium effeminatum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 4♂, 3♀: same data as holotype (cSme, cAss); 1♀: "CHINA Shaanxi Qinling Shan pass rd. Zhouzhi Foping 105 km SW Xi'an / N-slope 1990 m 33°44'N 107°59'E 2.VII.2001 A. Smetana [C89]" (cSme); 1♂: "China Shaanxi Qinling Shan above Houzhenzi 115 km WSW Xi'an / 1450 m, 33°50'N 107°47'E 5.VII.2001 A. Smetana [C95b]" (cAss); 1♀: "CHINA [1] - S-Shaanxi, SW Zhouzhi, Qinling Shan, 33°44'02''N, 107°58'06''E, 1900 m, 25.VII.2012, V. Assing" (cAss); 3♂, 10♀: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1700 m, 33°46'N, 107°58'E, leg. M. Schülke [C01-02] / 3.VII.2001, small creek valley, mixed deciduous forest, moss (sifted) [C01-02]" (cSch, cAss, ZFMK); 4♀: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1990 m, 33°44'N, 107°59'E, leg. M. Schülke [C01-01] / 2./4.VII.2001, small creek valley, mixed deciduous forest, bamboo, small meadows, dead wood, mushrooms (sifted) [C01-01]" (cSch, cAss); 1♂: "China: Shaanxi, Qin Ling Shan, 107.56 E, 33.45 N, Autoroute km 93 S of Zhouzhi, 108 km SW Xian, Mountain

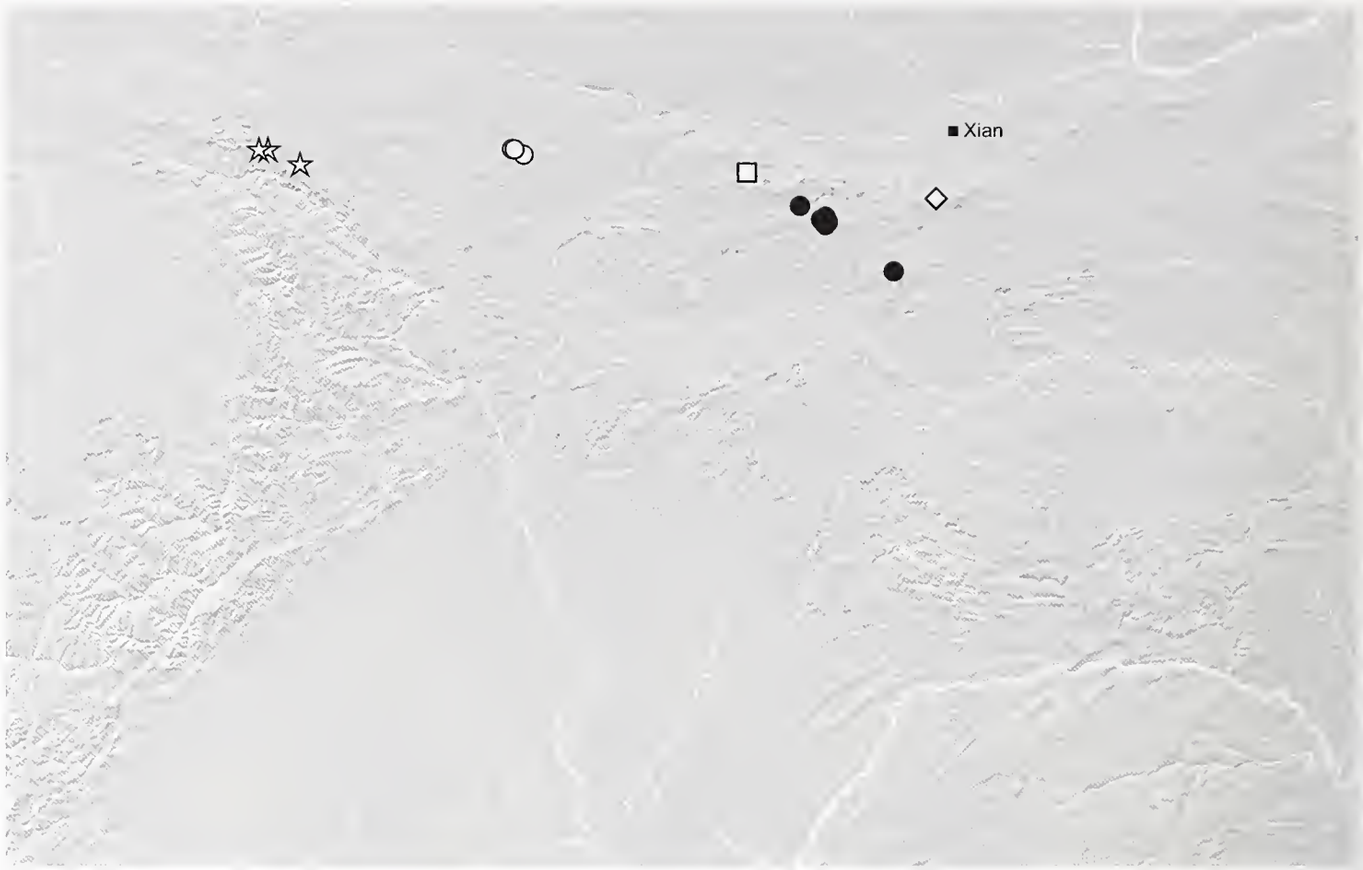


Fig. 70. Distributions of species of the *L. effeminatum* group (filled symbols) and the *L. varisternale* group (open symbols): *L. effeminatum* (filled circles); *L. lunatum* (open stars); *L. biforme* (open circles); *L. varisternale* (open square); *L. brevilobatum* (open diamond).

Forrest [sic], sifted, 1650 m, 1.–2.09.1995, leg. M. Schülke" (cSch); 1♂: "China (Shaanxi) Qin Ling Shan/107.56E 33.45N, autoroute km 93 S Zhouzhi, 108 km SW Xian, mount.forest, 1650 m, 1.–2.IX.95 Wrase" (cSch); 1♀: "CHINA: S-Shaanxi (Qinling Shan), river bank above Houzhenzi, 115 km WSW Xi'an, 1450 m, 33°50'N, 107°47'E, leg. M. Schülke [C01-06] / 5.VII.2001, gravel bank (floating), mixed deciduous forest, most, mushrooms (sifted) [C01-06] (cSch); 2♀: "CHINA (S-Shaanxi) Qinling Shan, river bank above Houzhenzi, 115 km WSW Xi'an, 1450 m, 33°50'N, 107°47'E (mixed decid. for./moss/leaves-sifted) 4.VII.2001 Wrase [06]" (cSch); 6♂, 5♀: "CHINA: Shaanxi Prov., Ningshan County, Huoditang, 33°26'N, 108°27'E, 12.vii.2012, alt. 1,500–1,700 m, Chen, Li, Ma, Zhao & Pan leg." (SNUC); 2♂, 5♀: same data, but "24–25.v.2008, alt. 1,700 m, Huang & Xu leg." (SNUC); 6♂, 5♀: same data, but "Zhouzhi County, Qinling Daoban, 33°43'N, 107°58'E, 4.v.2008, alt. 1,900 m, Huang & Xu leg." (SNUC); 6♂, 7♀, same data, but "Foping County, Foping N. R., 33°32'N, 107°57'E, 18.vii.2004, alt. 1,400–1,800 m, Hu, Tang & Zhu leg." (SNUC).

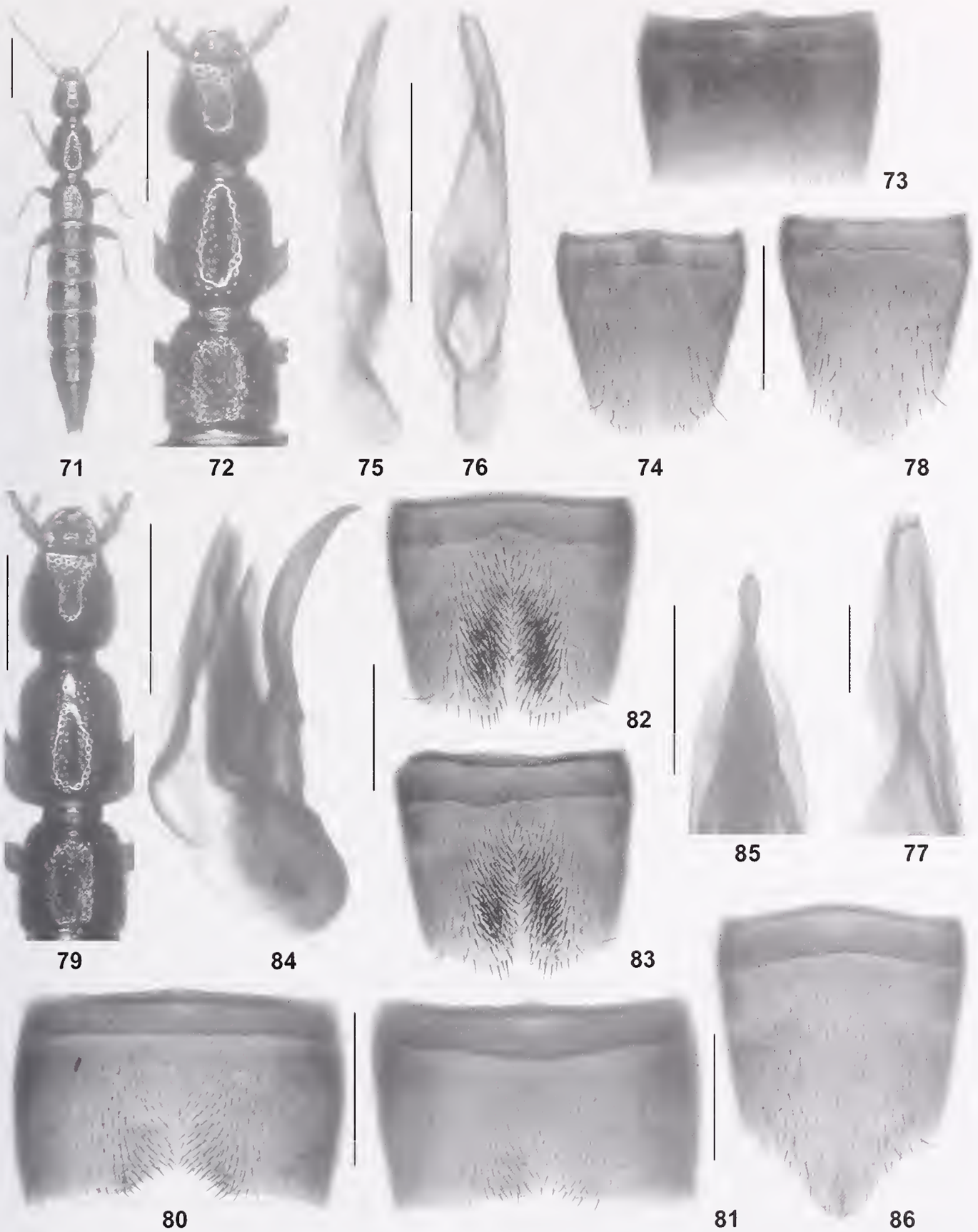
Etymology. The specific epithet (Latin, adjective) alludes to the weakly pronounced male sexual characters.

Description. Small species without sexual size dimorphism; body length 5.0–5.3 mm; length of forebody 2.4–2.8 mm. Habitus as in Fig. 71. Coloration: body brown to dark-brown; legs reddish to brown; antennae reddish.

Head (Fig. 72) weakly oblong or approximately as long as broad; posterior angles moderately pronounced, rounded but noticeable; punctation moderately coarse and of somewhat variable density, sparser in median dorsal portion; microsculpture shallow, but distinct. Eyes moderately large, of somewhat variable size, composed of < 50 weakly defined ommatidia, at least approximately one third the length of postocular region in dorsal view. Antenna 1.4–1.5 mm long.

Pronotum (Fig. 72) approximately 1.25 times as long as broad and slightly broader than head; punctation similar to that of head, but usually somewhat sparser; midline broadly impunctate; interstices without microsculpture.

Elytra (Fig. 72) short, approximately 0.55–0.60 times as long as pronotum; punctation variable, moderately sparse to moderately dense, defined or weakly defined; interstices without microsculpture. Hind wings completely reduced. Protarsomeres I–IV without appreciable sexual dimorphism, weakly dilated in both sexes.



Figs 71–86. *Lathrobium effeminatum* **(71–78)** and *L. varisternale* **(79–86)**. **71.** Habitus. **72, 79.** Forebody. **73, 80–81.** Male sternite VII (80: holotype; 81: paratype). **74, 82–83.** Male sternite VIII (82: holotype; 83: paratype). **75–76, 84.** Aedeagus in lateral and in ventral view. **77.** Apical portion of ventral process of aedeagus in ventro-lateral view. **78, 86.** Female sternite VIII. **85.** Apical portion of aedeagus in ventral view. Scale bars: 71–72, 79: 1.0 mm; 73–76, 78, 80–86: 0.5 mm; 77: 0.1 mm.

Abdomen with fine and moderately dense punctation, punctures distinctly finer and sparser on tergites VII–VIII than on tergites III–VI; interstices with fine and shallow microreticulation; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex, without evident sexual dimorphism.

♂: sternites III–VII [sic] unmodified (Fig. 73); sternite VIII weakly modified, with convex posterior margin (Fig. 74); aedcagus (Figs 75–77) approximately 1.0 mm long, distinctly asymmetric; ventral process slender; internal sac with long and slender semi-transparent spine.

♀: sternite VIII approximately 0.8 mm long, oblong, and with strongly convex posterior margin (Fig. 78); tergite X distinctly longer than the undivided tergite IX in the middle.

Comparative notes. The male sexual characters do not suggest closer affiliations with any of the other species in the study region. In general appearance, *L. effeminatum* is similar to the species of the *L. gansuense* group, with which it also shares the relatively large eyes with weakly defined ommatidia. The species is readily separated from its congeners by the distinctive morphology of the aedeagus, the unmodified male sternite VII, the weakly modified and posteriorly convex sternite VIII, and the weakly dilated protarsi in both sexes.

Distribution and natural history. The distribution of this species is confined to the region to the southeast of the Taibai Shan in the Qinling Shan range, southern Shaanxi (Fig. 70). The specimens were sifted from leaf litter in mixed deciduous forests at altitudes from approximately 1450 up to 1990 m, partly together with *L. sinense*, *L. concameratum*, *L. tectiforme*, and/or *L. brevitergale*.

The *Lathrobium varisternale* species group

Lathrobium varisternale sp. n. (Figs 70, 79–86)

Type material. Holotype ♂: "CHINA [2] - S-Shaanxi, SW Meixian, Qinling Shan, 34°01'31"N, 107°24'13"E, 1870 m, 26.VII.2012, V. Assing / Holotypus ♂ *Lathrobium varisternale* sp. n., det. V. Assing 2012" (cAss). Paratypes: 2♀: same data as holotype (cAss); 2♂, 4♀: "CHINA: S-Shaanxi [CH12-02], 42 km SW Meixian, 34°01'32"N, 107°24'13"E, 1875 m, N-slope, secondary deciduous forest near creek, litter & grass sifted, 26.VII.2012, leg. M. Schülke" (cAss, cSch, ZFMK).

Etymology. The specific epithet (Latin, adjective) refers to the remarkable variability of the posterior concavity of the male sternite VII.

Description. Size subject to distinct sexual dimorphism; body length 7.5–8.0 mm (♂), 6.7–7.5 mm (♀); length of forebody 3.7–3.8 mm (♂), 3.3–3.6 mm (♀). Coloration: forebody dark reddish-brown to blackish-brown; abdomen blackish-brown with dark-reddish apex (segments IX–X, posterior portion of segment VIII); legs and antennae reddish.

Head (Fig. 79) weakly oblong, 1.02–1.07 times as long as broad; punctation rather dense, sparser in median dorsal portion; interstices narrower than, or approximately as broad as diameter of punctures in lateral and posterior portions, somewhat broader than diameter of punctures in median dorsal portion; microsculpture very shallow, sometimes almost obsolete in median dorsal portion. Eyes moderately small, composed of > 30 ommatidia, approximately 1/4 the length of postocular region in dorsal view, and approximately 0.3 times as long as postocular region in lateral view.

Pronotum (Fig. 79) approximately 1.35 times as long as broad; punctation similar to that of head, but somewhat sparser; midline broadly impunctate; interstices without microsculpture.

Elytra (Fig. 79) short, approximately 0.55 times as long as pronotum; punctation moderately dense and somewhat variable, shallow, weakly defined to defined; interstices without microsculpture. Hind wings completely reduced.

Abdomen with fine and dense punctation; interstices with fine and distinct microreticulation, almost matt; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex, without sexual dimorphism.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII with shallow but extensive median impression with black and rather dense black setae, posterior margin weakly to strongly concave in the middle (Figs 80–81); sternite VIII with pronounced oblong median impression, this impression with an oblong cluster of dense black setae on either side of middle, posterior excision small and in symmetric position (Figs 82–83); aedeagus (Figs 84–85) approximately 1.3 mm long, symmetric; ventral process long, slender, curved in lateral view, and apically acute; dorsal plate large, with long, lamellate, basally curved, and distinctly sclerotized apical portion, and with short, weakly sclerotized basal portion; internal sac with dark membranous structures.

♀: protarsomeres I–IV distinctly dilated, but less so than in male; sternite VIII (Fig. 86) oblong, posterior margin strongly produced in the middle; tergite IX anteriorly undivided; tergite X strongly convex in cross-section, only indistinctly longer than tergite IX in the middle.

Intraspecific variation. This species is subject to a remarkable sexual dimorphism of body size. Moreover, the punctation of the forebody and even the shape of the ventral process are rather variable. Finally, the shape of the

posterior concavity of the male sternite VII (in the middle of the posterior margin) may range from weakly to strongly concave (Figs 80–81). However, the possibility that the weakly pronounced posterior concavity of the sternite VII of one of the male paratypes (Fig. 81) represents a teratological malformation cannot be ruled out with certainty.

Comparative notes. *Lathrobium varisternale* is characterized particularly by the male primary and sexual characters. It differs from the following species by the shape and chaetotaxy of the male sternites VII and VIII, as well as by the morphology of the aedeagus and the shape of the female sternite VIII.

Distribution and natural history. The type locality is situated in the Qinling Shan, to the southwest of Meixian (Fig. 70). The specimens were sifted from leaf litter and grass roots in a secondary deciduous forest near a stream at an altitude of 1870 m.

***Lathrobium biforme* sp. n.** (Figs 70, 87–93)

Type material. Holotype ♂: "CHINA [6] - S-Gansu, N Chengxian, W-Qinling Shan, 34°10'20"N, 105°42'10"E, 1830 m, 29.VII.2012, V. Assing / Holotypus ♂ *Lathrobium biforme* sp. n., det. V. Assing 2012" (cAss). Paratypes: 2♂, 3♀: same data as holotype (cAss); 1♂ [teneral], 1♀: "CHINA [4] - S-Gansu, N Chengxian, W-Qinling Shan, 34°08'16"N, 105°46'42"E, 1760 m, 28.VII.2012, V. Assing" (cAss); 1♀: "CHINA: S-Gansu [CH12-04], W-Qinling Shan, 47 km N Chengxian, 34°08'16"N, 105°46'42"E, 1760 m, N-slope, secondary deciduous forest margin, sifted, 28.VII.2012, M. Schülke" (cAss); 1♀: same data, but "[CH12-04c] ... S-slope ... litter between rocks sifted" (cSch); 1♀: "CHINA [5] - S-Gansu, N Chengxian, W-Qinling Shan, 34°10'17"N, 105°42'56"E, 1850 m, 29.VII.2012, V. Assing" (cAss); 1♂: "CHINA: S-Gansu [CH12-05], W-Qinling Shan, 47 km N Chengxian, 34°10'17"N, 105°42'56"E, 1850 m, mixed secondary forest margin, litter sifted, 29.VII.2012, M. Schülke" (cSch); 1♀: "CHINA (S. Gansu) W.Qinling Shan, 47 km N Chengxian 1850 m 34°10'17"N, 105°42'56"E (mixed secondary forest margin, litter sifted) 29.VII.2012 D.W. Wrase [05]" (cSch).

Etymology. The specific epithet (Latin, adjective) refers to the remarkable sexual size dimorphism.

Description. Size subject to pronounced sexual dimorphism; body length 8.0–9.0 mm (♂), 6.5–7.5 mm (♀); length of forebody 3.6–4.0 mm (♂), 3.2–3.5 mm (♀). Coloration: body blackish; legs dark-reddish with somewhat darker femora; antennae reddish.

Other external characters (Fig. 87) highly similar to those of *L. varisternale*.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 88) strongly transverse, narrowly without pubescence along the middle, with shallow median impression posteriorly, this impression with rather weakly modified setae directed obliquely posteromediad, posterior margin weakly concave in the middle; sternite VIII (Fig. 89) moderately transverse, symmetric, with distinct longitudinal impression in the middle, posterior excision moderately deep, moderately broad, and concave anteriorly; aedeagus (Figs 90–91) 1.4–1.5 mm long; ventral process slender and apically distinctly hooked in lateral view, weakly asymmetric in ventral view; dorsal plate long, apical portion lamellate, distinctly sclerotized, with median carina, and apically sharply pointed in dorsal view; internal sac without sclerotized spines, but with very dark membranous structure.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; sternite VIII (Fig. 92) approximately 1.1 mm long, oblong, posterior margin strongly and almost triangularly produced in the middle; tergite IX anteriorly undivided; tergite X strongly convex, almost roof-shaped in cross-section, slightly shorter than tergite IX in the middle; abdominal apex ventrally with large dark amorphous sclerite (Fig. 93).

Comparative notes. Based on the external and sexual characters, *L. biforme* belongs to the *L. varisternale* group. It is distinguished from *L. varisternale* by larger body size, the more pronounced sexual size dimorphism, the darker coloration, and by the male and female sexual characters.

Distribution and natural history. The species was found in three adjacent localities in the western Qinling Shan, to the north of Chengxian (Fig. 70). The partly teneral specimens were sifted from moist leaf leaf litter of secondary mixed and deciduous forests at altitudes of 1760–1850 m, in one locality together with *L. sinense*.

***Lathrobium lunatum* sp. n.** (Figs 70, 94–99)

Type material. Holotype ♂: "CHINA [11] - S-Gansu, W-Qinling Shan, NW Longnan, 34°07'57"N, 103°56'15"E, 2260 m, 3.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium lunatum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 4♂, 5♀ [1♀ teneral]: same data as holotype (cAss); 3♀: "CHINA: S-Gansu [CH12-11], W-Qinling Shan, 125 km NW Longnan, Lazikou pass, S-side, Zhuli valley, 34°07'57"N, 103°56'15"E, 2260 m, / N-slope, mixed forest with oak and pine near creek, litter and dead wood sifted, 3.VIII.2012, leg. M. Schülke" (cSch, ZFMK); 2♂: "CHINA (S.Gansu) W.Qinling Shan, 125 km NW Longnan, Lazikou pass, S.side, Zhuli valley, 34°07'57"N, 103°56'15"E, 2260 m (N.slope, mixed forest, oak, pine

near creek, moss, litter sifted) 3.VIII.2012 D.W. Wrase [11]" (cSch); 1♂, 1♀: "CHINA [9] - S-Gansu, W-Qinling Shan, NW Longnan, 34°03'14"N, 104°10'00"E, 2200 m, 1.VIII.2012, V. Assing" (cAss); 2♀: "CHINA: S-Gansu [CH12-09], W-Qinling Shan, 101 km NW Longnan, 34°03'14"N, 104°10'00"E, 2200 m, SW-slope with shrubs, litter sifted, 1.VIII.2012, leg. M. Schülke" (cSch); 2♂ [1 teneral]: "CHINA [12] - S-Gansu, W-Qinling Shan, NW Longnan, 34°08'14"N, 103°51'57"E, 2300 m, 3.VIII.2012, V. Assing" (cAss); 1♂: "CHINA: S-Gansu [CH12-12], W-Qinling Shan, 128 km NW Longnan, Lazikou pass, S-side, Laolong valley, 34°08'14"N, 103°51'57"E, 2300 m, S-slope with pine and spruce forest, litter sifted, 3.VIII.2012, M. Schülke" (cSch); 1♂: "CHINA (S.Gansu) W-Qinling Shan, 128 km NW Longnan, Lazikou pass, S.side, Laolong valley, 34°08'14"N, 103°51'57"E, 2300 m, (S.slope with pine and spruce forest, litter, moss sifted) 3.VIII.2012, D.W. Wrase [12]" (cAss).

Etymology. The specific epithet (Latin, adjective: crescent-shaped) refers to the shape of the ventral process of the aedeagus.

Description. Size subject to weak sexual dimorphism, males on average slightly larger; body length 8.5–9.5 mm (♂), 7.3–8.5 mm (♀); length of forebody 3.8–4.1 mm (♂), 3.4–4.0 mm (♀). Coloration: body blackish; legs dark-brown with paler tarsi, often also with paler tibiae; antennae reddish. Posterior margin of tergite VIII rather indistinctly, obtusely angled in the middle in both sexes. Other external characters (Fig. 94), except for the slightly finer punctation of the head, highly similar to those of *L. biforme*.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 95) strongly transverse, with distinct median impression posteriorly, this impression with numerous moderately modified setae directed obliquely postero-mediad, posterior margin broadly concave, in the middle distinctly concave; sternite VIII (Fig. 96) weakly transverse, symmetric, with rather shallow, posteriorly widened median impression, this impression narrowly without setae in the middle, on either side of middle with extensive cluster of dense black setae, posterior excision very shallow; aedeagus (Fig. 97) approximately 1.3 mm long; ventral process laterally compressed, subapically curved (lateral view), and apically acute; dorsal plate lamellate, apically pointed (dorsal view), and with pronounced median carina, basal portion distinct and moderately long; internal sac with dark membranous structure.

♀: protarsomeres I–IV distinctly dilated, somewhat less so than in male; sternite VIII (Fig. 98) approximately 1.2 mm long, oblong, posteriorly strongly produced and almost acutely pointed; tergite IX undivided; tergite X convex in cross-section, distinctly longer than tergite IX in the middle (Fig. 99); abdominal apex ventrally with weakly sclerotized amorphous sclerite.

Comparative notes. Like the preceding species, *L. lunatum* belongs to the *L. varisternale* group. It is distinguished from the externally highly similar *L. biforme* by the shape and chaetotaxy of the male sternites VII and VIII, as well as by the completely different morphology of the aedeagus (shape of ventral process, pronounced carina of the dorsal plate) and by the female terminalia (shape of sternite VIII, relative length of tergites IX and X, and the amorphous ventral sclerite).

Distribution and natural history. The species was found in three localities at or near the Lazikou pass, to the northwest of Longnan, in the western Qinling Shan, southern Gansu (Fig. 70). The specimens were sifted from leaf litter beneath shrubs, in a mixed forest, and in a coniferous forest at altitudes of 2200–2300 m, together with *L. sinense* and *L. gansuense*. Two paratypes are teneral.

***Lathrobium falcatum* sp. n.** (Figs 100–104, 111)

Type material. Holotype ♂: "CHINA: S-Gansu [CH12-04], W-Qinling Shan, 47 km N Chengxian, 34°08'16"N, 105°46'42"E, 1760 m, N-slope, secondary deciduous forest margin, sifted, 28.VII.2012, M. Schülke / Holotypus ♂ *Lathrobium falcatum* sp. n., det. V. Assing 2012" (cAss).

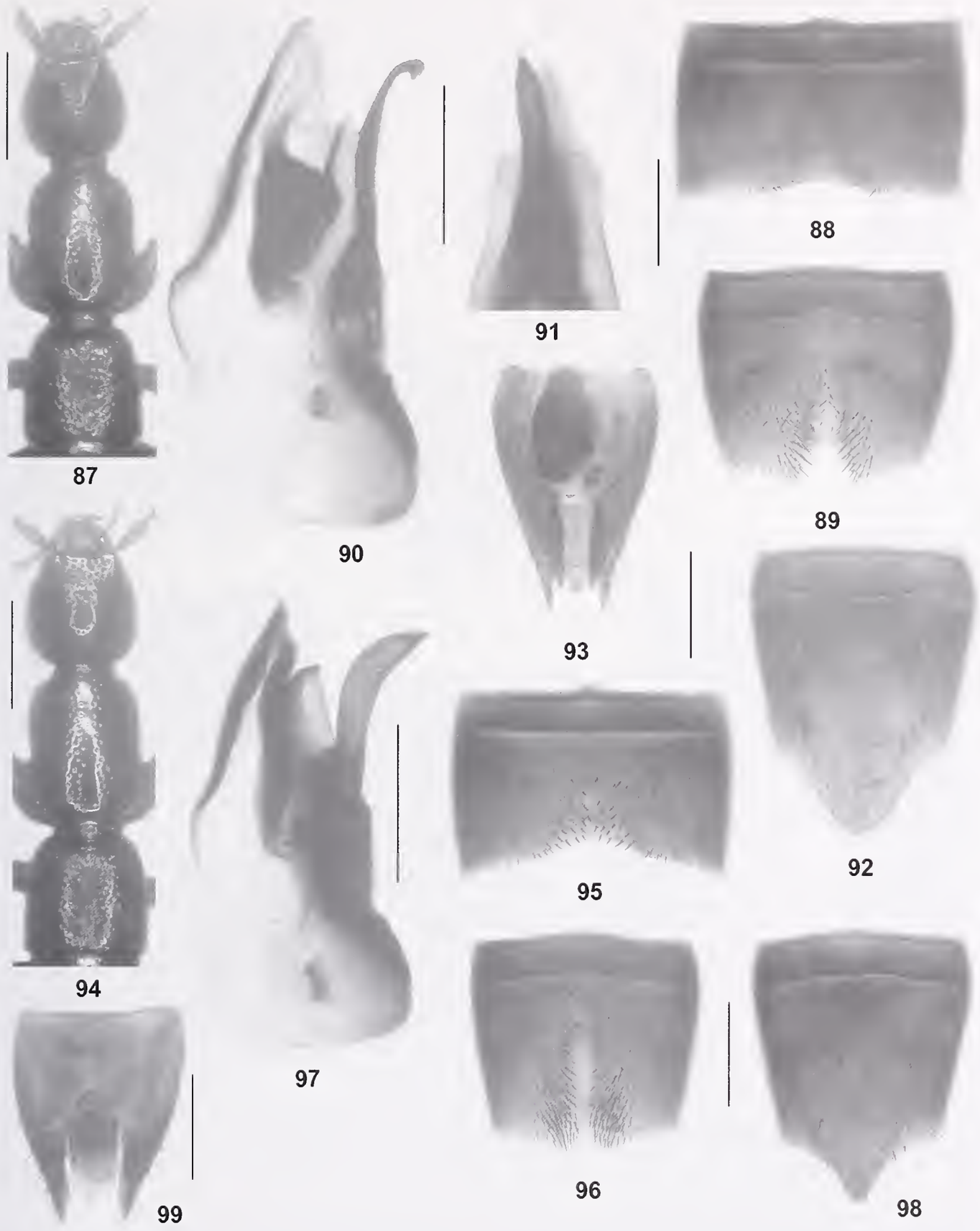
Etymology. The specific epithet (Latin, adjective: sickle-shaped) refers to the shape of the ventral process of the aedeagus, which somewhat resembles a sickle.

Description. Body length 8.5 mm; length of forebody 4.0 mm. Coloration: body blackish; legs and antennae reddish.

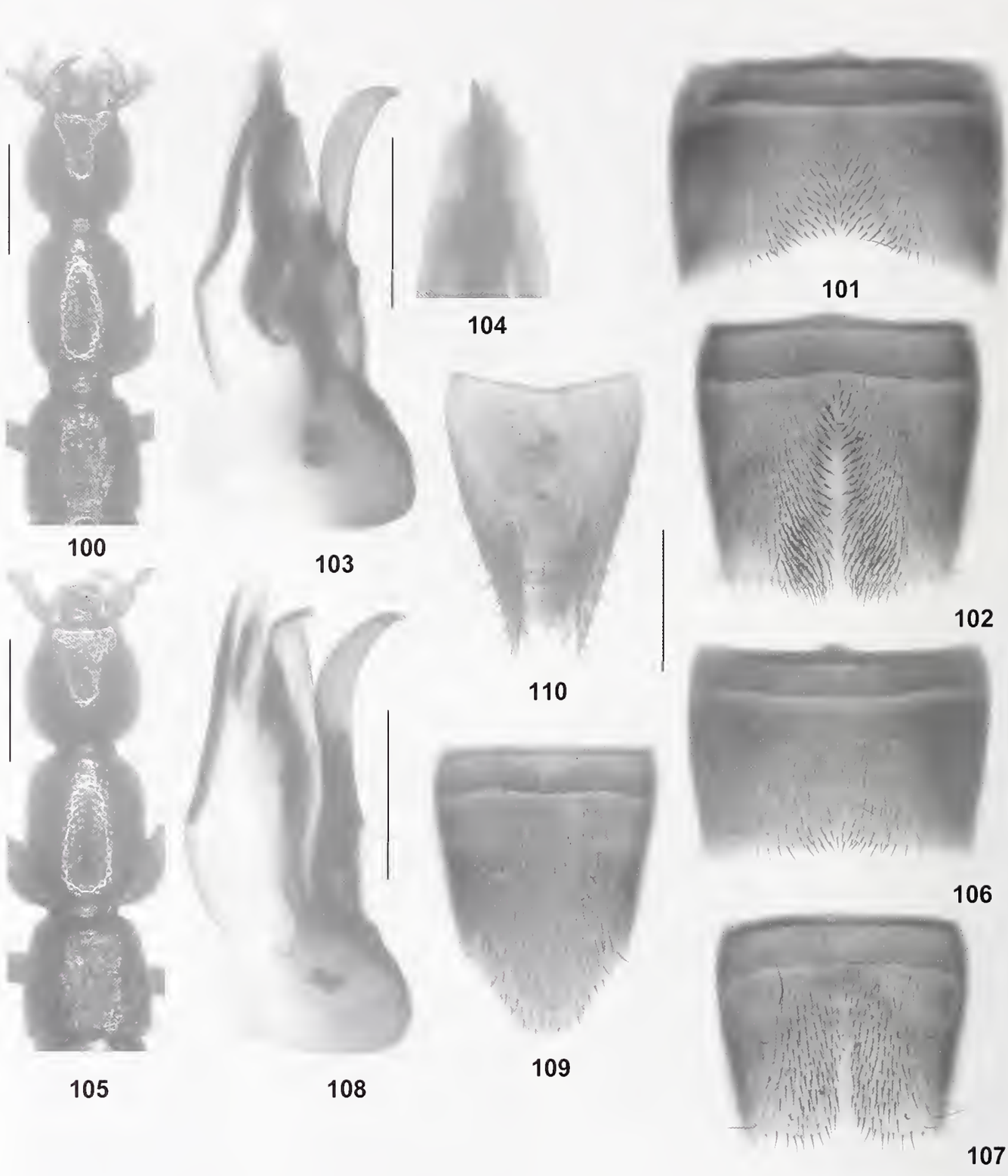
Other external characters (Fig. 100) highly similar to those of *L. biforme* and *L. lunatum*.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 101) strongly transverse, with shallow median impression posteriorly, this impression with moderately modified setae directed obliquely postero-mediad, posterior margin broadly concave, more distinctly concave in the middle; sternite VIII (Fig. 102) approximately as long as broad, symmetric, with rather shallow, posteriorly widened median impression, this impression narrowly without setae in the middle, on either side of middle with extensive cluster of dense black setae, posterior excision very shallow; aedeagus (Figs 103–104) 1.3 mm long; ventral process laterally compressed, subapically curved (lateral view), and apically acute; dorsal plate lamellate, apically pointed (dorsal view), and with pronounced median carina, basal portion distinct and moderately long; internal sac with dark membranous structure.

♀: unknown.



Figs 87–99. *Lathrobium biforme* (**87–93**) and *L. lunatum* (**94–99**). **87, 94.** Forebody. **88, 95.** Male sternite VII. **89, 96.** Male sternite VIII. **90, 97.** Aedeagus in lateral view. **91.** Apical portion of aedeagus in ventral view. **92, 98.** Female sternite VIII. **93.** Apex of female abdomen in ventral view. **99.** Female tergites IX–X. Scale bars: 87, 94: 1.0 mm; 88–93, 95–99: 0.5 mm.



Figs 100–110. *Lathrobium falcatum* (**100–104**) and *L. minicum* (**105–110**). **100, 105.** Forebody. **101, 106.** Male sternite VII. **102, 107.** Male sternite VIII. **103, 108.** Aedeagus in lateral view. **104.** Apical portion of aedeagus in ventral view. **109.** Female sternite VIII. **110.** Female tergites IX–X. Scale bars: 100, 105: 1.0 mm; 101–104, 106–110: 0.5 mm.

Comparative notes. As can be inferred from the highly similar morphology of the aedeagus, as well as from the similar modifications of the male sternites VII and VIII, *L. falcatum* is probably the adelphotaxon of *L. lunatum*, from which it differs only by the slightly different chaetotaxy of the male sternite VII and the different morphology of the aedeagus (less strongly curved ventral process, more pronounced median carina, less distinctly pointed

apex, and longer basal portion of the dorsal plate), possibly also by the paler coloration of the legs (constant?). It is distinguished from the externally highly similar and syntopic *L. biforme* by the shape and chaetotaxy of the male sternites VII and VIII, as well as by the completely different morphology of the aedeagus (shape of ventral process, pronounced carina of the dorsal plate).

Distribution and natural history. The type locality is situated in the western Qinling Shan, to the north of Chengxian (Fig. 111). The holotype was sifted from leaf litter in a secondary mixed deciduous forest at an altitude of 1760 m, together with *L. biforme*.

***Lathrobium minicum* sp. n.** (Figs 105–111)

Type material. Holotype ♂: "CHINA [16] - S-Gansu, S Longnan, Min Shan, 33°03'13"N, 104°40'57"E, 2200 m, 6.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium minicum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 17♂, 10♀ [2♂, 1♀ teneral]: same data as holotype (cAss); 5♂, 5♀ [1♂, 1♀ teneral]: "CHINA: S-Gansu [CH12-16], Min Shan, 45 km SW Longnan, 33°03'13"N, 104°40'57"E, 2200 m, secondary pine forest with hazelnut, moist litter and roots sifted, 6.VIII.2012, M. Schülke" (cSch, ZFMK).

Etymology. The specific epithet adjective) is derived from the name of the mountain where the type locality is situated.

Description. Size subject to weak sexual dimorphism, males on average slightly larger; body length 7.2–8.5 mm (♂), 6.7–8.2 mm (♀); length of forebody 3.3–3.8 mm (♂), 3.2–3.6 mm (♀). Coloration: body blackish; legs reddish, with the femora, particularly the profemora, often somewhat darker; antennae reddish. Forebody as in Fig. 105. Posterior margin of tergite VIII weakly convex or indistinctly, obtusely angled in the middle in both sexes. Except for the smaller average size, externally indistinguishable from *L. lunatum*.

♂: protarsomeres I–IV variably dilated, more strongly so in larger than in smaller males; sternites III–VI unmodified; sternite VII (Fig. 106) moderately strongly transverse and weakly modified, with small and shallow median impression posteriorly, this impression with few weakly modified setae posteriorly, posterior margin broadly and weakly concave, without distinct concavity in the middle; sternite VIII (Fig. 107) weakly transverse, symmetric, with rather shallow, longitudinal median impression, this impression narrowly without setae in the middle, on either side of middle with weakly defined cluster of weakly modified and not particularly dense setae, posterior excision moderately shallowly concave; aedea-

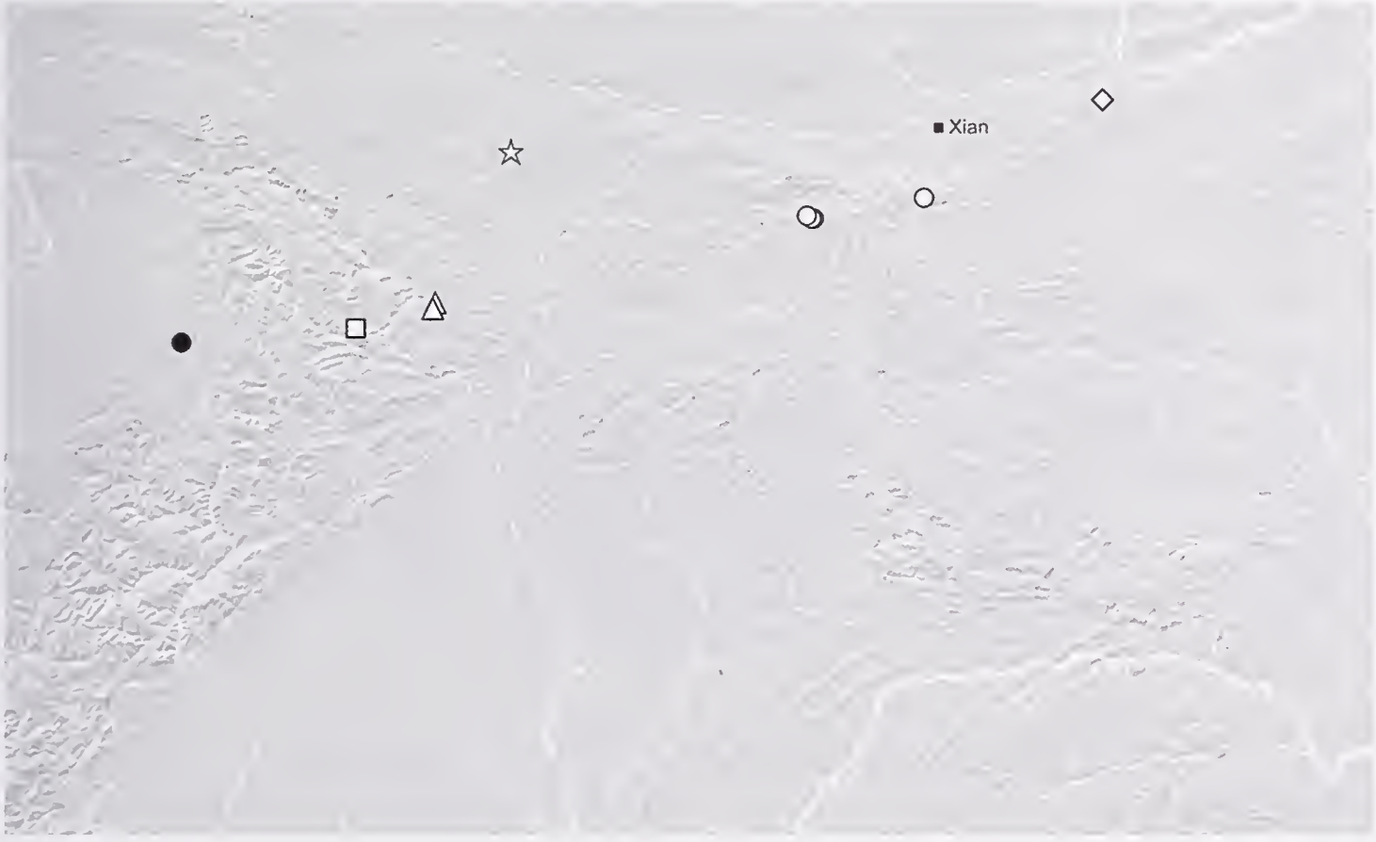


Fig. 111. Distributions of species of the *L. lentum* group (filled symbol) and the *L. varisternale* group (open symbols): *L. lentum* (filled circle); *L. minicum* (open square); *L. inflexum* (open triangles); *L. falcatum* (open star); *L. brevitergale* (open circles); *L. huaense* (open diamond).

gus (Fig. 108) approximately 1.2 mm long; ventral process laterally compressed, subapically curved (lateral view), and apically acute; dorsal plate lamellate, apically pointed (dorsal view), and with distinct median carina apically, basal portion distinct, relatively long, and weakly sclerotized; internal sac with moderately dark membranous structures.

♀: protarsomeres I–IV distinctly dilated, similar to those of small males; sternite VIII (Fig. 109) approximately 1.1 mm long, oblong, posteriorly convexly produced; tergite IX undivided; tergite X strongly convex in cross-section, somewhat longer than tergite IX in the middle (Fig. 110); abdominal apex ventrally with weakly sclerotized amorphous sclerite.

Comparative notes. Among the species of the *L. varisternale* group, *L. minicum* is undoubtedly most closely related to *L. lunatum* and *L. falcatum*, as can be inferred particularly from the similar morphology of the aedeagus (shapes of ventral process, of dorsal plate, and of internal structures). It is distinguished from both of them particularly by smaller average body size, the shapes and chaetotaxy of the male sternites VII and VIII, the smaller and slightly differently shaped aedeagus (ventral process, dorsal plate), as well as by the shape of the female sternite VIII.

Distribution and natural history. The type locality is situated in the Min Shan to the southwest of Longnan, southern Gansu (Fig. 111). The specimens were sifted from moist leaf litter and roots in a secondary pine forest with hazelnut at an altitude of 2200 m. No other *Lathrobium* species was present at the site. Some of the paratypes are teneral.

Lathrobium huaense sp. n. (Figs 111–118)

Type material. Holotype ♂: "China: Shaanxi, Qin Ling Shan, 110.06 E, 34.25 N, Hua Shan Mt., S.-top, 1950–2000 m, forrest [sic], sifted, 19.08.1995, leg. M. Schülke / Holotypus ♂ *Lathrobium huaense* sp. n., det. V. Assing 2012" (cSch). Paratypes: 2♂, 3♀: same data as holotype (cSch, cAss); 2♂, 3♀ [1♂, 2♀ teneral]: same data, but "leg. A. Pütz" (cPüt, cAss); 1♂: "CHINA (Shaanxi) Qin Ling Shan 110.06E, 34.25N, Hua Shan, 118 km E Xian, S. top, 1950–2000 m, mix. wood, 19.VI-II.1995 Wrase" (cSch).

Etymology. The specific epithet (adjective) is derived from the name of the mountain (Hua Shan) where the species was discovered.

Description. Size subject to weakly pronounced sexual dimorphism, males on average slightly larger; body length 8.5–9.2 mm (♂), 8.2–8.8 mm (♀); length of forebody 3.7–3.9 mm (♂), 3.3–3.7 mm (♀). Coloration: body dark-brown to blackish-brown; legs reddish to dark-brown with paler tarsi; antennae reddish.

Head (Fig. 112) approximately as broad as long; punctation moderately coarse and moderately dense, sparser in median dorsal portion; interstices with very shallow, barely noticeable microreticulation. Eyes moderately small, composed of > 40 ommatidia, approximately 1/4 the length of postocular region in dorsal view, and approximately 0.3 times as long as postocular region in lateral view. Antenna 1.8–2.0 mm long.

Pronotum (Fig. 112) approximately 1.25–1.30 times as long as broad, slightly broader than head; punctation similar to that of head, but somewhat sparser; midline broadly impunctate; interstices without microsculpture.

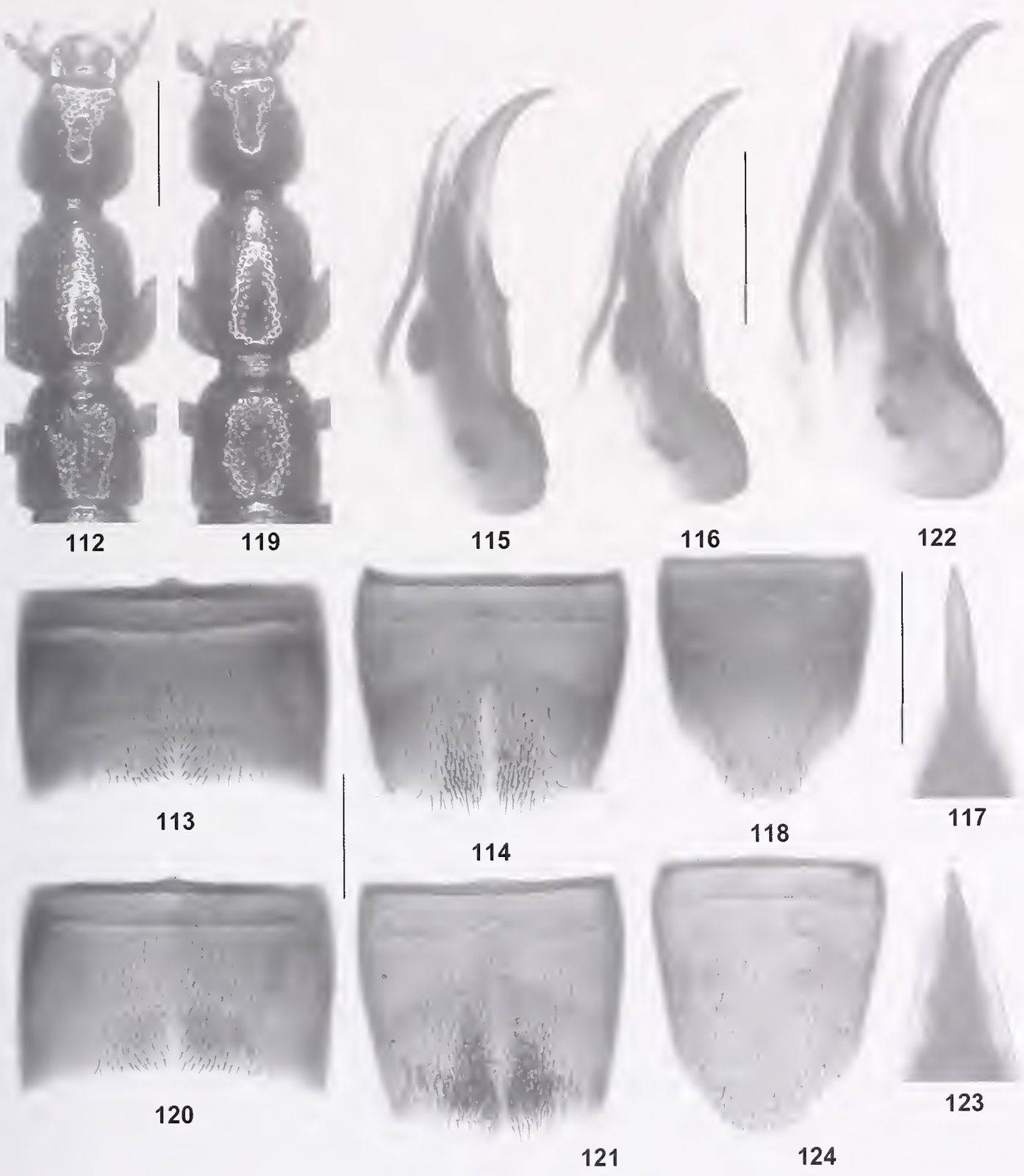
Elytra (Fig. 112) short, approximately 0.55 times as long as pronotum; punctation moderately dense and somewhat variable, shallow, weakly defined to defined; interstices without microsculpture. Hind wings completely reduced.

Abdomen with fine and dense punctation; interstices with fine, very shallow to distinct microreticulation; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex, without sexual dimorphism.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 113) with shallow median impression posteriorly, this impression with numerous moderately modified, short and stout black setae, posterior margin weakly and broadly concave; sternite VIII (Fig. 114) weakly transverse, with shallow median impression posteriorly, middle of this impression narrowly without setae, on either side of middle with cluster of dense black setae, posterior excision small, concave, and in symmetric position; aedeagus (Figs 115–117) approximately 1.25 mm long, symmetric; ventral process moderately long, rather stout, evenly arched, apically acute (lateral view), and with distinct median carina ventrally; dorsal plate long and slender, almost needle-shaped in dorsal view, without sclerotized basal portion; internal sac with dark membranous structures, but without sclerotized spines.

♀: protarsomeres I–IV distinctly dilated, but slightly less so than in male; sternite VIII (Fig. 118) approximately 1.0 mm long, oblong, posterior margin distinctly produced in the middle, middle of posterior margin truncate; tergite IX anteriorly undivided; tergite X strongly convex in cross-section, slightly longer than tergite IX in the middle.

Comparative notes. *Lathrobium huaense* is reliably distinguished from other species of the *L. varisternale* group distributed in the Qinling Shan only by the shape of the aedeagus (ventral process, dorsal plate), from most species also by the shape of the female sternite VIII.



Figs 112–124. *Lathrobium huaense* (**112–118**) and *L. sociabile* (**119–124**). **112, 119.** Forebody. **113, 120.** Male sternite VII. **114, 121.** Male sternite VIII. **115–116, 122.** Aedeagus in lateral view. **117, 123.** Apical portion of aedeagus in ventral view. **118, 124.** Female sternite VIII. Scale bars: 112, 119: 1.0 mm; 113–118, 120–124: 0.5 mm.

Distribution and natural history. The type locality is situated in the Hua Shan, eastern Qinling Shan (Fig. 111). The specimens were sifted from leaf litter in a mixed forest at an altitude of 1950–2000 m. Three paratypes are teneral.

***Lathrobium sociabile* sp. n.** (Figs 42, 119–124)

Type material. Holotype ♂: "China: Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mountain W pass at Autoroute km 70, 47 km S Xian, 2500–2600 m, sifted, 26.–27.08.1995, leg. M. Schülke / Holotypus ♂ *Lathrobium sociabile* sp. n., det. V. Assing 2012" (cSch). Paratypes: 1♂, 2♀: same data as holotype (cSch, cAss, ZFMK); 1♀: "China: Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mountain W pass at Autoroute km 70, 47 km S Xian, 2300–2500 m, sifted, 26.–30.08.1995, leg. M. Schülke" (cAss); 3♂, 4♀: same data, but "leg. A. Pütz" (cPüt, cAss); 1♂ [teneral], 1♀: "China (Shaanxi) Qin Ling Shan/108.47E 33.51N/Mt. W pass autoroute km 70, 47 km S Xian 2500–2600 m, 26–29.VIII.1995 Wrase" (cSch).

Etymology. The specific epithet (Latin, adjective: sociable) alludes to the fact that this species shares its habitat with the following species.

Description. Size subject to moderately pronounced sexual dimorphism, males on average slightly larger; body length 7.8–8.2 mm (♂), 6.7–8.0 mm (♀); length of forebody 3.6–3.8 mm (♂), 3.2–3.5 mm (♀). Coloration: body reddish to reddish-brown, with the abdomen sometimes darker brown; legs and antennae reddish.

Other external characters (Fig. 119) highly similar to those of *L. huaense* and allied species; reliably distinguished only by the sexual characters:

♂: sternite VII (Fig. 120) with shallow median depression posteriorly, this impression with weakly modified setae, middle of sternite narrowly without setae, posterior margin broadly concave; sternite VIII (Fig. 121) weakly transverse, with shallow median impression, middle of this impression narrowly without setae, on either side of middle with cluster of dense black setae posteriorly, posterior excision indistinct, weakly concave, and in symmetric position; aedeagus (Figs 122–123) approximately 1.4 mm long, symmetric; ventral process moderately long, rather stout, evenly arched, apically acute and indistinctly hooked (lateral view), and with distinct median carina ventrally; dorsal plate long and rather broadly lamellate, with long and fine median carina, and apically triangularly pointed; internal sac with dark membranous structures, but without sclerotized spines.

♀: sternite VIII (Fig. 124) approximately 1.15 mm long, oblong, posterior margin convexly produced in the middle; tergite IX undivided anteriorly; tergite X moderately convex in cross-section (domed), slightly longer than tergite IX in the middle.

Comparative notes. *Lathrobium sociabile* is distinguished from other closely related species occurring in the Qinling Shan by the sexual characters, from most species, including the syntopic *L. brevitergale*, also by the reddish coloration of the body.

Distribution and natural history. The species was collected in two localities in the Qinling Shan, to the south-southwest of Xi'an (Fig. 42). They were sifted from forest leaf litter at altitudes of 2300–2600 m, together with several specimens of *L. brevitergale*. One of the male paratypes is teneral.

***Lathrobium brevitergale* sp. n.** (Figs 111, 125–135)

Type material. Holotype ♂: "China: Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mountain W pass at Autoroute km 70, 47 km S Xian, 2300–2500 m, sifted, 26.–30.08.1995, leg. M. Schülke / Holotypus ♂ *Lathrobium brevitergale* sp. n., det. V. Assing 2012" (cSch). Paratypes: 2♂, 2♀: same data as holotype (cSch, cAss); 2♂, 1♀: same data as holotype, but "leg. A. Pütz" (cPüt, cAss); 2♀: "China: Shaanxi, Qin Ling Shan, 108.47 E, 33.51 N, Mountain W pass at Autoroute km 70, 47 km S Xian, 2500–2600 m, sifted, 26.–27.08.1995, leg. M. Schülke" (cSch, ZFMK); 1♂, 1♀: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi - Foping, 105 km SW Xi'an, N-slope, 1880 m, 33°44'N, 107°58'E, leg. M. Schülke [C01-03] / 4.VII.2001, shady rockwall base, moist (sifted) [C01-03]" (cSch, cAss); 1♂, 2♀: "CHINA Shaanxi Qinling Shan pass rd. Zhouzhi Foping 105 km SW Xi'an / N-slope 1880 m 33°44'N 107°58'E 4.VII.2001 A. Smetana [C92]" (cSme, cAss); 1♂: "China (Shaanxi) Qin Ling Shan/107.56E 33.45N, autoroute km 93 S Zhouzhi, 108 km SW Xian, mount.forest, 1650 m, 1.–2.IX.95 Wrase" (cAss); 2♂, 1♀: same data, but "leg. A. Pütz" (cPüt, cAss); 1♀: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1990 m, 33°44'N, 107°59'E, leg. M. Schülke [C01-01] / 2./4.VII.2001, small creek valley, mixed deciduous forest, bamboo, small meadows, dead wood, mushrooms (sifted) [C01-01]" (cAss).

Etymology. The specific epithet (Latin, adjective) refers to the short female tergite X, one of the characters that distinguish this species from other species of the *L. varisternale* group.

Description. Size subject to moderately pronounced sexual dimorphism, males on average slightly larger; body length 8.5–9.2 mm (♂), 7.5–8.5 mm (♀); length of forebody 3.6–4.1 mm (♂), 3.4–3.7 mm (♀). Coloration: body

dark-brown to blackish-brown, with the elytra sometimes reddish-brown; legs and antennae reddish.

In external characters (Fig. 125) highly similar to those of *L. huaense* and allied species, reliably distinguished from them only by the sexual characters:

♂: sternites IV–VI with small and indistinct median impressions or depressions; sternite VII (Figs 126–127) with shallow median depression posteriorly, this depression with weakly modified setae, middle of sternite narrowly without setae, posterior margin broadly and weakly concave; sternite VIII (Fig. 128) weakly transverse, middle without setae in posterior half, with longitudinal median impression, this impression with cluster of dense black setae on either side of middle in posterior half, posterior excision very small, weakly concave, and in symmetric position; aedeagus (Figs 129–132) 1.4–1.5 mm long, symmetric; ventral process long, slender, evenly arched, and apically very acute; dorsal plate long and rather broadly lamellate, with long median carina, apically pointed in the middle, and with the relatively long basal portion forming a distinct angle with the apical portion in lateral view; internal sac with dark membranous structures, but without sclerotized spines.

♀: sternite VIII (Figs 133–135) approximately 1.2 mm long, oblong, posterior margin strongly and convexly produced in the middle; tergite IX undivided anteriorly; tergite X moderately convex in cross-section (domed), shorter than tergite IX in the middle.

Intraspecific variation. The shape of the aedeagus (Figs (129–131), the shape and chaetotaxy of the male sternite VII (Figs 126–127), and the shape of the female sternite VIII (Figs 133–135) are subject to some intraspecific variability.

Comparative notes. *Lathrobium brevitergale* is distinguished from other closely related species occurring in the Qinling Shan by the sexual characters, particularly the long and slender ventral process of the relatively large aedeagus, the shape of the dorsal plate of the aedeagus (apically pointed, basal portion relatively long and forming a distinct angle with the apical portion in lateral view), and the short female tergite X. From the syntopic *L. sociabile*, *L. tectiforme*, and *L. concameratum*, it is additionally separated as follows:

from *L. sociabile* by slightly larger size, darker coloration, less extensive clusters of dark setae on the male sternite VIII, and by the chaetotaxy of the male sternite VII (setae sparser in posterior median portion);

from *L. tectiforme* by the different chaetotaxy of the male sternite VIII (whole midline with setae; dark setae on either side of midline denser), the chaetotaxy of the male sternite VII (posterior median impression with dense setae, middle of sternite narrowly without setae), the shape of the female sternite VIII, and by the shape of the female tergite X (in *L. tectiforme* forming a distinct angle in cross-section);

from *L. concameratum* by larger body size, darker average coloration, and the less indistinct posterior excision of the male sternite VIII, the posteriorly less conspicuously produced female sternite VIII.

Distribution and natural history. The species was collected in four localities in the Qinling Shan, to the south and southwest of Xi'an (Figs 111). The specimens were sifted from forest leaf litter at altitudes of 1650–2600 m, partly together with *L. sociabile*, *L. tectiforme*, and/or *L. concameratum*.

Lathrobium brevilobatum sp. n. (Figs 70, 136–141)

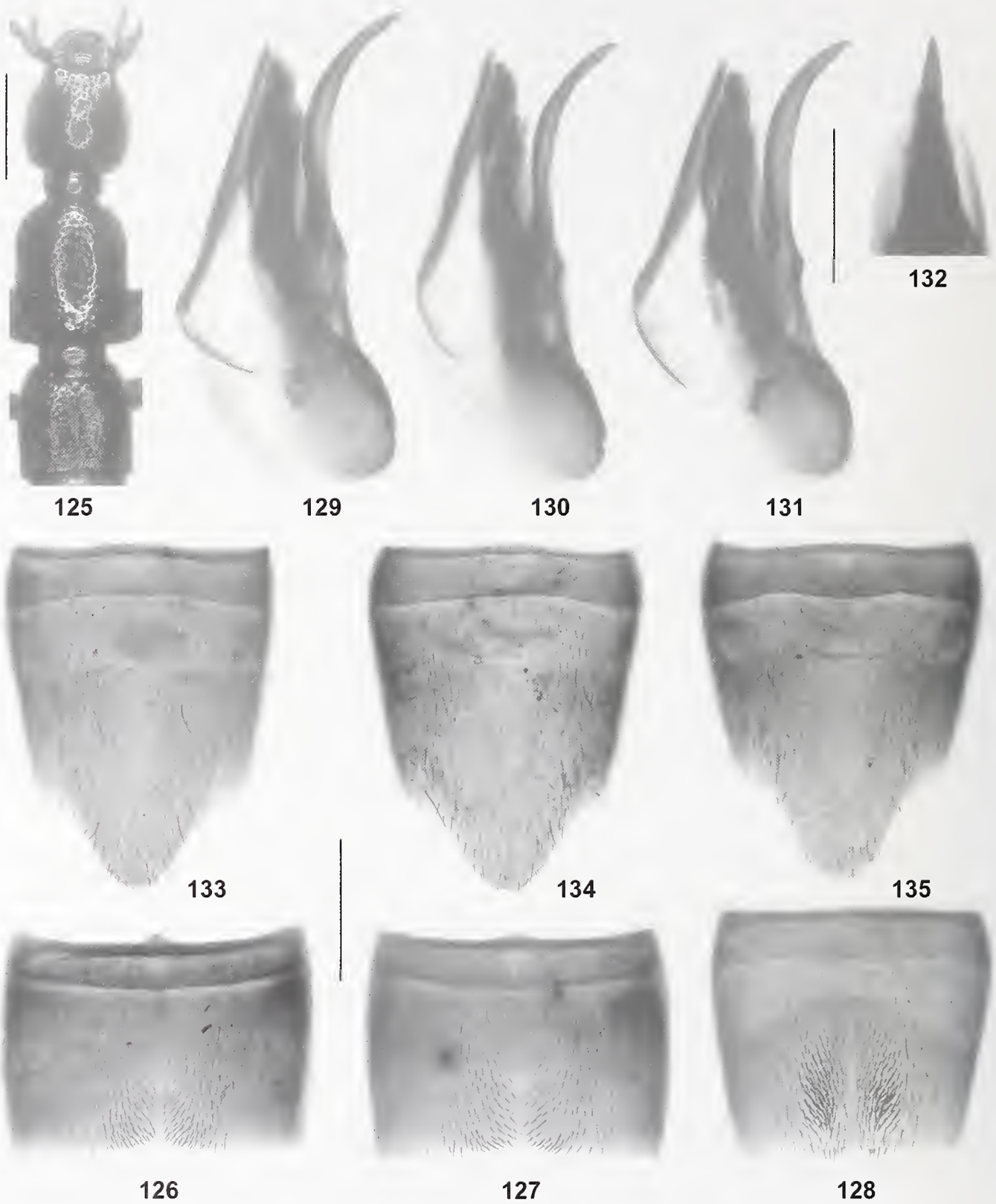
Type material. Holotype ♂: "China: S Shaanxi, Qinling Shan mt. range W pass on rd Xi'an Shagoujie / 45 km SSW Xi'an 33°52'N 108°46'E 2600 m 25.VII.2001 A. Smetana [C118] / Holotypus ♂ *Lathrobium brevilobatum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 1♂, 3♀: same data as holotype (cSme, cAss); 1♀: "CHINA: S-Shaanxi (Qinling Shan), mountain range W pass on rd. Xi'an - Shagoujie, 45 km SSW Xi'an, 33°52'N, 108°46'E, 2675 m, leg. M. Schülke [C01-20A] / 26.VII.2001, N-slope, Abies, Betula, Larix, Rhododendron, subalpine meadows (sifted) [C01-20A]" (cAss). 1♀: same data, but 25.VII.2001, leg. Wrase (cSch).

Etymology. The specific epithet (Latin, adjective: with short lobe) alludes to the relative length of the ventral process of the aedeagus, one of the characters distinguishing this species from the similar *L. brevitergale*.

Description. Size subject to moderately pronounced sexual dimorphism, males on average slightly larger; body length 7.5–7.7 mm (♂), 6.2–7.0 mm (♀); length of forebody 3.7–3.8 mm (♂), 3.2–3.5 mm (♀). Coloration: body dark-brown to blackish-brown, with the elytra often dark-reddish; legs and antennae reddish.

Other external characters (Fig. 136) highly similar to those of *L. huaense* and allied species; reliably distinguished only by the sexual characters: Posterior margin of tergite VIII weakly convex in both sexes.

♂: sternites III–VI unmodified; sternite VII (Fig. 137) with rather extensive and shallow median impression posteriorly, middle of this impression without setae, on either side of middle with cluster of moderately modified black setae, posterior margin weakly concave; sternite VIII (Fig. 138) weakly transverse, with longitudinal impression extending along whole sternite, middle of sternite narrowly without setae, on either side of middle with relatively small cluster of moderately modified black setae, posterior excision concave, small but distinct; aedeagus (Figs



Figs 125–135. *Lathrobium brevitergale*. **125.** Forebody. **126–127.** Male sternite VII. **128.** Male sternite VIII. **129–131.** Aedeagus in lateral view. **132.** Apical portion of aedeagus in ventral view. **133–135.** Female sternite VIII. Scale bars: 125: 1.0 mm; 126–135: 0.5 mm.

139–140) approximately 1.25 mm long; ventral process weakly asymmetric in ventral view, moderately long, gently curved, and apically acute in lateral view; dorsal plate long and rather broadly lamellate, with long median carina, and apically sharply pointed in dorsal view, basal portion weakly sclerotized, forming a very obtuse angle with apical portion; internal sac with dark membranous structures, but without sclerotized spines.

♀: sternite VIII (Fig. 141) approximately 1.1 mm long, oblong, posterior margin distinctly and convexly produced in the middle; tergite IX undivided anteriorly; tergite X weakly convex in cross-section, slightly shorter than tergite IX in the middle.

Comparative notes. Among the species of the *L. varisternale* group, *L. brevilobatum* is most similar to *L. brevitergale*, but distinguished by the shape and chaetotaxy of the male sternite VII (more transverse, posterior margin more weakly concave, middle less narrowly without setae, setae of posterior clusters more distinctly modified), the shape and chaetotaxy of the male sternite VIII (median impression more pronounced, posterior excision more distinct, middle less narrowly without setae, setae of posterior clusters more distinctly modified), the larger aedeagus with a relatively shorter, less strongly curved, and apically less slender ventral process, the shape of the female sternite VIII (slightly shorter, posteriorly less strongly and more broadly produced), and by the relatively longer female tergite X (in relation to tergite IX).

Distribution and natural history. The type locality is situated in the Qinling Shan, to the south-southwest of Xi'an (Fig. 70), at an altitude of 2600–2675 m. The specimens were sifted from leaf litter in a subalpine mixed forest composed of fir, larch, birch, and rhododendron.

Lathrobium concameratum sp. n. (Figs 42, 142–147)

Type material. Holotype ♂: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1990 m, 33°44'N, 107°59'E, leg. M. Schülke [C01-01] / 2./4.VII.2001, small creek valley, mixed deciduous forest, bamboo, small meadows, dead wood, mushrooms (sifted) [C01-01] / Holotypus ♂ *Lathrobium concameratum* sp. n., det. V. Assing 2012" (cSch). Paratypes: 1♂, 3♀: same data as holotype (cSch, cAss, ZFMK); 1♂: "CHINA (S-Shaanxi) Qinling Shan, pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1990 m, 33°44'N, 107°59'E (small creek vall./mix. decid. for./bamboo/small meadows, 2./4.VII.2001 Wrase [01]" (cSch); 1♀: "China (Shaanxi) Qin Ling Shan/107.56E 33.45N, autoroute km 93 S Zhouzhi, 108 km SW Xian, mount.forest, 1650 m, 1.–2.IX.95 Wrase" (cSch); 1♂, 1♀: "CHINA Shaanxi Qinling Shan pass rd. Zhouzhi Foping 105 km SW Xi'an / N-slope 1990 m 33°44'N 107°59'E 2.VII.2001 A. Smetana [C89]" (cSme, cAss); 1♀: "CHINA [1] - S-Shaanxi, SW Zhouzhi, Qinling Shan, 33°44'02"N, 107°58'06"E, 1900 m, 25.VII.2012, V. Assing" (cAss); 2♀: "CHINA (S.Shaanxi) Qinling Shan, 52 km SSW Zhouzhi, 1900 m, 33°44'02"N, 107°58'06"E (NE.slope, creek valley, mixed forest, litter and soil sifted, under gravel) 25.VII.2012, D.W. Wrase [01]" (cSch).

Etymology. The specific epithet (Latin, adjective: arched) refers to the convex (cross-section) female tergite X, one of the characters separating this species from the syntopic *L. tectiforme*.

Description. Size subject to moderately pronounced sexual dimorphism, males slightly larger; body length 7.0–7.6 mm (♂), 6.0–6.7 mm (♀); length of forebody 3.2–3.4 mm (♂), 2.9–3.2 mm (♀). Coloration: body dark-reddish to blackish-brown; legs and antennae reddish.

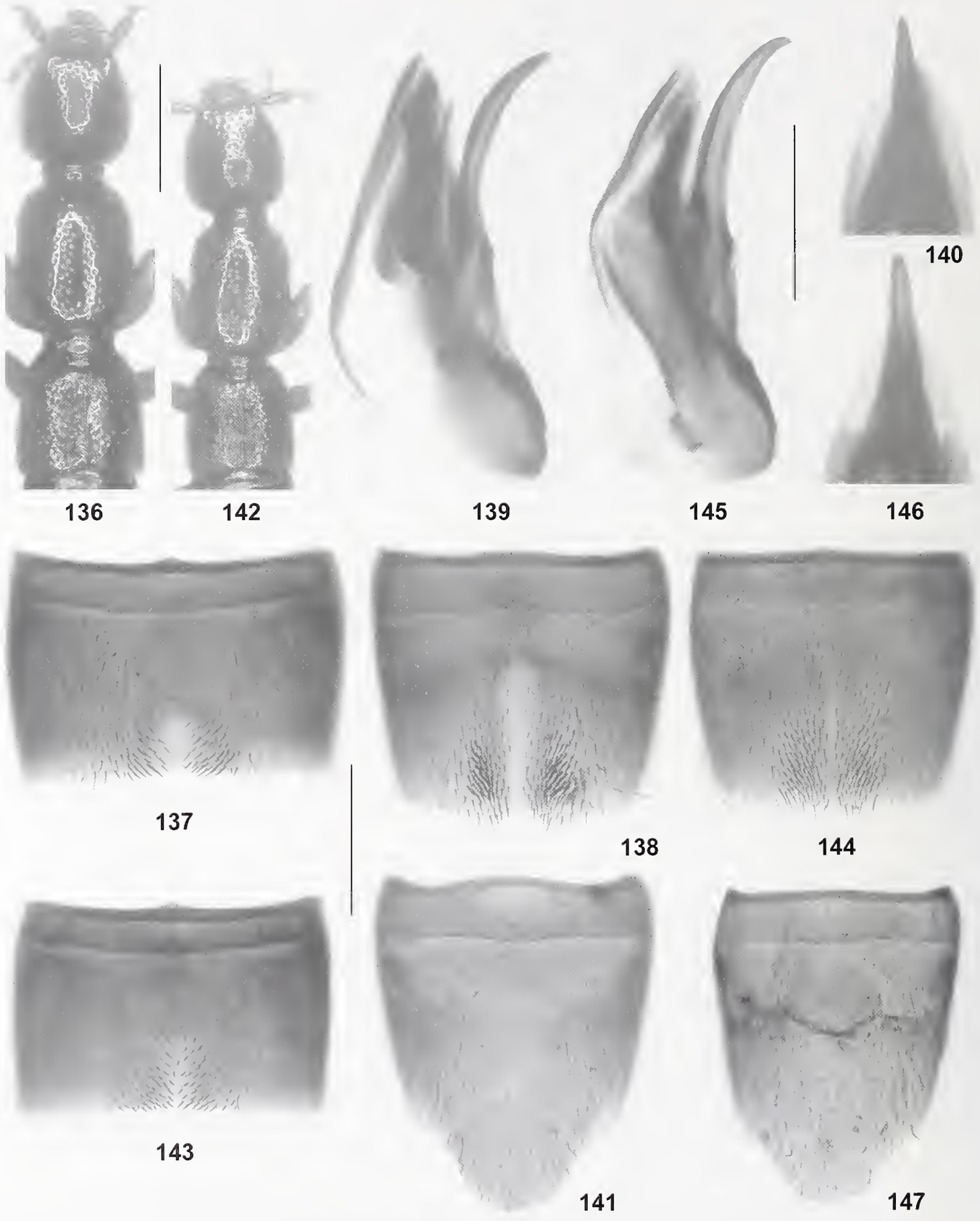
In external characters (Fig. 142) highly similar to those of *L. huaense* and allied species; reliably distinguished from the closely related species only by the sexual characters.

Tergite VIII with weakly pronounced sexual dimorphism.

♂: tergite VIII with weakly convex posterior margin; sternites III–V1 unmodified; sternite VII (Fig. 143) with shallow median impression, this impression with weakly modified setae, middle of sternite narrowly without setae, posterior margin broadly and weakly concave; sternite VIII (Fig. 144) weakly transverse, with long median impression, middle of this impression narrowly without setae, on either side of middle with cluster of dense black setae posteriorly, posterior excision indistinct, sometimes practically obsolete; aedeagus (Figs 145–146) approximately 1.3 mm long, symmetric; ventral process moderately long, moderately slender, evenly arched in lateral view, and apically acute; dorsal plate moderately long and broadly lamellate, with median carina apically, with apex of triangular shape in dorsal view, and with moderately long, weakly sclerotized basal portion; internal sac with dark membranous structures, but without sclerotized spines.

♀: posterior margin of tergite VIII truncate to indistinctly concave; sternite VIII (Fig. 147) approximately 1.0 mm long, oblong, posterior margin convexly produced in the middle; tergite IX undivided anteriorly; tergite X convex in cross-section (domed), approximately as long as tergite IX in the middle, or slightly shorter.

Comparative notes. *Lathrobium concameratum* is distinguished from other closely related species occurring in the Qinling Shan by its relatively small size and especially by the sexual characters, particularly the practically obsolete posterior excision of the male sternite VIII, the shapes of



Figs 136–147. *Lathrobium brevilobatum* (**136–141**) and *L. concameratum* (**142–147**). **136, 142.** Forebody. **137, 143.** Male sternite VII. **138, 144.** Male sternite VIII. **139, 145.** Aedeagus in lateral view. **140, 146.** Apical portion of aedeagus in ventral view. **141, 147.** Female sternite VIII. Scale bars: 136, 142: 1.0 mm; 137–141, 143–147: 0.5 mm.

the ventral process and the dorsal plate of the aedeagus, and the shape of the female sternite VIII. From the syntopic *L. brevitergale* and *L. tectiforme*, it is additionally separated as follows:

from *L. brevitergale* by the stouter setae in the shallower and more extensive posterior impression of the male sternite VII, the smaller aedeagus and by the greater relative length of the female tergite X;

from *L. tectiforme* by the on average paler coloration, the presence of dense dark setae in the posterior impression of the male sternite VII, the absence of setae along the middle of the male sternite VII, the more weakly concave posterior margin of the male sternite VII, the absence of setae along the whole middle of the male sternite VIII, the differently shaped female sternite VIII, and by the convex female tergite X (cross-section).

Distribution and natural history. *Lathrobium concameratum* is known from two localities in the Qinling Shan, to the southwest of Xi'an (Fig. 42). The specimens were sifted from leaf litter in deciduous forests at altitudes of 1650 and 1990 m, together with *L. brevitergale* and *L. tectiforme*.

Lathrobium tectiforme sp. n. (Figs 148–156, 169)

Type material. Holotype ♂: "China: Shaanxi, Qin Ling Shan, 107.56 E, 33.45 N, Autoroute km 93 S of Zhouzhi, 108 km SW Xian, Mountain Forrest [sic], sifted, 1650 m, 1.–2.09.1995, leg. M. Schülke / Holotypus ♂ *Lathrobium tectiforme* sp. n., det. V. Assing 2012" (cSch). Paratypes: 3♂, 2♀: same data as holotype (cSch, cAss); 5♂, 4♀ [1♂, 1♀ teneral]: same data as holotype, but "leg. A. Pütz" (cPüt, cAss) 1♂, 2♀: "China (Shaanxi) Qin Ling Shan/107.56E 33.45N, autoroute km 93 S Zhouzhi, 108 km SW Xian, mount.forest, 1650 m, 1.–2.IX.95 Wrase" (cSch, cAss); 1♀: "CHINA: S-Shaanxi (Qinling Shan), river bank above Houzhenzi, 115 km WSW Xi'an, 1450 m, 33°50'N, 107°47'E, leg. M. Schülke [C01-06] / 5.VII.2001, gravel bank (floating), mixed deciduous forest, moss, mushrooms (sifted) [C01-06] (cSch); 1♀: "China Shaanxi Qinling Shan above Houzhenzi 115 km WSW Xi'an / 1450 m, 33°50'N 107°47'E 5.VII.2001 A. Smetana [C95b]" (cSme); 2♀: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1700 m, 33°46'N, 107°58'E, leg. M. Schülke [C01-02] / 3.VII.2001, small creek valley, mixed deciduous forest, moss (sifted) [C01-02]" (cSch); 4♂, 4♀: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1990 m, 33°44'N, 107°59'E, leg. M. Schülke [C01-01] / 2./4.VII.2001, small creek valley, mixed deciduous forest, bamboo, small meadows, dead wood, mushrooms (sifted) [C01-01]" (cSch, cAss, ZFMK); 2♂: "CHINA (S-Shaanxi) Qinling Shan, pass on rd. Zhouzhi-Foping, 105 km SW Xi'an, N-slope, 1990 m, 33°44'N, 107°59'E (small creek vall./mix. decid. for./bamboo/small meadows, 2./4.VII.2001 Wrase [01]" (cSch); 1♂: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi - Foping, 105 km SW Xi'an, N-slope, 1880 m, 33°44'N, 107°58'E, leg. M. Schülke [C01-03] / 4.VII.2001, shady rockwall base, moss (sifted) [C01-03]" (cAss); 1♂: "China: Shaanxi 1999, Foping Nat. Res., Panda area, 1600 m, 33°45'N, 107°48'E, 6.–11.4, Sinaiev & Plutenko" (cAss); 2♀: "CHINA Shaanxi Qinling Shan pass rd. Zhouzhi Foping 105 km SW Xi'an / N-slope 1880 m 33°44'N 107°58'E 4.VII.2001 A. Smetana [C92]" (cSme, cAss); 2♂, 2♀: "CHINA Shaanxi Qinling Shan pass rd. Zhouzhi Foping 105 km SW Xi'an / N-slope 1990 m 33°44'N 107°59'E 2.VII.2001 A. Smetana [C89]" (cSme, cAss).

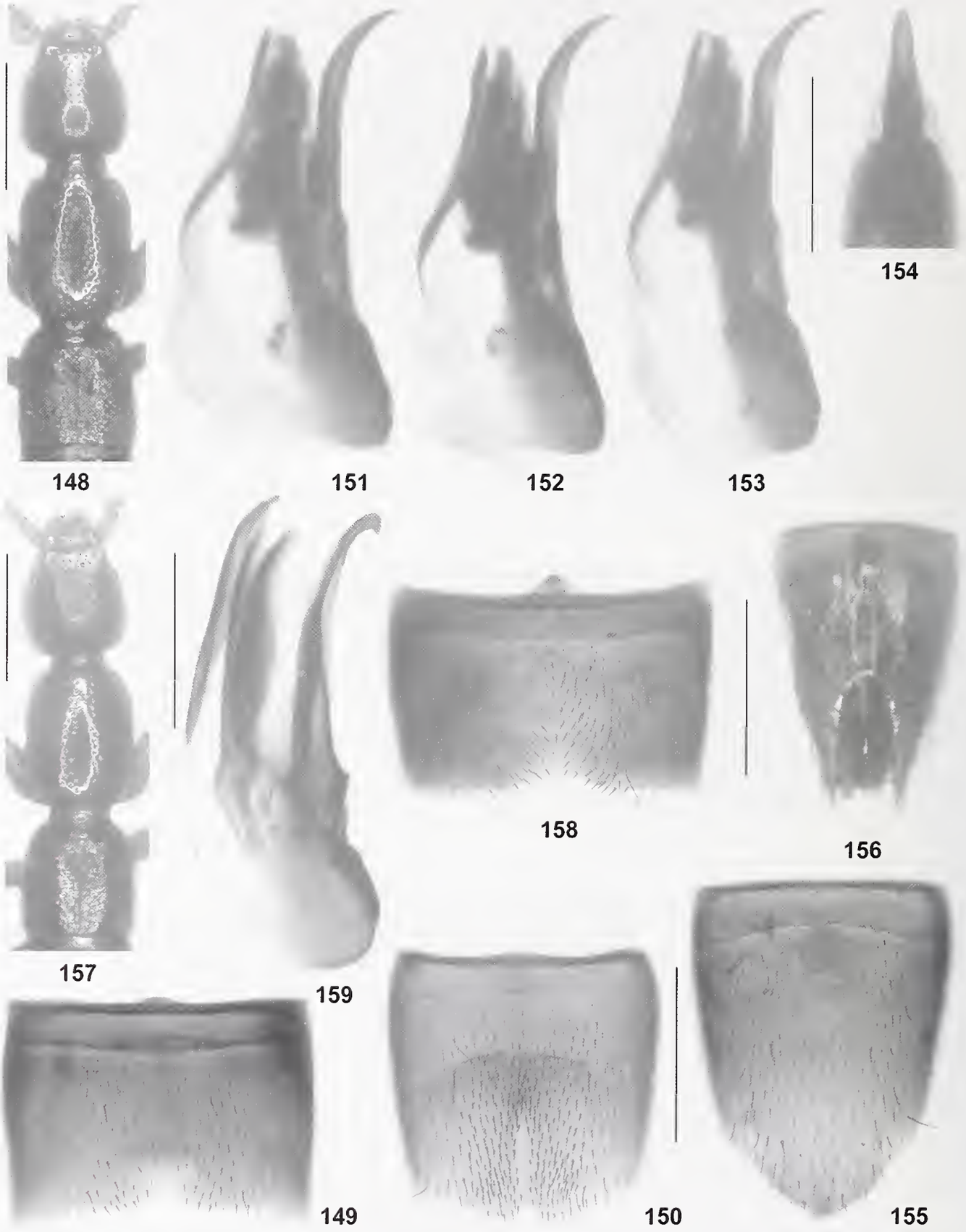
Etymology. The specific epithet (Latin, adjective: shaped like a roof) alludes to the shape of the female tergite X.

Description. Size subject to moderately pronounced sexual dimorphism, males on average slightly larger; body length 7.1–8.2 mm (♂), 6.5–7.8 mm (♀); length of forebody 3.2–3.6 mm (♂), 3.0–3.4 mm (♀). Coloration: body reddish-brown to blackish-brown, with the elytra often dark-reddish to reddish-brown; legs and antennae reddish.

Other external characters (Fig. 148) highly similar to those of *L. huaense* and allied species; reliably distinguished only by the sexual characters:

♂: posterior margin of tergite VIII weakly convex; sternites III–VI unmodified; sternite VII (Fig. 149) with rather small median depression posteriorly, this impression almost without setae, middle of sternite with setae, posterior margin noticeably concave, particularly in the middle; sternite VIII (Fig. 150) weakly transverse, with longitudinal median impression only in posterior half, middle of this impression narrowly without setae only in posterior half, on either side of middle with rather ill-delimited and not particularly dense cluster of black setae posteriorly, posterior excision small but distinct, concave, and in symmetric position; aedeagus (Figs 151–154) approximately 1.2 mm long, symmetric; ventral process moderately long, subapically abruptly curved and apically very acute in lateral view, and with distinct median carina ventrally; dorsal plate long and rather broadly lamellate, with long median carina, and apically convex, basal portion short and not forming an angle with apical portion; internal sac with dark membranous structures, but without sclerotized spines.

♀: posterior margin of tergite VIII weakly concave; sternite VIII (Fig. 155) approximately 1.0 mm long, oblong, posterior margin triangularly produced in the middle; tergite IX undivided anteriorly; tergite X roof-shaped, angled in cross-section, slightly shorter than tergite IX in the middle (Fig. 156).



Figs 148–159. *Lathrobium tectiforme* (**148–156**) and *L. inflexum* (**157–159**). **148, 157.** Forebody. **149, 158.** Male sternite VII. **150.** Male sternite VIII. **151–153, 159.** Aedeagus in lateral view. **154.** Apical portion of aedeagus in ventral view. **155.** Female sternite VIII. **156.** Female tergites IX–X. Scale bars: 148, 157: 1.0 mm; 149–156, 158–159: 0.5 mm.

Comparative notes. *Lathrobium tectiforme* is distinguished from other closely related species from the Qinling Shan by the sexual characters, particularly the sexually dimorphic tergite VIII (posterior margin weakly concave in female), the shape and chaetotaxy of the male sternite VII (with setae along the middle, posterior impression small, well-delimited, and practically without setae), the chaetotaxy of the male sternite VIII (midline without setae only in posterior half, clusters of black setae ill-delimited and not very dense), the shape of the ventral process (subapically sharply curved, apically very acute) and the dorsal plate of the aedeagus, the shape of the female sternite VIII, as well as by the roof-shaped and short (in relation to tergite IX) tergite X. For additional characters separating *L. tectiforme* from the syntopic *L. concameratum* and *L. brevitergale* see the comparative notes in the respective species sections.

Distribution and natural history. *Lathrobium tectiforme* was collected in several localities in the Qinling Shan to the south-southwest of Xi'an (Fig. 169). The specimens were sifted from the leaf litter of mixed deciduous forests at altitudes of 1450–1990 m, together with *L. brevitergale* and *L. concameratum*.

Lathrobium inflexum sp. n. (Figs 111, 157–162)

Type material. Holotype ♂: "CHINA [7] - S-Gansu, mountains SE Longnan, sifted, 33°13'20"N, 105°15'10"E, 2170 m, 31.VII.2012, V. Assing / Holotypus ♂ *Lathrobium inflexum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 10♂, 16♀: same data as holotype (cAss, MNHUB); 11♂, 8♀: "CHINA: S-Gansu [CH12-07], Mts. 36 km SE Longnan, 33°13'20"N, 105°15'10"E, 2170 m, N-slope with shrubs and scattered coniferous trees, litter & mushrooms sifted, 31.VII.2012, leg. M. Schülke" (cSch); 6♂, 2♀: "CHINA [8] - S-Gansu, mountains SE Longnan, sifted, 33°11'20"N, 105°14'24"E, 2030 m, 31.VII.2012, V. Assing" (cAss, MNHUB); 6♂, 2♀ [1♂ teneral]: "CHINA: S-Gansu [CH12-08], Mts. 38 km SE Longnan, 33°11'20"N, 105°14'24"E, 2030 m, N-slope with scree, moss, fern roots and litter sifted, 31.VII.2012, leg. M. Schülke" (cSch); 11♂, 21♀: "CHINA [13] - S-Gansu, mountains SE Longnan, sifted, 33°13'03"N, 105°14'55"E, 2080 m, 4.VIII.2012, V. Assing" (cAss, MNHUB); 3♂, 6♀: "CHINA: S-Gansu [CH12-13], Mts. 36 km SE Longnan, 33°13'03"N, 105°14'55"E, 2080 m, N-slope with mixed pine and birch forest, litter and mushrooms sifted, 4.VIII.2012, leg. M. Schülke" (cSch); 1♀: same data, but "[CH12-13b] ... litter sifted" (cSch); 3♂, 4♀: "CHINA [18] - S-Gansu, mountains SE Longnan, sifted, 33°11'17"N, 105°14'12"E, 2060 m, 7.VIII.2012, V. Assing" (cAss, MNHUB); 3♀ [1 teneral]: "CHINA [18a]- S-Gansu, mts. SE Longnan, nest of *Formica*, 33°11'17"N, 105°14'12"E, 2060 m, 7.VIII.2012, V. Assing" (cAss, MNHUB); 3♂, 2♀ [1♀ teneral]: "CHINA [18b]- S-Gansu, mountains SE Longnan, sifted, 33°11'16"N, 105°14'08"E, 2130 m, 7.VIII.2012, V. Assing" (cAss); 4♂, 1♀: "CHINA (S.Gansu) Mts. 38 km SE Longnan, 2060 m, 33°11'17"N, 105°14'12"E, (W-slope with scree, scrubs, tall herbaceous vegetation, roots, soil, moss sifted) 7.VIII.2012 D.W. Wrase [18] " (cSch, ZFMK).

Etymology. The specific epithet (Latin, participle of inflectere: to inflect) alludes to the apically inflected ventral process of the aedeagus.

Description. Size without sexual dimorphism; body length 5.8–7.5 mm; length of forebody 3.0–3.5 mm. Coloration: forebody reddish-brown to dark-brown; abdomen dark-brown to blackish-brown; legs and antennae reddish.

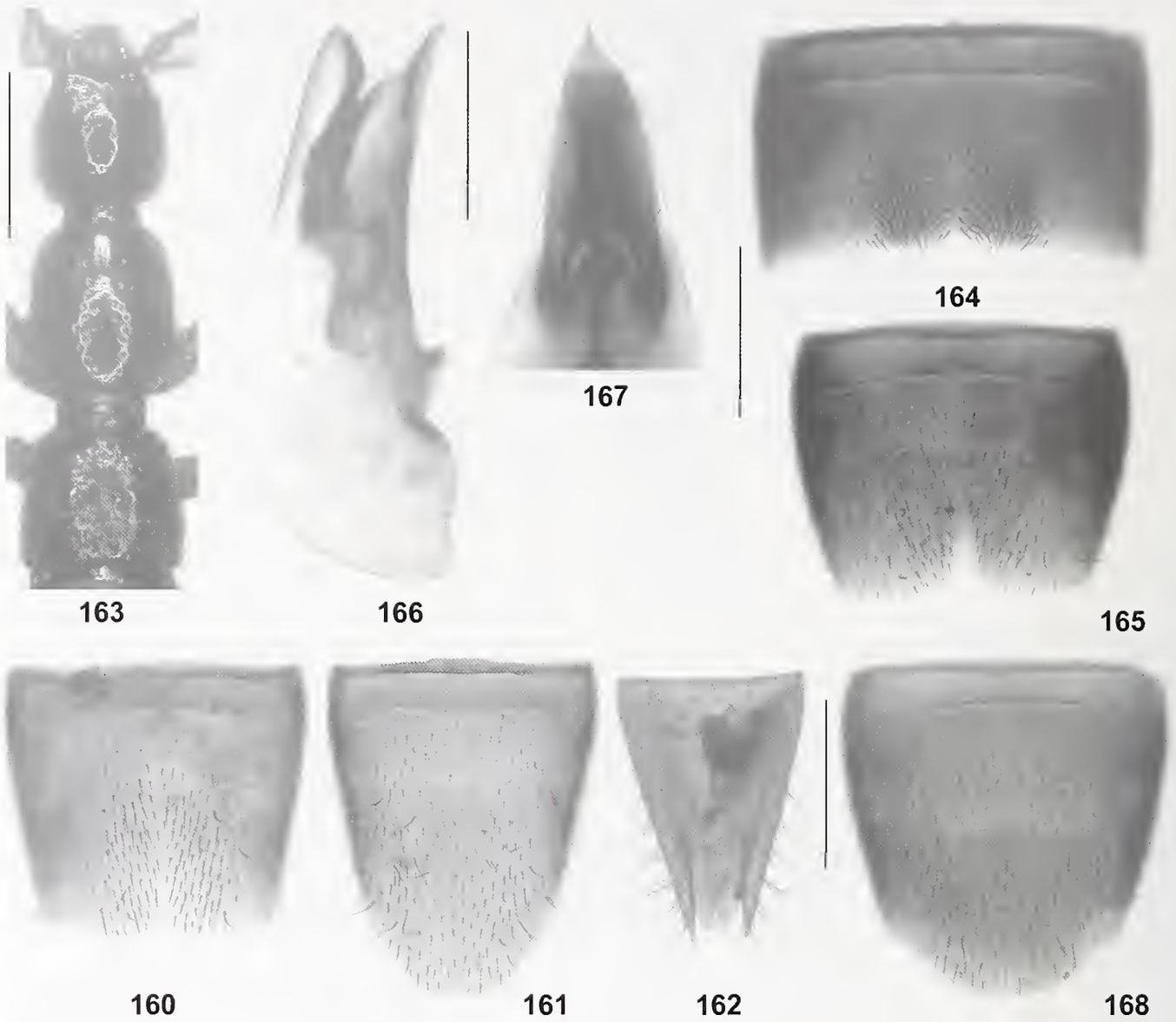
Head (Fig. 157) oblong, approximately 1.05–1.10 times as long as broad; punctation moderately coarse and moderately dense, somewhat sparser in median dorsal portion; interstices on average slightly broader than punctures, with fine, but distinct microreticulation and subdued shine. Eyes moderately small, composed of approximately 40 ommatidia, approximately 1/4 the length of postocular region in dorsal view, and approximately 0.35 times as long as postocular region in lateral view. Antenna 1.6–1.9 mm long.

Pronotum (Fig. 157) slender, approximately 1.3 times as long as broad and 1.05–1.10 times as broad as head; lateral margins parallel; punctation similar to that of head; midline broadly impunctate; interstices without microsculpture and glossy.

Elytra (Fig. 157) short, 0.5–0.6 times as long as pronotum; punctation moderately dense and rather shallow, defined to ill-defined; interstices without microsculpture. Hind wings completely reduced.

Abdomen with fine and rather dense punctation, punctures on tergite VII slightly sparser than on tergites III–VI; interstices with very fine and shallow microsculpture; posterior margin of tergite VII without palisade fringe; tergite VIII without apparent sexual dimorphism, posterior margin weakly convex in both sexes.

♂: protarsomeres I–IV strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 158) strongly transverse, with distinct but shallow median impression posteriorly, this impression with not particularly dense and weakly modified setae, posterior margin moderately concave in the middle; sternite VIII (Fig. 160) weakly transverse, with shallow oblong median impression with weakly modified setae; posterior excision shallow; aedeagus (Fig. 159) approximately 1.3 mm long and slender; ventral process long and slender, apically hook-shaped in lateral view; dorsal plate lamellate and moderately sclerotized, without separate basal portion, without distinct median carina, and apically pointed in dorsal view; internal sac with long and



Figs 160–168. *Lathrobium inflexum* (**160–162**) and *L. lentum* (**163–168**). **160, 165.** Male sternite VIII. **161, 168.** Female sternite VIII. **162.** Female tergites IX–X. **163.** Forebody; **164.** Male sternite VII. **166.** Aedeagus in lateral view. **167.** Apical portion of aedeagus in ventral view. Scale bars: 163: 1.0 mm; 160–162, 164–168: 0.5 mm.

moderately dark membranous structures, without sclerotized spines.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; sternite VIII (Fig. 161) approximately 1.0 mm long, distinctly oblong, and convexly produced posteriorly; tergite IX anteriorly undivided; tergite X weakly convex in cross-section, slightly shorter than tergite IX in the middle (Fig. 162).

Comparative notes. *Lathrobium inflexum* lacks conspicuous external characters separating it from other species of moderate size and with a slender pronotum. It is characterized particularly by the male primarly and secondary sexual characters, above all by the shape of the ventral process of the aedeagus. Based on the similar male and female sexual characters, the species is tentatively attributed to the *L. varisternale* group, although it is not subject to a sexual dimorphism of body size, one of the synapomorphies constituting this group.

Distribution and natural history. The species was found in several geographically close localities in the mountain range to the southeast of Longnan, southern Gansu (Fig. 111). It was sifted in great numbers from moss, fern roots, and leaf litter in mixed forests and beneath shrubs at an altitude of 2030–2170 m, in one locality together with an undescribed species represented by a single female. Three specimens are teneral.

The *Lathrobium lentum* species group

***Lathrobium lentum* sp. n.** (Figs 111, 163–168)

Type material. Holotype ♂: "CHINA [24]- N-Sichuan, pass NW Songpan, 3600 m, 32°55'32"N, 103°25'56"E, sifted, 11.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium lentum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 12♂, 19♀: same data as holotype (cAss); 7♂, 11♀: "CHINA: N-Sichuan [CH12-24], pass 35 km NNW Songpan, 32°55'32"N, 103°25'56"E, 3600 m, moist N-slope with Salix and other shrubs, litter, grass roots & moss sifted, 11.VIII.2012, leg. M. Schülke" (cSch, ZFMK); 5♂, 6♀: "CHINA (N-Sichuan) pass 35 km NNW Songpan 32°55'32"N, 103°25'56"E, 3600 m, (moist N-slope with Salix, other shrubs, litter, moss, soil sifted, 11.VIII.2012, D.W. Wrase [24]" (cSch, cAss).

Etymology. The specific epithet (Latin, adjective: slow) alludes to the short legs, particularly the short tarsi, suggesting that the species moves slowly.

Description. Size subject to weakly pronounced sexual dimorphism, males on average slightly larger; body length 6.8–8.0 mm (♂), 5.8–7.0 mm (♀); length of forebody 3.0–3.4 mm (♂), 2.8–3.2 mm (♀). Coloration: body blackish; legs dark-brown with paler tarsi; antennae reddish.

Head (Fig. 163) weakly oblong, approximately 1.05 times as long as broad; posterior angles weakly marked, practically obsolete; punctation rather coarse and relatively sparse, particularly in median dorsal portion; interstices without microsculpture and glossy. Eyes relatively large, composed of > 50 weakly defined ommatidia, approximately 1/3 the length of postocular region in dorsal view, or nearly so. Antenna 1.5–1.8 mm long.

Pronotum (Fig. 163) relatively short and broad, approximately 1.2 times as long as broad and 1.1 times as broad as head; punctation sparse; midline broadly impunctate; interstices without microsculpture.

Elytra (Fig. 163) rather broad and moderately short, approximately 0.6 times as long as pronotum; punctation sparse, rather fine, and shallow; interstices without microsculpture. Hind wings completely reduced. Legs, particularly the tarsi very short; length of metatarsus approximately 0.6 times the width of pronotum. Protarsomeres I–IV with weakly pronounced sexual dimorphism.

Abdomen with fine and dense punctation, punctures only slightly sparser on tergite VII than on tergites III–VI; interstices with fine and distinct microreticulation; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex, without evident sexual dimorphism.

♂: protarsomeres I–IV moderately to strongly dilated; sternites III–VI unmodified; sternite VII (Fig. 164) strongly transverse, with rather extensive median depression, this depression with two large clusters of moderately modified long black setae on either side of the narrowly non-pubescent middle, posterior margin broadly and weakly concave; sternite VIII (Fig. 165) distinctly transverse, with shallow and oblong median impression with unmodified setae, middle of sternite narrowly without setae, posterior excision broad and shallow; aedeagus (Figs 166–167) approximately 1.5 mm long and symmetric; ventral process slender, with distinct and long median carina, and apically acute; dorsal plate lamellate, thin, apically acute, and without distinct basal portion; internal sac with oblong dark membranous structures, without sclerotized spines.

♀: protarsomeres I–IV distinctly dilated, but usually at least slightly less so than in male; sternite VIII (Fig. 168) approximately 1.0 mm long, approximately as long as broad, and with convex posterior margin; tergite IX completely divided anteriorly; tergite X broad, weakly convex in cross-section, anteriorly reaching anterior margin of tergite IX.

Comparative notes. Based on the external and sexual characters, *L. lentum* does not appear to be closely affiliated with any of the other species of the study region. It differs from all of them by the absence of microsculpture on the head, the broad pronotum in relation to the slender head, the short legs, particularly the short tarsi, the chaetotaxy of the male sternite VII, the shape and chaetotaxy of the male sternite VIII, the morphology of the aedeagus (ventral process symmetric and ventrally carinate; dorsal plate without distinct basal portion), and by the shape of the female sternite VIII. The latter differs from that of *L. brevisternale*, the only other species from the study region whose female sternite VIII is not oblong, by the distinctly convex posterior margin. In addition, *L. lentum* is characterized by the blackish coloration of the body, the broad elytra, the rather sparse punctation of the forebody, and the completely divided female tergite IX. The only species that show some similarities are the species of the *L. varisternale* group, which often have the male sternite VIII weakly modified and narrowly without setae in the middle and a symmetric aedeagus with a slender ventral process and only with membranous internal structures.

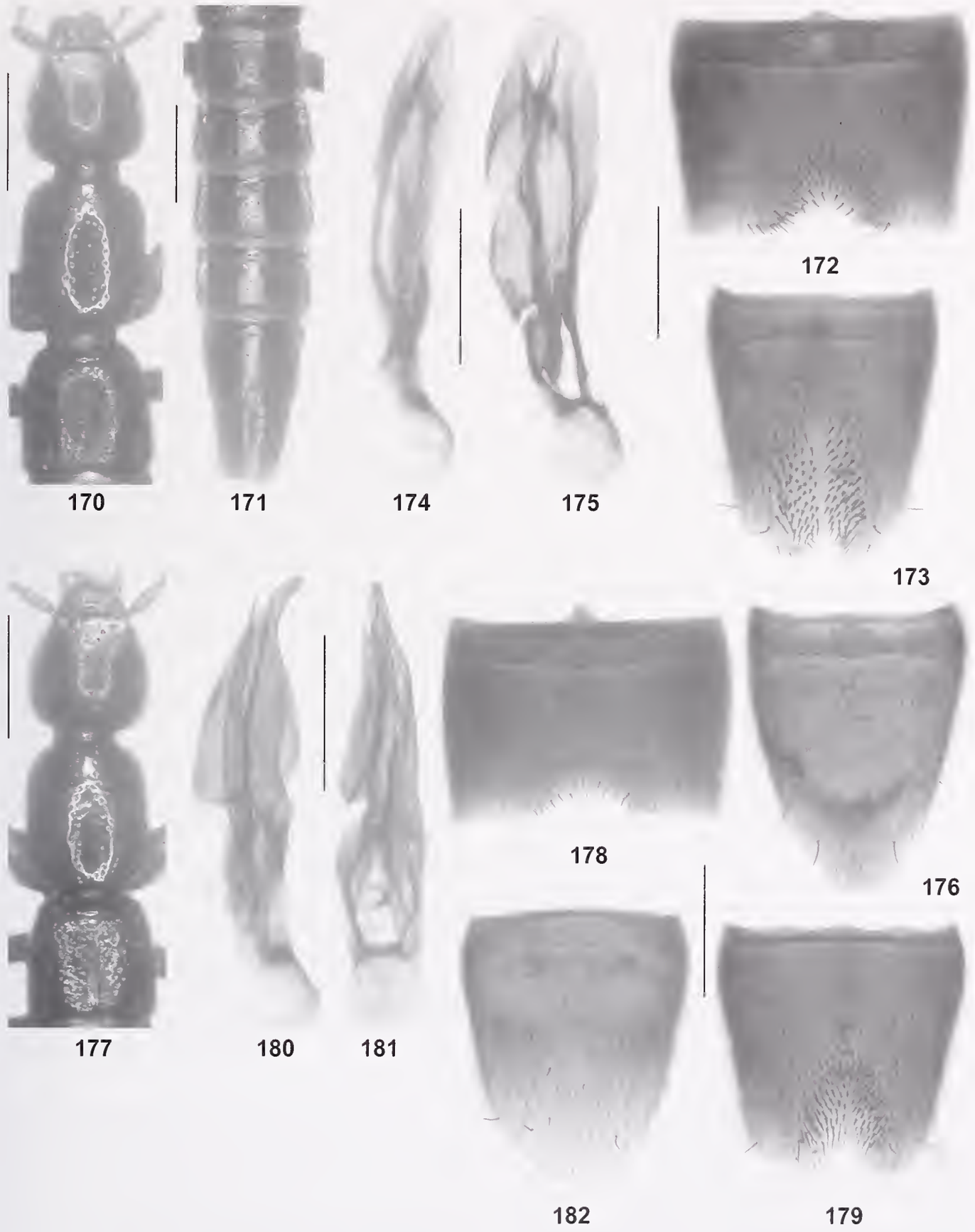
Distribution and natural history. The type locality is situated to the northwest of Songpan, northern Sichuan (Fig. 111). The specimens were sifted from grass roots, leaf litter, and moss on a moist north slope with *Salix* sp. and other shrubs at an altitude of 3600 m, together with *L. detruncatum* and numerous specimens of *L. biapicale*.

Fig. 169. Distributions of species of the *L. varisternale* group (filled symbols) and the *L. fissispinosum* group (open symbols): *L. tectiforme* (filled circles); *L. spinigerum* (open triangle); *L. longispinosum* (open circles); *L. rectispinosum* (open squares); *L. fissispinosum* (open diamonds).

The *Lathrobium fissispinosum* species group

Lathrobium fissispinosum sp. n. (Figs 169–176)

Type material. Holotype ♂: "CHINA: W-Hubei (Daba Shan), pass E of Mt. Da Shennongjia, 12 km NW Muyuping, 31°30'N, 110°21'E, 19.VII.2001, leg. M. Schülke [C01-13C] / creek valley, 1950–2050 m, mixed deciduous forest, moss, dead wood, mushrooms (sifted) [C01-13C] / Holotypus ♂ *Lathrobium fissispinosum* sp. n., det. V. Assing 2012" (cSch). Paratypes: 4♂, 2♀: same data as holotype (cSch, cAss, ZFMK); 2♂, 2♀: same data, but "22.VII.2001 ... [13E]" (cSch, cAss); 2♂, 2♀: "China (Daba Shan) pass E Mt. Da Shennongjia, 12 km NW Muyuping 31°30'N, 110°21'E 1950 m (dry creek vall., mix. decid. forest) 16.–22.VII.2001 Wrase [13]" (cSch); 1♂, 8♀: "CHINA: W-Hubei daba [sic] Shan pass E of Mt. Shennongjia 12 km / NW Muyuping 31°30'N 110°21'E 1950 m A. Smetana [C117]" (cSme, cAss); 2♀: same data as before, but "16.VII.2001 ... [C104]" (cSme); 1♂: same data as before, but "19.7.01 ... [C111] (cAss); 2♂, 4♀: "CHINA: W-Hubei (Daba Shan), mountain range NE Muyuping, pass 12 km N Muyuping, 31°32'N, 110°26'E, 2380 m, leg. M. Schülke [C01-15] / 17.VII.2001, N pass, N-slope with young deciduous forest, bank of small creek, moss (sifted) [C01-15]" (cSch, cAss); 1♂: same data as before, but "21.VII.2001 ... [15C]"; 1♂: "CHINA (W-Hubei) Daba Shan, mountain range NE Muyuping, pass 12 km N Muyuping, 31°32'N, 110°26'E, 2380 m, N pass (N-slope, young decid. for., shrubs, moss) 17.–21.VIII.2001 Wrase [15]" (cAss); 1♂: "CHINA: W-Hubei Daba Shan mtn. range NE Muyuping pass 12 km / N Muyu-ping 31°32'N 110°26'E 2380 m 17.7.01 A. Smetana [C107]" (cSme); 2♀: "CHINA (W-Hubei) Daba Shan, creek vall. 11 km NW Muyuping, 31°30'N, 110°22'E, 1960 m (creek vall., mix. decid. for., moss, leaves-sift.) 18.VII.2001 Wrase [17]" (cSch); 2♂, 1♀: "CHINA: W-Hubei Daba Shan crk. valley 11 km NW Muyuping 31°30'N / 110°22'E 1960 m, 18.VII.2001 A. Smetana [C109]" (cSme, cAss); 1♀: "CHINA: W-Hubei Daba Shan mtn. range NE Muyuping crk. valley / 4 km N Muyuping 1700 m 21.7.01 A. Smetana [C116]" (cSme); 1♂, 1♀: "China, W Hubei, Shennongjia Nat. Res., 2000–2200 m, litter, 7.VI.95 S. Kurbatov" (MHNG, cAss); 2♂, 2♀ [evidently mislabelled]: "CHINA: S-Shaanxi (Qinling Shan), pass on rd. Zhouzhi - Foping, 105 km SW Xi'an, N-slope, 1880 m, 33°44'N, 107°58'E, leg. M. Schülke [C01-03] / 4.VII.2001, shady rockwall base, moist (sifted) [C01-03]" (cSch, cAss).



Figs 170–182. *Lathrobium fissispinosum* (**170–176**) and *L. rectispinosum* (**177–182**). **170, 177.** Forebody. **171.** Abdomen. **172, 178.** Male sternite VII. **173, 179.** Male sternite VIII. **174–175, 180–181.** Aedeagus in lateral and in (latero-)ventral view. **176, 182.** Female sternite VIII. Scale bars: 170–171, 177: 1.0 mm; 172–176, 178–182: 0.5 mm.

Etymology. The specific epithet (Latin, adjective: with split spine) alludes to the apically bifid spine in the internal sac of the aedeagus.

Description. Size without sexual dimorphism; body length 7.3–9.0 mm; length of forebody 3.4–3.9 mm. Coloration: body dark-brown to blackish with paler abdominal apex (segments IX–X); legs dark-reddish to brown; antennae reddish.

Head (Fig. 170) approximately as broad as, or slightly broader than long; punctation moderately coarse and rather sparse, even sparser in median dorsal portion; interstices on average broader than punctures, with fine, but distinct microreticulation and subdued shine. Eyes moderately small, composed of > 50 ommatidia, approximately 1/4 the length of postocular region in dorsal view, and approximately 0.35–0.40 times as long as postocular region in lateral view. Antenna 1.8–2.0 mm long.

Pronotum (Fig. 170) approximately 1.25 times as long as broad, indistinctly broader than head; punctation similar to that of head, but somewhat sparser; midline rather narrowly impunctate; interstices without microsculpture and glossy.

Elytra (Fig. 170) short, approximately 0.55 times as long as pronotum; punctation relatively sparse and defined; interstices without microsculpture. Hind wings completely reduced.

Abdomen (Fig. 171) with fine punctation, punctures on tergites III–VI dense, those on tergites VII and VIII distinctly sparser; interstices with very shallow, almost obsolete microsculpture and rather glossy; posterior margin of tergite VII without palisade fringe.

♂: protarsomeres I–IV strongly dilated; tergite VIII with moderately convex posterior margin; sternites III–VI unmodified; sternite VII (Fig. 172) with distinct median impression posteriorly, this impression with numerous distinctly modified, stout black setae, posterior margin distinctly concave in the middle; sternite VIII (Fig. 173) weakly oblong, distinctly tapering posteriorly, with oblong and extensive median impression in posterior two thirds, this impression without setae along the middle, on either side of middle with numerous distinctly modified, stout black setae, posterior excision shallowly V-shaped; aedeagus (Figs 174–175) 1.5 mm long, strongly modified, asymmetric and somewhat twisted; internal sac with long and apically bifid sclerotized spine.

♀: protarsomeres I–IV distinctly dilated, but slightly less so than in male; posterior margin of tergite VIII strongly convex; sternite VIII (Fig. 176) 1.1–1.2 mm long, distinctly oblong, and convexly produced posteriorly; tergite IX anteriorly undivided; tergite X weakly convex in cross-section, much longer (ca. 2.7 ×) than tergite IX in the middle.

Comparative notes. *Lathrobium fissispinosum* is distinguished from all its congeners particularly by the derived male sexual characters. It is additionally separated from the syntopic *L. curvispinosum* and *L. bifidum* as follows: from *L. curvispinosum* by smaller size, paler coloration of the abdominal apex and the legs, denser punctation of the pronotum, distinctly denser punctation of tergites VII and VIII, the more strongly convex posterior margin of the female tergite VIII, and the more slender and differently shaped female sternite VIII; from *L. bifidum* by larger size, darker coloration, the absence of a dimorphism of the metatibiae, and the different shape of the female sternite VIII.

Distribution and natural history. The species was found in several localities in the Daba Shan, to the north and northwest of Muyuping (Fig. 169). Remarkably, according to their labels, three specimens were collected in the Qinling Shan to the southwest of Xi'an, some 330 km to the northwest of the localities in the Daba Shan. In view of the usually restricted distributions of micropterous *Lathrobium* species in China, such a vast extension of the range of this species would seem exceptional and requires confirmation. Mislabelled specimens are not unprecedented. The type specimens were sifted from the leaf litter and moss in mixed deciduous forests at altitudes of 1700–2380 m, partly together with *L. curvispinosum* and *L. bifidum*.

Lathrobium rectispinosum sp. n. (Figs 169, 177–182)

Type material. Holotype ♂: "CHINA: S-Shaanxi (Daba Shan), NW pass 25 km NW Zhenping, 32°01'N, 109°19'E, 2150 m, 11.VII.2001, leg. M. Schülke [C01-09] / creek valley, young coniferous forest, moss (sifted) [C01-09] / Holotypus ♂ *Lathrobium rectispinosum* sp. n., det. V. Assing 2012" (cSch). Paratypes: 4♀: same data as holotype (cSch, ZFMK); 3♂, 2♀: "CHINA: S-Shaanxi (Daba Shan), mountain range N pass 22 km NW Zhenping, N-slope, 32°01'N, 109°21'E, 2400 m, 13.VII.2001, leg. M. Schülke [C01-11] / mixed forest (Pinus Salix and other deciduous trees) (sifted) [C01-11] (cSch, cAss); 1♀: "CHINA Shaanxi Daba Shan NW pass 25 km NW Zhenping 32°01'N / 109°19'E 2150 m 11.VII.2001 A. Smetana [C99]" (cSme).

Etymology. The specific epithet (Latin, adjective: with straight spine) alludes to the long and straight spine in the internal sac of the aedeagus.

Description. Size without sexual dimorphism; body length 6.8–8.3 mm; length of forebody 3.2–3.6 mm. Coloration: body blackish-brown to blackish; legs dark-reddish; antennae reddish.

External characters (Fig. 177) as in *L. fissispinosum*, distinguished only by the sexual characters.

♂: protarsomeres I–IV strongly dilated; tergite VIII with weakly convex posterior margin; sternites III–VI unmodified; sternite VII (Fig. 178) with distinct median impression posteriorly, this impression with numerous very weakly modified setae, posterior margin distinctly concave in the middle; sternite VIII (Fig. 179) approximately as long as broad, distinctly tapering posteriorly, with moderately extensive median impression posteriorly, this impression with numerous distinctly modified, stout black setae, posterior excision relatively small and anteriorly concave; aedeagus (Figs 180–181) approximately 1.4 mm long, strongly modified, asymmetric and somewhat twisted, with two large, lamelliform lateral lobes and a long, slender, and somewhat curved (lateral view) median lobe; internal sac with long and straight sclerotized spine.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; posterior margin of tergite VIII distinctly convex; sternite VIII (Fig. 182) approximately 1.1 mm long, moderately oblong, and with broadly convex posterior margin; tergite IX with short and undivided anterior median portion; tergite X weakly convex in cross-section, longer (ca. 2.0 ×) than tergite IX in the middle.

Comparative notes. *Lathrobium rectispinosum* is evidently most closely allied to *L. fissispinosum*, as can be inferred from the similar external and male sexual characters. It is distinguished from all its congeners particularly by the derived morphology of the aedeagus (presence of long straight spine in internal sac, ventral process subdivided into three lobes, the lateral ones lamellate), as well as by the shapes and chaetotaxy of the male sternites VII and VIII. It additionally differs from *L. fissispinosum* by the different shape of the female sternite VIII and by the relatively shorter female tergite X, i.e., the longer anterior median portion of the female tergite IX.

Distribution and natural history. The species is was found in two localities in the Daba Shan, to the northwest of Zhenping, Shaanxi (Fig. 169). The specimens were sifted from leaf litter and moss in a young coniferous forest and in a mixed forest at altitudes of 2150 and 2400 m, partly together with *L. aquilinum*.

Lathrobium curvispinosum sp. n. (Figs 183–189, 198)

Type material. Holotype ♂: "CHINA: W-Hubei (Daba Shan), pass E of Mt. Da Shennongjia, 12 km NW Muyuping, 31°30'N, 110°21'E, 19.VII.2001, leg. M. Schülke [C01-13C] / creek valley, 1950–2050 m, mixed deciduous forest, moss, dead wood, mushrooms (sifted) [C01-13C] / Holotypus ♂ *Lathrobium curvispinosum* sp. n., det. V. Assing 2012" (cSch). Paratypes: 1♀: same data as holotype, but "22.VII.2001 ... [13E]" (cSch); 2♂: "China (Daba Shan) pass E Mt. Da Shennongjia, 12 km NW Muyuping 31°30'N, 110°21'E 1950 m (dry creek vall., mix. decid. forest) 16.–22.VII.2001 Wrase [13]" (cAss); 3♂, 6♀: "CHINA: W-Hubei daba [sic] Shan pass E of Mt. Shennongjia 12 km / NW Muyuping 31°30'N 110°21'E 1950 m A. Smetana [C117]" (cSme, cAss); 1♂: "CHINA: W-Hubei (Daba Shan), mountain range NE Muyuping, pass 12 km N Muyuping, 31°32'N, 110°26'E, 2380, leg. M. Schülke [C01-15] / 17.VII.2001, N pass, N-slope with young deciduous forest, bank of small creek, moss (sifted) [C01-15]" (cSch); 1♂: "CHINA: W-Hubei Daba Shan crk. valley 11 km NW Muyuping 31°30'N / 110°22'E 1960 m, 18.VII.2001 A. Smetana [C109]" (cAss); 1♂: "China, W Hubei, Shennongjia Nat. Res., 2000–2200 m, litter, 7.VI.95 S. Kurbatov" (MHNG).

Etymology. The specific epithet (Latin, adjective: with straight spine) alludes to the long and curved spine in the internal sac of the aedeagus.

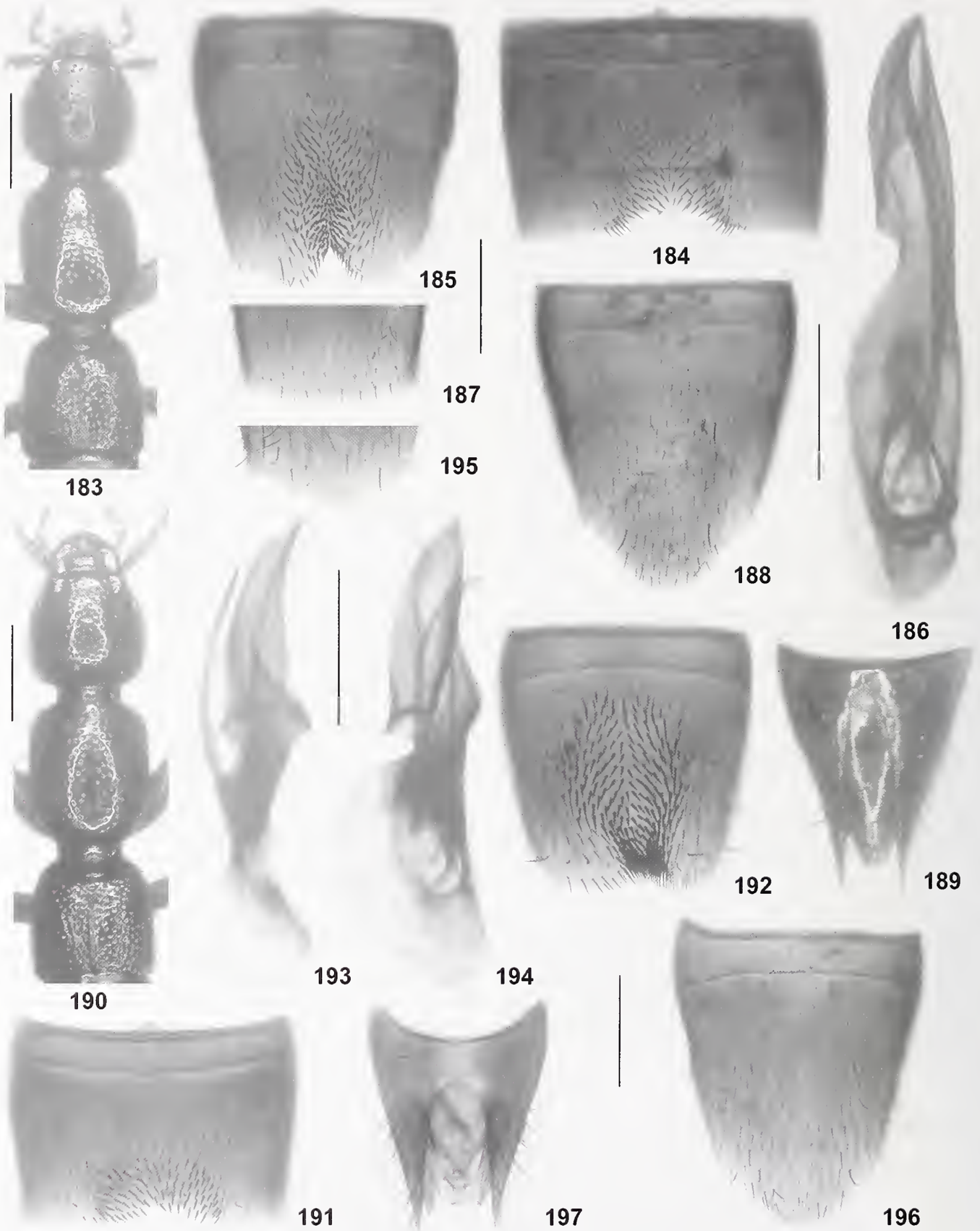
Description. Relatively large species, size without sexual dimorphism; body length 8.4–10.0 mm; length of forebody 4.2–4.7 mm. Coloration: body blackish; legs dark-brown to blackish-brown with paler tarsi; antennae reddish-brown.

Externally similar to the smaller *L. fissispinosum*, but distinguished as follows:

Pronotum (Fig. 183) broad, approximately 1.2 times as long as broad; punctation of tergite VII nearly as dense as that of tergites III–VI; tergite VIII without sexual dimorphism, posterior ♂: protarsomeres I–IV strongly dilated; tergite VIII with weakly convex posterior margin; sternites III–VI unmodified; sternite VII (Fig. 185) with shallow median impression, this impression with numerous very weakly modified setae, posterior margin distinctly concave in the middle; sternite VIII (Fig. 185) approximately as long as broad, moderately tapering posteriorly, with extensive median depression, this depression with numerous distinctly modified, stout black setae, posterior excision moderately deep and V-shaped; aedeagus (Fig. 186) 1.8–1.9 mm long and asymmetric; ventral process modified, somewhat twisted, apically acute, and in the middle distinctly notched on the left side in ventral view; internal sac with long and curved sclerotized spine.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; sternite VIII (Fig. 188) approximately 1.4 mm long, moderately oblong, and posteriorly convexly produced; tergite IX anteriorly very narrowly undivided, but with fine suture (Fig. 189); tergite X weakly convex in cross-section posteriorly, anteriorly flat, almost reaching anterior margin of tergite IX in the middle.

Comparative notes. *Lathrobium curvispinosum* is evidently closely allied to the partly syntopic *L. fis-*



Figs 183–197. *Lathrobium curvispinosum* (**183–189**) and *L. longispinosum* (**190–197**). **183, 190.** Forebody. **184, 191.** Male sternite VII. **185, 192.** Male sternite VIII. **186, 193–194.** Aedeagus in lateral and in latero-ventral view. **187, 195.** Posterior portion of female tergite VIII. **188, 196.** Female sternite VIII. **189, 197.** Female tergites IX–X. Scale bars: 183, 190: 1.0 mm; 184–189, 191–197: 0.5 mm.

sispinosum, *L. rectispinosum*, and *L. longispinosum*, as can be inferred particularly from the synapomorphically derived morphology of the aedeagus, especially the presence of a long sclerotized spine in the internal sac and the asymmetric ventral process, but also from the similar external morphology, the shape and chaetotaxy of the male sternite VII (posterior margin distinctly concave in the middle), the similar shape and chaetotaxy of the male sternite VIII, and the anteriorly short median portion of the female tergite IX. *Lathrobium curvispinosum* differs from the syntopic *L. fissispinosum* by larger body size, darker coloration, a broader pronotum, the denser punctation of the abdominal tergite VII, the deeper posterior concavity of the male sternite VII, the shape and chaetotaxy of the male sternite VIII (not oblong, deeper and V-shaped posterior excision, denser cluster of modified setae), the different shape of the ventral process of the aedeagus, the apically unsplit internal spine of the aedeagus, and by the less oblong female sternite VIII. From all geographically close congeners, *L. curvispinosum* is distinguished by larger size and darker coloration alone.

Distribution and natural history. The species was found in four geographically close localities in the Daba Shan, western Hubei, to the north and northwest of Muyuping (Fig. 198). The specimens were sifted from leaf litter and moss in mixed deciduous forests at altitudes of 1950–2380 m, together with *L. fissispinosum* and *L. bifidum*.

***Lathrobium longispinosum* sp. n.** (Figs 169, 190–197)

Type material. Holotype ♂: "CHINA [29]- S-Shaanxi, Micang Shan, 30 km S Hanzhong, 32°45'56"N, 106°53'57"E, 1070 m, 15.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium longispinosum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 1♂, 1♀: same data as holotype (cAss); 1♀: "CHINA: S-Shaanxi [CH12-29], Micang Shan, 30 km S Hanzhong, 32°45'56"N, 106°53'57"E, 1070 m, stream valley, litter and soil sifted, 15.VIII.2012, leg. M. Schülke" (cSch); 2♂, 11♀[3♀ teneral]: "CHINA [27] - S-Shaanxi, Micang Shan, 42 km S Hanzhong, 32°40'52"N, 106°49'16"E, 1090 m, 14.VIII.2012, V. Assing" (cAss); 1♂, 2♀ [1♀ teneral]: "CHINA: S-Shaanxi [CH12-27], Micang Shan, 42 km S Hanzhong, 32°40'52"N, 106°49'16"E, 1090 m, NW-slope, mixed forest margin with rocks, litter, grass, and moss sifted, 14.VIII.2012, leg. M. Schülke" (cSch, ZFMK); 7♂, 4♀ [4♂, 1♀ teneral]: "CHINA [32] - S-Shaanxi [recte: N-Sichuan], Micang Shan, 42 km S Hanzhong, 32°40'43"N, 106°48'33"E, 1090 m, 17.VIII.2012, V. Assing" (cAss), 1♂, 2♀ [1♀ teneral]: "CHINA: S-Shaanxi [recte: N-Sichuan] [CH12-32], Micang Shan, 42 km S Hanzhong, 32°40'43"N, 106°48'33"E, 1090 m, stream valley, shady S-slope, sec. mixed forest, litter, grass, and herbs near path sifted, 17.VIII.2012, M. Schülke" (cSch).

Fig. 198. Distributions of species of the *L. fissispinosum* group: *L. crassispinosum* (open diamonds); *L. trifidum* (open triangle); *L. curvispinosum* (open circles).

Etymology. The specific epithet (Latin, adjective: with straight spine) alludes to the long spine in the internal sac of the aedeagus.

Description. Relatively large species, size subject to weakly pronounced sexual dimorphism, males slightly larger on average; body length 8.0–9.5 mm (♂), 7.5–9.0 mm (♀); length of forebody 4.2–4.5 mm (♂), 3.7–4.3 mm (♀). Coloration: body blackish, with the apex of the abdomen (posterior margin of segment VII; segments VIII–X) reddish-brown; legs reddish, with the femora usually darker; antennae reddish.

Head (Fig. 190) weakly transverse, approximately 1.05 times as broad as long; posterior angles moderately marked, rounded but noticeable; punctation relatively coarse and dense, sparser in median dorsal portion; interstices glossy, with shallow, often only with barely noticeable traces of microreticulation, on average as broad as, or narrower than diameter of punctures, broader than diameter of punctures in median dorsal portion. Eyes relatively small, approximately 1/4 the length of postocular region in dorsal view and 0.3 times as long as distance from posterior margin of eye to posterior constriction in lateral view. Antenna 2.2–2.4 mm long.

Pronotum (Fig. 190) broad, approximately 1.2 times as long as broad, and slightly broader than head; punctation similar to that of head; interstices without microreticulation.

Elytra (Fig. 190) short, approximately 0.5 times as long as pronotum; punctation dense, rather coarse, and usually defined. Hind wings completely reduced.

Abdomen with punctation of tergites III–VI dense and not particularly fine, that of tergites VII and VIII fine and distinctly sparser; posterior margin of tergite VII without palisade fringe; tergite VIII with moderately pronounced sexual dimorphism.

♂: protarsomeres I–IV moderately strongly dilated; tergite VIII with distinctly convex posterior margin; sternites III–VI unmodified; sternite VII (Fig. 191) moderately transverse and with shallow and extensive median impression posteriorly, this impression with numerous distinctly modified, stout and black setae, posterior margin rather weakly concave in the middle; sternite VIII (Fig. 192) weakly oblong, with extensive, distinct, somewhat asymmetrically oblique, and broad median impression, this impression with numerous strongly modified, stout and black setae, posteriorly with cluster of conspicuously dense black setae, posterior excision broad, weakly concave, and in asymmetric position; aedeagus (Figs 193–194) approximately 1.5 mm long and asymmetric; ventral process modified, subdivided into two large lamellate lobes of different shapes; internal sac with long and weakly curved sclerotized spine.

♀: protarsomeres I–IV dilated, only slightly less so than in male; posterior margin of tergite VIII obtusely pointed in the middle (Fig. 195); sternite VIII (Fig. 196) approximately 1.2–1.3 mm long, moderately oblong, posterior margin distinctly convex; tergite IX anteriorly undivided, without suture; tergite X weakly convex, almost flat in cross-section, distinctly longer than tergite IX in the middle (Fig. 197).

Comparative notes. As can be inferred from the similarly derived male and female sexual characters, particularly the general morphology of the aedeagus and the presence of a long sclerotized spine in the internal sac, *L. longispinosum* undoubtedly belongs to the *L. fissispinosum* group. It is distinguished from all the species of this group by the much shallower microreticulation of the head, by the shapes and chaetotaxy of the male sternites VII and VIII, by the morphology of the aedeagus, and also, though less clearly, by the female terminalia. The aedeagus is most similar to that of *L. rectispinosum*, from which *L. longispinosum* differs by larger body size, darker coloration of the body, relatively smaller eyes, and the sexual characters.

Distribution and natural history. The species was found in three geographically close localities in the Micang Shan, southern Shaanxi, to the south of Hanzhong (Fig. 169). The specimens were sifted from leaf litter, grass roots, and moss in mixed forests and from the soil along a forest path at an altitude of 1070–1090 m, partly together with *L. sinense* and *L. crassispinosum*. Some of the specimens are teneral.

Lathrobium spinigerum sp. n. (Figs 169, 199–205)

Type material. Holotype ♂: "CHINA [31] - S-Shaanxi, Micang Shan, 40 km SW Hanzhong, 32°52'25"N, 106°37'11"E, 1530 m, 16.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium spinigerum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 2♂, 4♀ [1♂, 3 ♀ teneral]: same data as holotype (cAss).

Etymology. The specific epithet (Latin, adjective: with spines) alludes to the presence of a long sclerotized spine in the internal sac of the aedeagus.

Description. Species of moderate size without apparent sexual size dimorphism; body length 5.8–6.7 mm; length of forebody 2.8–3.2 mm. Coloration: body dark-brown; legs reddish to pale-brown; antennae reddish.

Head (Fig. 199) approximately as broad as long; punctation relatively fine and rather sparse, even sparser in median dorsal portion; interstices on dorsal surface on average distinctly broader than punctures, with distinct microreticulation and almost matt. Eyes moderately small, composed of > 50 ommatidia, little less than 1/3 the length

of postocular region in dorsal view, and approximately 0.4 times as long as postocular region in lateral view. Antenna approximately 1.6 mm long.

Pronotum (Fig. 199) approximately 1.25 times as long as broad and 1.05 times as broad as head, distinctly tapering posteriad; punctation relatively fine and sparse; midline rather broadly impunctate; interstices without microsculpture and glossy, distinctly broader than diameter of punctures.

Elytra (Fig. 199) short, approximately 0.55 times as long as pronotum; punctation of variable density, shallow and ill-defined to defined, dense to moderately dense; interstices without microsculpture, narrower to broader than diameter of punctures. Hind wings completely reduced.

Abdomen with fine punctation, punctures only slightly sparser on tergites VII and VIII than on anterior tergites; interstices with fine, shallow microsculpture; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII sexually dimorphic.

♂: protarsomeres I–IV strongly dilated; tergite VIII with moderately convex posterior margin; sternites III–VI unmodified; sternite VII (Fig. 200) moderately transverse, with small and shallow median impression posteriorly, posterior margin weakly concave in the middle, pubescence unmodified, except for few weakly modified dark marginal setae near posterior concavity; sternite VIII (Fig. 201) weakly transverse, with extensive, shallow median impression, this impression with numerous strongly modified stout black setae, posterior margin truncate; aedeagus (Figs 202–203) approximately 1.0 mm long and distinctly asymmetric; ventral process divided into two lobes of different shapes, right lobe (ventral view) much longer than left lobe; dorsal plate strongly sclerotized, broadly lamellate, tapering apicad, and apically acute; internal sac with distinctly sclerotized long and in the middle obtusely angular spine.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; tergite VIII distinctly and almost triangularly produced posteriorly; sternite VIII (Fig. 204) approximately 0.9 mm long, oblong, and gradually tapering posteriad, and with strongly convex posterior margin; tergite IX anteriorly divided; tergite X separating tergite IX anteriorly and reaching anterior margin of tergite IX (Fig. 205).

Comparative notes. Based on the morphology of the aedeagus (presence of a long sclerotized spine in the internal sac, ventral process asymmetric, subdivided into two lobes of unequal size and shapes, basal portion of aedeagus small), *L. spinigerum* belongs to the *L. fissispinosum* group. The morphology of the ventral process and the dorsal plate of the aedeagus, the similar shape and chaetotaxy of the male sternite VII, the similarly derived shape and chaetotaxy of the male sternite VIII, the anteriorly completely divided female tergite IX, as well as the similar external characters suggest that it is the adelphotaxon of the geographically close *L. crassispinosum*, from which *L. spinigerum* differs by the truncate posterior margin (*L. crassispinosum*: posterior margin convex) and the arrangement of the modified setae of the male sternite VIII, the shapes of the ventral process and the dorsal plate of the aedeagus, the obtusely angular internal spine of the aedeagus (*L. crassispinosum*: spine almost straight), and the posteriorly less strongly convex female sternite VIII.

Distribution and natural history. The type locality is situated in the Micang Shan, to the southwest of Hanzhong, southern Shaanxi (Fig. 169). The partly teneral specimens were sifted from leaf litter and moss in a mixed secondary forest at an altitude of 1530 m, together with *L. serrilobatum*.

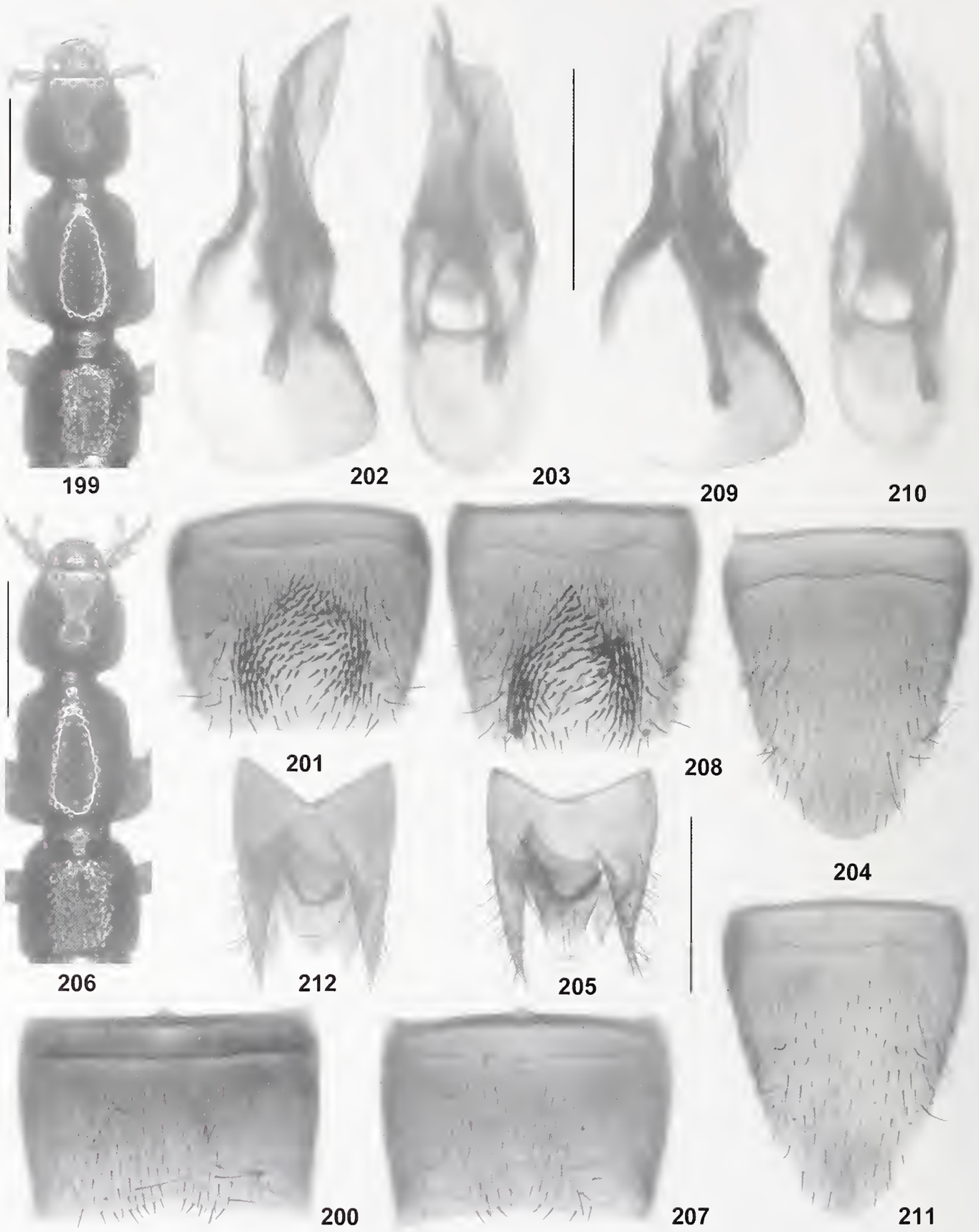
Lathrobium crassispinosum sp. n. (Figs 198, 206–212)

Type material. Holotype ♂: "CHINA [28]- S-Shaanxi Micang Shan, 34 km S Hanzhong, 32°44'22"N, 106°51'55"E, 1460 m, 14.VIII.2012, V. Assing / Holotypus *Lathrobium crassispinosum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 4♂, 7♀ [3♂, 4♀ teneral]: same data as holotype (cAss); 2♂, 1♀ [1♂, 1♀ teneral]: same data, but leg. Schülke (cSch, ZFMK); 2♂, 2♀: "CHINA [29]- S-Shaanxi Micang Shan, 30 km S Hanzhong, 32°45'56"N, 106°53'57"E, 1070 m, 15.VIII.2012, V. Assing" (cAss); 1♂, 1♀ [both teneral]: same data, but leg. M. Schülke (cSch); 3♂, 3♀ [1♂, 1♀ teneral]: "CHINA [30] - S-Shaanxi Micang Shan, 33 km S Hanzhong, 32°44'44"N, 106°52'46"E, 1360 m, 15.VIII.2012, V. Assing" (cAss); 1♂ [teneral]: same data, but leg. Schülke (cSch); 2♂, 2♀: "CHINA [32] - S-Shaanxi [recte: N-Sichuan], Micang Shan, 42 km S Hanzhong, 32°40'43"N, 106°48'33"E, 1090 m, 17.VIII.2012, V. Assing" (cAss); 2♂: same data, but leg. Schülke (cSch); 1♂: "CHINA: Shaanxi Prov., Nanzheng County, Liping National Forest Park, 32°50'N, 106°36'E, 12.vii.2012, alt. 1,400–1,600 m, Chen, Li, Ma, Zhao & Pan leg." (SNUC).

Etymology. The specific epithet (Latin, adjective: with stout spine) alludes to the presence of a long and stout sclerotized spine in the internal sac of the aedeagus.

Description. Species of moderate size without apparent sexual size dimorphism; body length 6.0–7.2 mm; length of forebody 3.0–3.3 mm. External characters (Fig. 206) as in *L. spinigerum*.

♂: protarsomeres I–IV strongly dilated; tergite VIII with convex posterior margin; sternites III–VI unmodified; sternite VII (Fig. 207) moderately transverse, with shallow median impression posteriorly, posterior margin weakly concave in the middle, pubescence unmodified, except for few weakly modified dark marginal setae near posterior



Figs 199–212. *Lathrobium spinigerum* (**199–205**) and *L. crassispinosum* (**206–212**). **199, 206.** Forebody. **200, 207.** Male sternite VII. **201, 208.** Male sternite VIII. **202–203, 209–210.** Aedeagus in lateral and in ventral view. **204, 211.** Female sternite VIII. **205, 212.** Female tergites IX–X. Scale bars: 199, 206: 1.0 mm; 200–205, 207–212: 0.5 mm.

concavity; sternite VIII (Fig. 208) weakly transverse, with extensive median impression, this impression with numerous strongly modified stout black setae, posterior margin convex; aedeagus (Figs 209–210) approximately 1.0 mm long and distinctly asymmetric; ventral process divided into two lobes of different shapes, right lobe (ventral view) much larger and longer than left lobe; dorsal plate strongly sclerotized, broadly lamellate, and apically truncate in dorsal view; internal sac with distinctly sclerotized, long and stout spine.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; tergite VIII distinctly and almost triangularly produced posteriorly; sternite VIII (Fig. 211) approximately 0.9 mm long, oblong, and gradually tapering posteriad, and with almost acutely pointed posterior margin; tergite IX anteriorly divided; tergite X obtusely angled apically, separating tergite IX anteriorly, and reaching anterior margin of tergite IX (Fig. 212).

Comparative notes. Based on the morphology of the aedeagus (presence of a long sclerotized spine in the internal sac, ventral process asymmetric, subdivided into two lobes of unequal size and shapes, basal portion of aedeagus small), *L. crassispinosum* belongs to the *L. fissispinosum* group. The morphology of the ventral process and the dorsal plate of the aedeagus, the similar shape and chaetotaxy of the male sternite VII, the similarly derived shape and chaetotaxy of the male sternite VIII, the anteriorly completely divided female tergite IX, and the similar external characters suggest that it is the adelphotaxon of *L. spinigerum*.

Distribution and natural history. The species was found in five geographically close localities in the Micang Shan, to the south of Hanzhong, southern Shaanxi and northern Sichuan (Fig. 198). The specimens were sifted from leaf litter, moss, grass roots, and soil in mixed and deciduous forests, and in stream valleys beneath shrubs at elevations from 1070 up to approximately 1500 m, partly together with *L. longispinosum* or *L serrilobatum*. Several paratypes are teneral.

***Lathrobium serrilobatum* sp. n.** (Figs 213–223)

Type material. Holotype ♂: "CHINA [30] - S-Shaanxi, Micang Shan, 33 km S Hanzhong, 32°44'44"N, 106°52'46"E, 1360 m, 15.VIII.2012, V. Assing / Holotypus ♂ *Lathrobium serrilobatum* sp. n., det. V. Assing 2012" (cAss). Paratypes: 7♂, 7♀ [1♂, 3♀ teneral]: same data as holotype (cAss); 5♂, 3♀: same data, but leg. Schülke (cSch, ZFMK); 3♀: "CHINA [31] - S-Shaanxi, Micang Shan, 40 km SW Hanzhong, 32°52'25"N, 106°37'11"E, 1530 m, 16.VIII.2012, V. Assing" (cAss); 1♂ [teneral]: "CHINA (S.Shaanxi) Micang Shan, 40 km SW Hanzhong, 1530 m, 32°52'25"N, 106°37'11"E (N.slope, mixed secondary forest, litter, moss sifted) 16.VIII.2012 D.W. Wrase [31]" (cAss); 3♂, 5♀: "CHI-

Fig. 213. Distributions of species of the *L. fissispinosum* group (open symbols) and of the *L. aquilinum* group (filled symbol): *L. serrilobatum* (open circles); *L.bifidum* (open diamonds); *L. aquilinum* (filled triangle).

NA: Sichuan Prov., Nanjiang County, Mt. Micangshan, 32°39'N, 107°01'E, 27. iv.2008, alt. 1,800 m, Huang & Xu leg." (SNUC).

Etymology. The specific epithet is an adjective composed of the Latin noun serra (saw) and the Latin adjective lobatum (lobed) and refers to the serrate dorsal lobe of the bifid ventral process of the aedeagus.

Description. Size without sexual dimorphism; body length 7.2–8.7 mm; length of forebody 3.6–4.1 mm. Coloration: body castaneous to dark-brown, elytra sometimes slightly paler reddish; legs, except the often somewhat darker femora, and antennae reddish.

Head (Fig. 214) approximately as long as broad; punctation moderately coarse and rather sparse, even sparser in median dorsal portion; interstices on dorsal surface on average broader than punctures, with fine and shallow microreticulation. Eyes moderately small, composed of > 50 ommatidia, 1/4–1/3 the length of postocular region in dorsal view, and 0.30–0.35 times as long as postocular region in lateral view. Antenna approximately 2.0–2.1 mm long.

Pronotum (Fig. 214) moderately broad, approximately 1.25 times as long as broad and 1.05 times as broad as head; punctation similar to that of head; midline rather broadly impunctate; interstices without microsculpture and glossy.

Elytra (Fig. 214) short, 0.50–0.55 times as long as pronotum; punctation mostly shallow and ill-defined to defined; interstices without microsculpture. Hind wings completely reduced.

Abdomen with fine punctation, punctures on tergites III–V dense, on tergite VI somewhat less dense, and on tergites VII and VIII sparse and very fine; interstices with fine, shallow, transverse microsculpture and some shine; posterior margin of tergite VII without palisade fringe; tergite VIII with weakly convex posterior margin in both sexes (Fig. 215).

♂: protarsomeres 1–IV moderately dilated; sternites III–VI unmodified; sternite VII (Fig. 216) moderately transverse, with weakly concave posterior margin, otherwise unmodified; sternite VIII (Fig. 217) approximately as long as broad, with shallow and extensive median impression, this impression with numerous moderately modified black setae, posterior excision asymmetric, rather broad, and not very deep; aedeagus (Figs 218–219) approximately 1.6 mm long, of distinctive shape, asymmetric, long and slender; ventral process subdivided into two lobes, the dorsal lobe conspicuously long, its ventral margins finely serrate (Figs 220–221), the ventral lobe much shorter and shaped like a scraper; basal portion of aedeagus small; dorsal plate reduced; internal sac without sclerotized spines and without distinct dark membranous structures.

♀: protarsomeres I–IV as dilated as in male; sternite VIII (Fig. 222) approximately 1.1 mm long, oblong, and with convex posterior margin; tergite IX anteriorly undivided; tergite X distinctly longer than tergite IX in the middle (Fig. 223).

Comparative notes. Based on the apically bilobed ventral process and the small basal portion of the aedeagus, as well as the anteriorly short and undivided median portion of the female tergite IX, *L. serrilobatum* is related to *L. fissispinosum* and allied species, though it lacks a long spine in the internal sac of the aedeagus. In external appearance, *L. serrilobatum* is similar to *L. rectispinosum*, but distinguished from this species by the shape of the head (weakly transverse in *L. rectispinosum*).

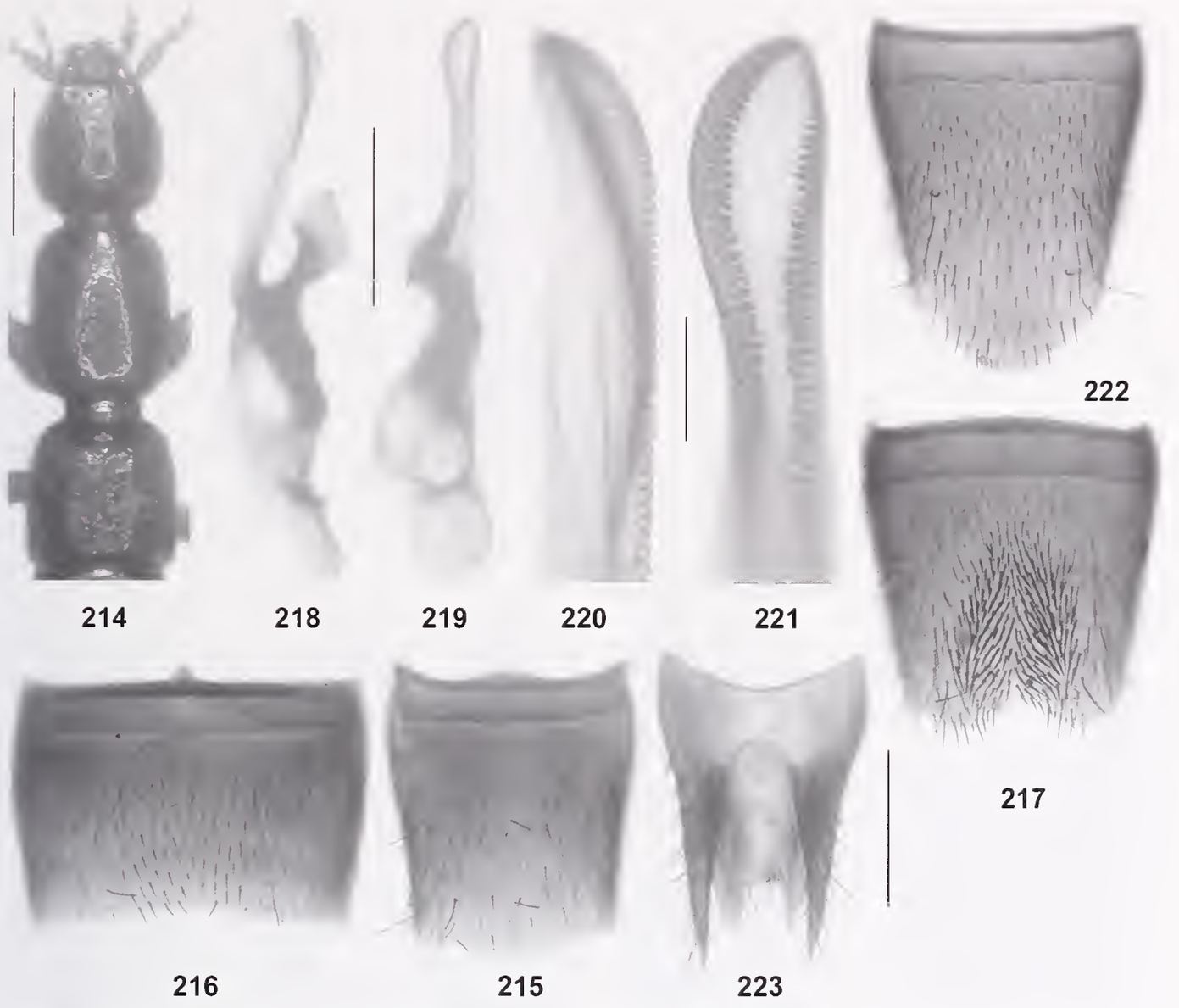
Distribution and natural history. The species was collected in three localities in the Micang Shan, two in Shaanxi to the southwest of Hanzhong and one in Sichuan in Nanjiang County (Fig. 213). The specimens from Shaanxi were sifted from leaf litter, moss and soil in mixed forests at altitudes of 1360 and 1530 m, together with *L. crassispinosum* and *L. spinigerum*. Those from Sichuan were collected at an altitude of 1800 m. Some of the paratypes from Shaanxi are teneral.

Lathrobium trifidum sp. n. (Figs 198, 224–233)

Type material. Holotype ♂: "CHINA: Border Shaanxi - Sichuan [now Chongqing] (Daba Shan), pass 20 km SSE Zhenping, 1700–1800 m, 31°44'N, 109°35'E, 12.VII.2001, leg. M. Schülke [C01-07C] / mixed forest, small creek valley, moss, bark (sifted) [C01-07C] / Holotypus ♂ *Lathrobium trifidum* sp. n., det. V. Assing 2012" (cSch). Paratypes: 1♂, 1♀: same data as holotype (cAss); 2♂, 2♀ [1♂, 1♀ teneral]: "CHINA (border Shaanxi-Sichuan [now Chongqing]) Daba Shan, pass 20 km SSE Zhenping 1700–1800 m 31°44'N, 109°35'E (small creek vall., young mixed forest, leaf litt., moss) 9.&12.VII.2001 Wrase [07]" (cSch, cAss, ZFMK); 2♂: "CHINA: border Shaanxi-Sichuan [now Chongqing] Daba Shan pass 20 km SSE Zhenping / 1700–1800 m 31°44'N 109°35'E 12.VII.2001 A. Smetana [C101]" (cAss); 1♀ [teneral]: same data, but "9.VII.2001 ... [C96b]" (cSme).

Etymology. The specific epithet (Latin, adjective: split into three parts) alludes to the shape of the ventral process of the aedeagus.

Description. Size rather variable, but without sexual dimorphism; body length 6.0–7.5 mm; length of forebody 2.9–3.4 mm. Coloration: body blackish-brown, elytra sometimes paler posteriorly, posterior margins of abdominal tergites dark-reddish; legs and antennae reddish.



Figs 214–223. *Lathrobium serrilobatum*. **214.** Forebody. **215.** Male tergite VIII. **216.** Male sternite VII. **217.** Male sternite VIII. **218–219.** Aedeagus in lateral and in ventral view. **220–221.** Apical portion of ventral process of aedeagus in lateral and in ventral view. **222.** Female sternite VIII. **223.** Female tergites IX–X. Scale bars: 214: 1.0 mm; 215–219, 222–223: 0.5 mm; 220–221: 0.1 mm.

Head (Fig. 224) weakly transverse, approximately 1.05 times as broad as long; punctation moderately coarse and rather sparse, even sparser in median dorsal portion; interstices on dorsal surface on average broader than punctures, with fine and shallow microreticulation. Eyes moderately small, composed of > 50 ommatidia, I/4–I/3 the length of postocular region in dorsal view, and approximately 0.35 times as long as postocular region in lateral view. Antenna approximately 1.6–1.8 mm long.

Pronotum (Fig. 224) rather broad, approximately 1.2 times as long as broad and 1.05 times as broad as head; punctation similar to that of head; midline rather broadly impunctate; interstices without microsculpture and glossy.

Elytra (Fig. 224) short, 0.50–0.55 times as long as pronotum; punctation of variable density, shallow and ill-defined to defined; interstices without microsculpture. Hind wings completely reduced. Metatibia with sexual dimorphism.

Abdomen with fine punctation, punctures on tergites VII and VIII only slightly sparser than on anterior tergites; interstices with fine, shallow microsculpture and some shine; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII sexually dimorphic.

♂: protarsomeres I–IV strongly dilated; internal face of metatibia angularly dilated approximately in the middle (Fig. 225); tergite VIII with weakly convex posterior margin (Fig. 226); sternite VII (Fig. 227) strongly transverse, weakly depressed and with very sparse unmodified setae

in posterior median portion; sternite VIII (Fig. 228) strongly modified and of distinctive shape and chaetotaxy, with shallow and extensive median impression posteriorly, middle of this impression without pubescence and semi-transparent, laterally with conspicuous clusters of numerous short and very stout black setae, posterior margin asymmetrically bisinuate, in the middle convexly projecting posteriad; aedeagus (Figs 229–230) approximately 1.1 mm long and of distinctive shape, ventral process strongly asymmetric, apically subdivided into three lamellate processes, two of them directed ventrad and one dorsad; dorsal plate broadly lamellate and distinctly sclerotized, without separate basal portion; internal sac with dark membranous structures, but without sclerotized spines.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; tergite VIII (Fig. 231) distinctly and almost triangularly produced posteriorly; sternite VIII (Fig. 232) approximately 1.0 mm long, oblong, gradually tapering posteriad, and with convex posterior margin; tergite IX anteriorly divided; tergite X narrowly separating tergite IX anteriorly and nearly reaching anterior margin of tergite IX (Fig. 233).

Comparative notes. *Lathrobium trifidum* shares the asymmetric, apically divided ventral process of the aedeagus with the preceding species of the *L. fissispinosum* group, but differs from them by the absence of a long internal spine, the basally large aedeagal capsule, and by the completely divided female tergite IX. Regarding the latter character, it is similar to *L. aquilinum*, but both species are separated by so many other characters (shape of pronotum, sexual dimorphism of tergite VIII and metatibia, shapes and chaetotaxy of the male sternites VI and VII) that a particularly close relationship seems unlikely. The sexual dimorphism of the metatibia is a unique character among the *Lathrobium* species of the Qinling Shan and the Daba Shan.

Distribution and natural history. The type locality is situated in the Daba Shan, to the south-southeast of Zhenping, at the border between Shaanxi and Chongqing (Fig. 198). The specimens were sifted from leaf litter and moss in a young mixed forest at an altitude of 1700–1800 m. Three of the specimens are teneral.

Lathrobium bifidum sp. n. (Figs 213, 234–242)

Type material. Holotype ♂: "CHINA: W-Hubei (Daba Shan), pass E of Mt. Da Shennongjia, 12 km NW Muyuping, 31°30'N, 110°21'E, 22.VII.2001, leg. M. Schülke [C01-13E] / creek valley, 1950–2050 m, mixed deciduous forest, moss, dead wood, mushrooms (sifted) [C01-13E] / Holotypus ♂ *Lathrobium bifidum* sp. n., det. V. Assing 2012" (cSch). Paratypes: 1♂: same data as holotype (cSch); 2♂: same data, but "19.VII.2001 ... [13C]" (cAss); 1♀: "China (Daba Shan) pass E Mt. Da Shennongjia, 12 km NW Muyuping 31°30'N, 110°21'E 1950 m (dry creek vall., mix. decid. forest) 16.–22.VII.2001 Wrase [13] (cSch); 5♂, 4♀: "CHINA: W-Hubei daba [sic] Shan pass E of Mt. Shennongjia 12 km / NW Muyuping 31°30'N 110°21'E 1950 m A. Smetana [C117]" (cSme, cAss); 1♀: same data, but"16.VII.2001 ... [C104]" (cSme); 1♂, 1♀: "CHINA: W-Hubei (Daba Shan), creek valley 11 km NW Muyuping, 31°30'N, 110°22'E, 1960 m, 18.VII.2001, leg. M. Schülke [C01-17] / creek valley, mixed deciduous forest (sifted) [C01-17]" (cSch, cAss); 5♂, 4♀: "CHINA: W-Hubei Daba Shan crk. valley 11 km NW Muyuping 31°30'N / 110°22'E 1960 m, 18.VII.2001 A. Smetana [C109]" (cSme, cAss); 1♂: "CHINA: W-Hubei, 2002, Dashennongjia mts., 2100–2900 m, 10.–14.6., 31.5N, 110.3E, leg. J. Turna" (NHMW).

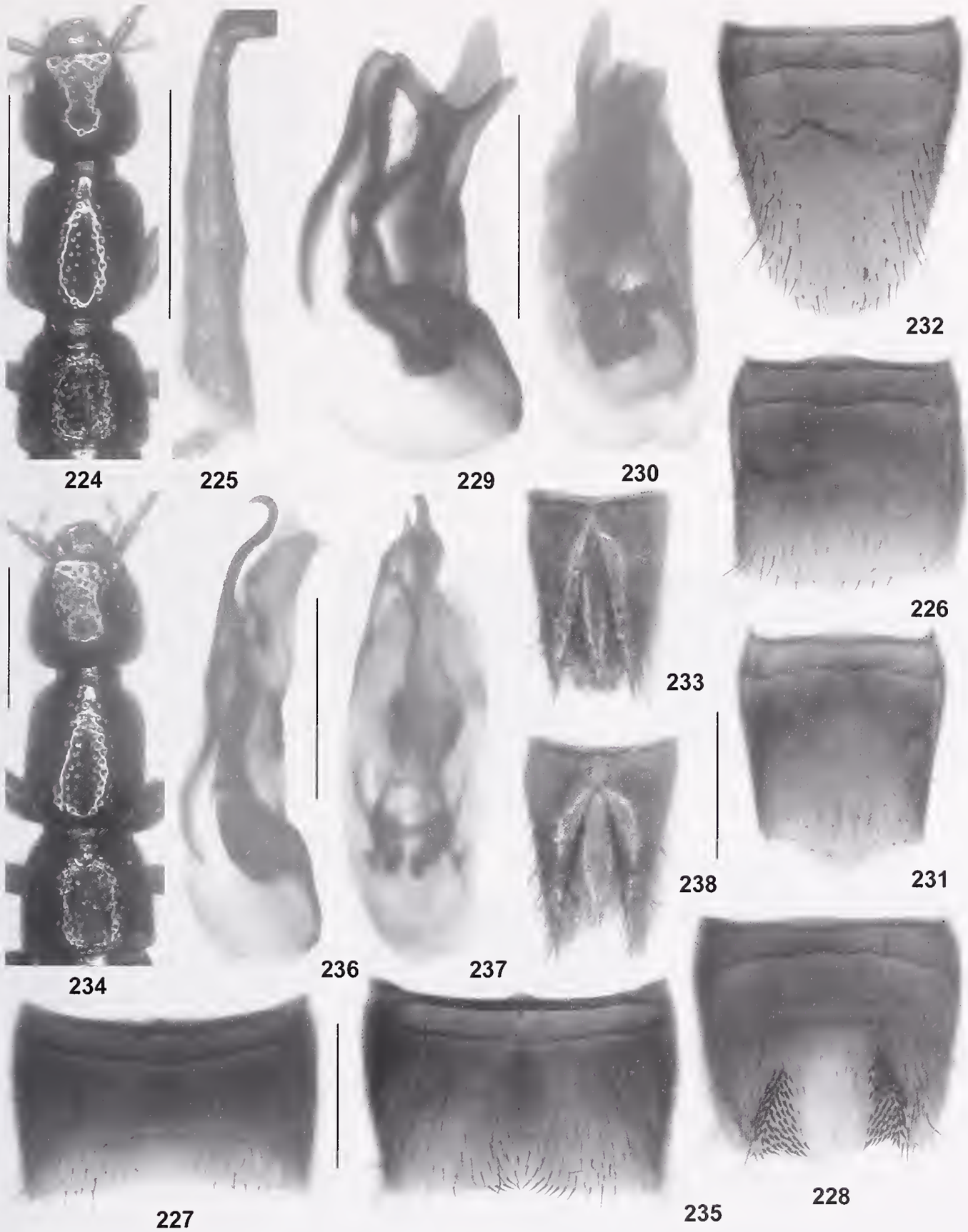
Etymology. The specific epithet (Latin, adjective: split into two parts) alludes to shape of the ventral process of the aedeagus.

Description. Size rather variable, but without sexual dimorphism; body length 6.3–7.5 mm; length of forebody 3.0–3.3 mm. Coloration: body brown to blackish-brown, elytra sometimes paler posteriorly, posterior margins of abdominal tergites narrowly dark-reddish; legs and antennae reddish.

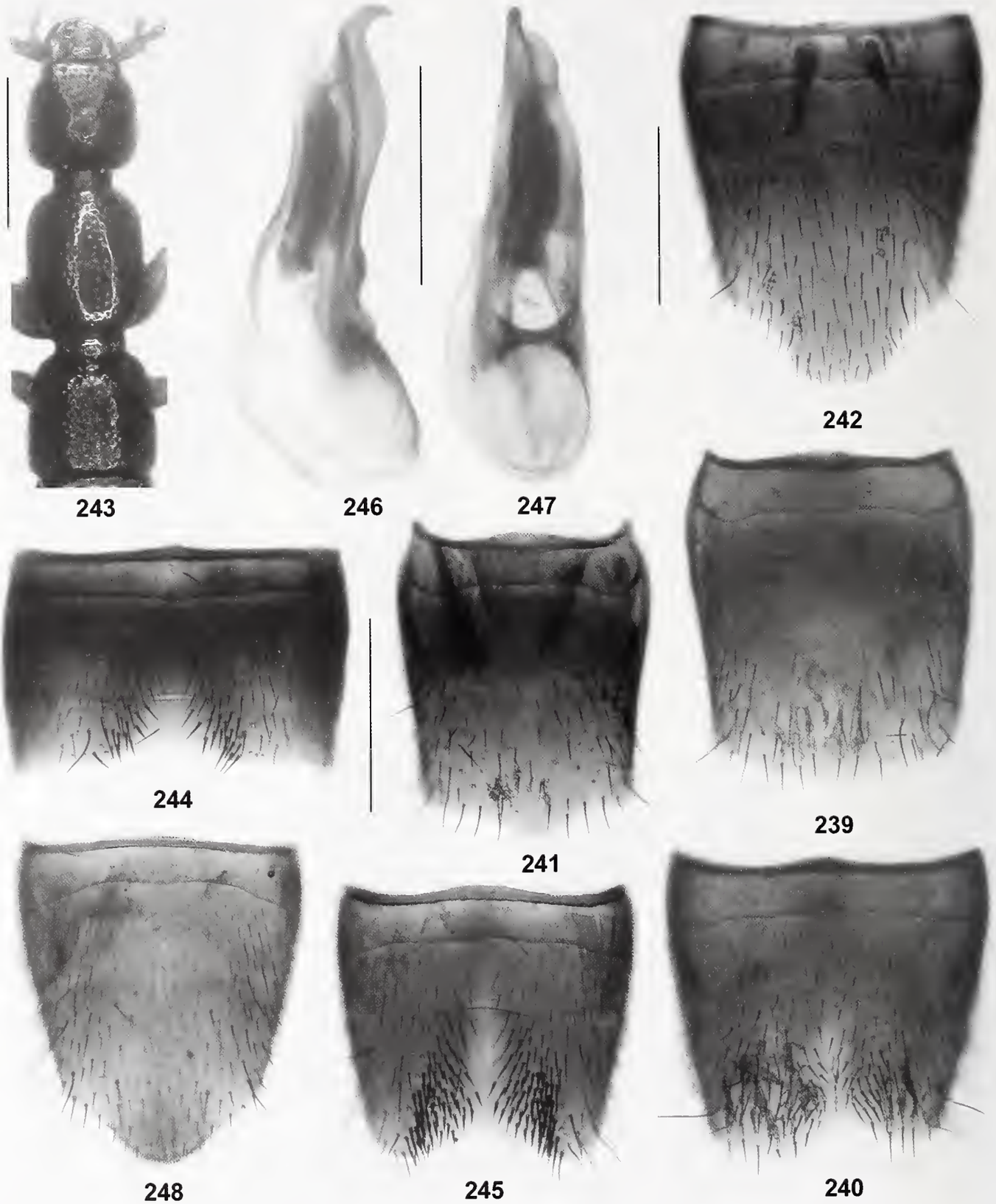
External characters (Fig. 234) as in *L. trifidum*, distinguished only by the primary and secondary sexual characters:

♂: protarsomeres I–IV strongly dilated; tergite VIII (Fig. 239) with weakly convex posterior margin; sternite VII (Fig. 235) strongly transverse, weakly depressed and with transverse row of approximately 10 weakly modified setae near the weakly concave posterior margin; sternite VIII (Fig. 240) weakly transverse and moderately asymmetric, with shallow median impression posteriorly, this impression with few modified setae on either side of the narrowly non-pubescent middle, posterior excision shallow, broad, and asymmetric; aedeagus (Figs 236–237) approximately 1.2 mm long and asymmetric; ventral process apically divided into two lamellae of different shape; dorsal plate broad in dorsal view, bisinuate in lateral view, and apically extended into conspicuous long and hook-shaped process; internal sac with dark membranous structures, but without sclerotized spines.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; metatibia unmodified; tergite VIII distinctly, triangularly produced posteriorly (Fig. 241); sternite VIII (Fig. 242) approximately 1.0 mm long, oblong, posterior margin distinctly convexly produced in the middle; tergite IX anteriorly divided by suture; tergite X almost flat in anterior half, narrowly separating tergite IX anteriorly, and nearly reaching anterior margin of tergite IX (Fig. 238).



Figs 224–238. *Lathrobium trifidum* (**224–233**) and *L. bifidum* (**234–238**). **224, 234.** Forebody. **225.** Male metatibia. **226.** Male tergite VIII. **227, 235.** Male sternite VII. **228.** Male sternite VIII. **229–230, 236–237.** Aedeagus in lateral and in ventral view. **231.** Female tergite VIII. **232.** Female sternite VIII. **233, 238.** Female tergites IX–X. Scale bars: 224, 234: 1.0 mm; 225–233, 235–238: 0.5 mm.



Figs 239–248. *Lathrobium bifidum* (**239–242**) and *L. aquilinum* (**243–248**). **239.** Male tergite VIII. **240, 245.** Male sternite VIII. **241.** Female tergite VIII. **242, 248.** Female sternite VIII. **243.** Forebody. **244.** Male sternite VII. **246–247.** Aedeagus in lateral and in ventral view. Scale bars: 243: 1.0 mm; 239–242, 244–248: 0.5 mm.

Comparative notes. Based on the primary and secondary sexual characters (aedeagus asymmetric with the ventral process divided into lamellate lobes; male sternite VII weakly modified, with or without few weakly modified setae, posterior margin weakly concave; male sternite VIII asymmetric; tergite VIII with sexual dimorphism; female tergite VIII divided anteriorly), *L. bifidum* is most closely related to the similar *L. trifidum*. It is readily distinguished from all its congeners by the distinctive shapes and chaetotaxy of the male sternites VII and VIII, and by the conspicuous morphology of the aedeagus.

Distribution and natural history. The species was found in two geographically close localities in the Daba Shan, western Hubei, to the northwest of Muyuping (Fig. 213). The specimens were sifted from leaf litter and moss in deciduous forests at altitudes of 1950–2050 m, together with *L. fissispinosum* and *L. curvispinosum*.

The *Lathrobium aquilinum* species group

***Lathrobium aquilinum* sp. n.** (Figs 213, 243–248)

Type material. Holotype ♂: "CHINA: S-Shaanxi (Daba Shan), NW pass 25 km NW Zhenping, 32°01'N, 109°19'E, 2150 m, 11.VII.2001, leg. M. Schülke [C01-09] / creek valley, young coniferous forest, moss (sifted) [C01-09] / Holotypus ♂ *Lathrobium aquilinum* sp. n., det. V. Assing 2012" (cSch). Paratypes: 1♂, 3♀: same data as holotype (cSch, cAss); 1♂, 1♀: "CHINA Shaanxi Daba Shan NW pass 25 km NW Zhenping 32°01'N / 109°19'E 2150 m 11.VII.2001 A. Smetana [C99]" (cSme, cAss).

Etymology. The specific epithet (Latin, adjective: of an eagle) alludes to shape of the apex of the ventral process of the aedeagus, which somewhat resembles a hawk's beak.

Description. Size without sexual dimorphism; body length 6.3–6.7 mm; length of forebody 2.9–3.1 mm. Coloration: body dark-brown to blackish-brown; legs and antennae reddish.

Head (Fig. 243) approximately as broad as long; punctation moderately coarse and rather sparse, even sparser in median dorsal portion; interstices on average distinctly broader than punctures, with fine, but distinct microreticulation and subdued shine. Eyes moderately small, composed of > 50 ommatidia, approximately 1/3 the length of postocular region in dorsal view, and approximately 0.35–0.40 times as long as postocular region in lateral view. Antenna approximately 1.5 mm long.

Pronotum (Fig. 243) rather broad, approximately 1.2 times as long as broad and 1.05–1.10 times as broad as head; punctation similar to that of head; midline rather narrowly impunctate; interstices without microsculpture and glossy.

Elytra (Fig. 243) short, approximately 0.55–0.60 times as long as pronotum; punctation rather dense, shallow, and weakly defined; interstices without microsculpture. Hind wings completely reduced.

Abdomen with fine punctation, punctures on tergites VII and VIII only slightly sparser than on anterior tergites; interstices with distinct microsculpture and subdued shine; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex in both sexes.

♂: protarsomeres I–IV strongly dilated; sternite VII (Fig. 244) strongly transverse, with rather extensive median impression of triangular shape posteriorly, this impression without setae in the middle, but margined by several long and stout black setae, posterior margin weakly concave in the middle; sternite VIII (Fig. 245) almost as long as broad, with extensive median impression of triangular shape, this impression with cluster of numerous stout black setae on either side of the non-pubescent middle, posterior excision very broad and shallow; aedeagus (Figs 246–247) approximately 1.1 mm long and of distinctive shape, ventral process strongly asymmetric (ventral view) and apically hooked (lateral view); dorsal plate broadly lamellate, weakly sclerotized, apically acute, without median carina, and with very short basal portion; internal sac with dark membranous structures, but without sclerotized spine.

♀: protarsomeres I–IV dilated, but distinctly less so than in male; sternite VIII (Fig. 248) approximately 0.85 mm long, oblong, and convexly produced posteriorly, posterior portion with particularly dense micropubescence; tergite IX anteriorly divided; tergite X narrowly separating tergite IX anteriorly and reaching anterior margin of tergite IX.

Comparative notes. The external and sexual characters do not suggest a closer relationship with any of the species treated above. *Lathrobium aquilinum* is distinguished from all of them particularly by the male sexual characters (shape and chaetotaxy of sternites VI and VIII; morphology of the aedeagus), as well as by the morphology of the female tergites IX and X.

Distribution and natural history. The type locality is situated in the Daba Shan, to the northwest of Zhenping (Fig. 213). The specimens were sifted from moss in a young coniferous forest at an altitude of 2150 m, together with *L. rectispinosum*.

UNIDENTIFIED AND UNNAMED SPECIES

Some probably undescribed species in the examined material were represented only by females. Since the male sexual characters are required for a reliable identification of *Lathrobium* species, these species remain unnamed.

Lathrobium sp. 1

Material examined. 2♀: "CHINA: Border Shaanxi - Sichuan [now Chongqing] (Daba Shan), pass 20 km SSE Zhenping, 1700–1800 m, 31°44'N, 109°35'E, 9.VII.2001, leg. M. Schülke [C01-07] / young dry mixed forest, field edge, small creek valley, moss (sifted) [C01-07]" (cSch, cAss).

This species is similar and evidently closely related to *L. rectispinosum*. The two females are slightly larger than the type specimens of that species.

Lathrobium sp. 2

Material examined. 1♀: "CHINA [7] - S-Gansu, mountains SE Longnan, sifted, 33°13'20"N, 105°15'10"E, 2170 m, 31.VII.2012, V. Assing" (cAss).

This species is externally similar and probably closely related to *L. biforme*, *L. lunatum*, and *L. falcatum*.

Lathrobium sp. 3

Material examined. 1♀: "CHINA: Shaanxi, Qinling Shan, 6 km E Xunyangba, 1000–1300 m, 23.V.–13.VI.2000, leg. C. Holzschuh" (NHMW).

This species is characterized by rather large size (length of forebody: 4.7 mm), blackish coloration, coarse and dense punctation of the forebody, as well as by the rather coarse and dense punctation and the very shallow, nearly obsolete microsculpture of the abdominal tergites III–VI.

Lathrobium sp. 4

Material examined. 1♀: "China, W Hubei, Shennongjia Nat. Res., 2000–2200 m, litter, 7.VI.95 S. Kurbatov" (MHNG).

The above specimen is externally similar to *L. aquilinum*, but, in view of the distribution, most likely to represent a different species.

KEY TO SPECIES

The key below includes the described species of the Qinling Shan, the Daba Shan, and adjacent mountain ranges from the mountains near Songpan in northern Sichuan in the west to the eastern parts of the Daba Shan in western Hubei in the east. Since a reliable species-level identification based on external characters is usually not possible, the key primarily relies on the male sexual characters.

1. Macropterous or wing-dimorphic species; elytra at least 0.5–0.6 times as long as pronotum. Hind wings in brachypterous specimens not completely reduced (rudiments at least as long as elytra). Posterior margin of abdominal tergite VII with or without palisade fringe. 2
– Apterous species; elytra 0.5–0.6 times as long as pronotum. Hind wings completely reduced. Posterior margin of abdominal tergite VII always without palisade fringe. 3
2. Macropterous and larger species; length of forebody > 4.0 mm. Head and pronotum blackish; elytra reddish. ♂: aedeagus as figured by Koch (1939a), with long, slender, curved, and somewhat asymmetric ventral process; internal sac without conspicuously large internal structure. Widespread in the East Palaearctic: Japan, Russian Far East, North and South Korea, northern China. ..... ***dignum* Sharp**
– Wing-dimorphic, smaller species; length of forebody approximately 2.6–3.0 mm (Figs 3–6). Pronotum reddish to reddish-brown, head mostly distinctly darker than pronotum. ♂: aedeagus with short, stout, almost straight, and in ventral view only slightly asymmetric ventral process; internal sac with conspicuously large, strongly sclerotized internal structure apically extending into a long and twisted spine (Figs 9–13); sternites VII and VIII shaped as in Figs 7–8. ♀: sternite VIII strongly oblong and with more or less strongly convex posterior margin (Fig. 15). Widespread: Gansu, Shaanxi, Sichuan, Hubei, Jiangsu (Fig. 18). ..... ***sinense* Herman**
3. Head dorsally completely without microsculpture (Fig. 163). Tarsi conspicuously short, approximately 0.6 times as long as width of pronotum. ♂: sternite VII with two distinct and large clusters of dense modified setae (Fig. 164); sternite VIII symmetric, narrowly without pubescence in the middle, and with broad and shallow posterior excision (Fig. 165); aedeagus (Figs 166–167) approximately 1.5 mm long, with symmetric ventral process, and without sclerotized spines in internal sac. ♀: sternite VIII weakly produced posteriorly, approximately as long as broad (Fig. 168); tergite IX completely divided into two

hemitergites. N-Sichuan: mountains to the northwest of Songpan (Fig. 111). ..... ***lentum* sp. n.**

– Head dorsally with microsculpture (sometimes nearly obsolete only in the syntopic *L. detruncatum*). Tarsi longer, > 0.6 times as long as width of pronotum. Sexual characters different. 4

4. ♂: ventral process of aedeagus distinctly asymmetric. 5

– ♂: ventral process of aedeagus symmetric, at most weakly asymmetric (ventral process turned slightly to the left or right in ventral view). 21

5. ♂: ventral process of aedeagus apically extending into two or three lobes. Head at least as broad as long. Species from Daba Shan (including the Micang Shan). The *L. fissispinosum* group. 6

– ♂: ventral process of aedeagus apically not bi- or trilobed, except for one species from the environs of Songpan in northern Sichuan with an oblong head and a strongly asymmetric male sternite VIII. 14

6. ♂: aedeagus with conspicuously long sclerotized spine in internal sac. 7

– ♂: aedeagus with dark membranous structures, but without sclerotized spine in internal sac. 12

7. Species with or without sexual size dimorphism distributed in the Micang Shan. Coloration of body blackish or brownish. 8

– Species without sexual size dimorphism distributed elsewhere in the Daba Shan. Coloration of body blackish. 10

8. Larger species with moderately pronounced sexual size dimorphism; length of forebody: 4.2–4.5 mm (♂), 3.7–4.3 mm (♀). Colour of body blackish. Elytra with coarse and defined punctation. ♂: sternite VII with cluster of distinctly modified setae in median impression (Fig. 191); sternite VIII with very distinctive chaetotaxy and with distinct posterior excision in asymmetric position (Fig. 192); aedeagus approximately 1.5 mm long and shaped as in Figs 193–194. ♀: tergite IX undivided anteriorly (Fig. 197); tergite X longer than tergite IX in the middle, but not reaching anterior margin of tergite IX; sternite VIII as in Fig. 196. Distribution: Fig. 169.
..... ***longispinosum* sp. n.**

– Smaller species without apparent sexual size dimorphism; length of forebody < 3.5 mm. Colour of body brownish. Elytra with finer and less defined punctation. ♂: sternite VII without cluster of distinctly modified setae in median impression; sternite VIII without posterior excision, posterior margin either truncate or convex; with distinct posterior excision in asymmetric position; aedeagus smaller, approximately 1.5 mm long, and of different shape. ♀: tergite IX completely divided anteriorly; tergite X reaching anterior margin of tergite IX; sternite VIII of different shape. 9

9. ♂: sternite VIII with convex posterior margin, approximately as long as broad (Fig. 208); ventral process of aedeagus with less acute apex in lateral view and with tooth-like process best visible in ventral view (Figs 209–210). ♀: female sternite VIII more sharply pointed posteriorly (Fig. 211). Distribution: Fig. 198.
..... ***crassispinosum* sp. n.**

– ♂: sternite VIII with truncate posterior margin, transverse (Fig. 201); ventral process of aedeagus with more acute apex in lateral view and without tooth-like process (Figs 202–203). ♀: female sternite VIII convexly produced posteriorly (Fig. 204). Distribution: Fig. 169. ..... ***spinigerum* sp. n.**

10. Larger species; length of forebody: 4.2–4.7 mm. ♂: sternites VII and VIII as in Figs 184–185; aedeagus larger, 1.8–1.9 mm long, shaped as in Fig. 186 and with a long curved internal spine. ♀: anterior median portion of tergite IX anteriorly shorter and with median suture (Fig. 189); sternite VIII as in Fig. 188. Western Hubei (Fig. 198). ..... ***curvispinosum* sp. n.**

– Smaller species; length of forebody 3.2–3.9 mm. ♂: shapes and chaetotaxy of sternites VII and VIII different; aedeagus smaller, 1.4–1.5 mm long and with a long internal spine of different shape. ♀: anterior median portion of tergite IX longer and without median suture; sternite VIII of different shape. 11

11. ♂: sternite VII with more strongly modified setae (Fig. 172); sternite VIII oblong, in the middle narrowly without modified setae posteriorly (Fig. 173); aedeagus shaped as in Figs 174–175, ventral process broad and apically convex in ventral view; internal spine apically bifid. ♀: sternite VIII strongly oblong and more strongly produced posteriorly (Fig. 176); anterior median portion of tergite IX shorter. Western Hubei (Fig. 169). ..... ***fissispinosum* sp. n.**

– ♂: sternite VII with less distinctly modified setae (Fig. 178); sternite VIII approximately as long as broad, median impression with one undivided cluster of modified setae (Fig. 179); aedeagus shaped as in Figs 180–181, ventral process broad and obliquely acute in ventral view; internal spine not bifid. ♀: sternite VIII less oblong and with broadly convex posterior margin (Fig. 182); median portion of tergite IX anteriorly shorter. Shaanxi (Fig. 169).
..... ***rectispinosum* sp. n.**

12. Larger species; length of forebody: 3.6–4.1 mm. ♂: sternite VIII symmetric (Fig. 217); aedeagus (Figs 218–221) approximately 1.6 mm long and slender, apical lobes of ventral process of very unequal length, dorsal lobe very long and with finely serrate margins ventrally, ventral lobe much shorter and shaped like a scraper; basal portion of aedeagus small. ♀: anterior median portion of tergite IX distinctly shorter than tergite X, but anteriorly undivided, posterior processes long and slender (Fig. 223); sternite VIII

as in Fig. 222. Shaanxi/Sichuan: Micang Shan (Fig. 213). ..... ***serrilobatum* sp. n.**

– Smaller species; length of forebody 2.9–3.4 mm. ♂: sternites VIII at least weakly asymmetric; aedeagus more compact and shorter, 1.1–1.2 mm long; ventral process with shorter, non-serrate apical lobes of different shapes; basal portion of aedeagus not distinctly separated from the remainder of the aedeagal capsule and not conspicuously small. ♀: tergite IX completely divided. Species from more eastern parts of the Daba Shan. 13

13. ♂: metatibia modified, angularly dilated approximately in the middle (Fig. 225); sternite VIII in posterior half with extensive semitransparent median portion without setae, on either side of this portion with cluster of strongly modified short and stout black setae, posterior margin convex in the middle (Fig. 228); aedeagus (Figs 229–230) with ventral process apically subdivided into three lobes of characteristic shape; dorsal plate apically not extended into a long hooked spine. ♀: sternite VIII moderately produced posteriorly, with strongly convex posterior margin (Fig. 234). Shaanxi/Chongqing (Fig. 198). ..... ***trifidum* sp. n.**

– ♂: metatibia unmodified; sternite VIII (Fig. 240) in posterior half without semitransparent portion, on either side of the narrowly non-pubescent middle with a cluster of moderately modified setae, posterior margin with excision in asymmetric position; aedeagus (Figs 236–237) with ventral process apically subdivided into two lobes of characteristic shape; dorsal plate apically extended into a conspicuous long and hook-shaped spine. ♀: sternite VIII with strongly produced posterior margin, middle of this projection almost truncate (Fig. 242). Western Hubei (Fig. 213). ..... ***bifidum* sp. n.**

14. Small species, length of forebody 2.5–2.8 mm. Head at least as broad as long (Fig. 72). Abdomen with relatively sparse punctation. ♂: aedeagus slender, with long and slender, distinctly asymmetric ventral process, without spine in internal sac (Figs 75–76); sternite VII unmodified (Fig. 73); sternite VIII very weakly modified, symmetric, weakly oblong, with convex posterior margin without median excision, and with unmodified pubescence (Fig. 74). ♀: anterior median portion of tergite IX undivided and short, distinctly shorter than tergite X; sternite VIII oblong, posterior margin convexly produced in the middle (Fig. 78). Qinling Shan (Fig. 70). ..... ***effeminatum* sp. n.**

– Similarly small or larger species; if similarly small, with oblong head and dense punctation of the abdomen. ♂: aedeagus with short spine in internal sac; sternite VIII asymmetric, with (asymmetric) posterior excision, and with modified pubescence; sternite VII modified. ♀: tergite IX broadly undivided anteriorly and with short posterior processes. The *L. gansuense* group. 15

15. Smaller species; length of forebody 2.5–2.8 mm. Legs of pale coloration (usually dark-yellowish). Qinling Shan (Gansu and Shaanxi provinces). ♂: aedeagus smaller, < 1.1 mm long, with shorter and relatively broader ventral process, and with apically more or less wrench-shaped spine in internal sac. 16

– Larger species; length of forebody 2.8–3.5 mm. Legs mostly of darker coloration. ♂: aedeagus distinctly larger, at least 1.2 mm long, with longer and more slender ventral process, and with mostly forked spine in internal sac. 18

16. ♂: sternite VIII strongly asymmetric and with deeper posterior excision (Fig. 29); aedeagus with longer sclerotized spine in internal sac and ventral process of characteristic shape (Figs 30–31); sternite VII as in Fig. 28. ♀: unknown. Taibai Shan (Shaanxi) (Fig. 42). ..... ***declive* sp. n.**

– ♂: sternite VIII less strongly asymmetric, posterior margin with broad and asymmetric posterior excision; sclerotized spine of aedeagus shorter; ventral process of different shape. 17

17. ♂: aedeagus slightly larger, approximately 1.0 mm long, and with apically convex dorsal plate in dorsal view (Figs 35–37); sternites VII and VIII as in Figs 33–34. ♀: sternite VIII as in Fig. 38. Taibai Shan and environs (Shaanxi) (Fig. 42). ..... ***shaanxiense* Chen et al.**

– ♂: aedeagus slightly smaller, approximately 0.9 mm long, and with apically spine-like dorsal plate both in dorsal and in lateral view (Figs 22–23); sternites VII and VIII as in Figs 20–21. ♀: sternite VIII as in Fig. 25. Environs of Lazikou pass, western Qinling Shan (Gansu) (Fig. 42). ..... ***gansuense* sp. n.**

18. Coloration paler: forebody reddish; abdomen brown; legs pale-reddish. ♂: sternite VIII and aedeagus as in Figs 39–41. Shaanxi: Qinling Shan: Taibai Shan. ..... ***heteromorphum* Chen et al.**

– Coloration darker: body blackish-brown to blackish; legs brown to dark-brown. ♂: sternite VIII of different shape and chaetotaxy; aedeagus of different morphology. Mountains in northern Sichuan (environs of Songpan). 19

19. Head with shallow but distinct microsculpture. ♂: sternite VIII less strongly modified, posterior excision broad and asymmetric (Fig. 45); aedeagus longer, 1.4–1.5 mm long, with lamellate, bilobed, apically not acute ventral process (Figs 46–50); sternite VII as in Fig. 44. ♀: sternite VIII more narrowly produced posteriorly (Figs 51–52). Distribution: Fig. 42. ..... ***biapicale* sp. n.**

– Head with often indistinct and almost obsolete microreticulation. ♂: sternite VIII more strongly mod-

ified, posterior excision deep, asymmetric and bisinuate; aedeagus shorter, approximately 1.2 mm long, with apically acute and non-bilobed ventral process. ♀: sternite VIII less strongly and more broadly produced posteriorly. 20

20. ♂: sternite VII more strongly asymmetric, posterior margin distinctly concave in the middle (Fig. 64); sternite VIII as in Fig. 65; aedeagus with apically more slender (ventral view) and narrowly truncate (lateral view) ventral process (Figs 66–67). ♀: sternite VIII only indistinctly oblong, posterior margin weakly concave in the middle (Fig. 68). Distribution: Fig. 18. ..... ***brevisternale* sp. n.**
– ♂: sternite VII less strongly asymmetric, posterior margin weakly concave in the middle (Fig. 56); sternite VIII as in Fig. 57; aedeagus with apically broader (ventral view) and acute (lateral view) ventral process (Figs 58–59). ♀: sternite VIII distinctly oblong, posterior margin convexly produced in the middle (Fig. 61). Distribution: Fig. 18. ..... ***detruncatum* sp. n.**
21. Pronotum broad, approximately 1.2 times as long as broad (Fig. 243). Rather small species; length of forebody: 2.9–3.1 mm. Coloration of body brown. ♂: aedeagus with relatively short and bisinuate (lateral view) ventral process (Figs 246–247); sternites VII and VIII distinctly modified (Figs 244–245). ♀: tergite IX completely divided in the middle; tergite X reaching anterior margin of tergite IX; sternite VIII shaped as in Fig. 248. Western Hubei: Daba Shan (Fig. 213). ..... ***aquilinum* sp. n.**
– Pronotum more slender, at least approximately 1.25 times as long as broad. Coloration of body often darker. ♂: aedeagus with relatively longer and more or less curved (lateral view) ventral process; sternites VII and VIII usually more weakly modified. ♀: anterior median portion of tergite IX undivided in the middle, at least nearly as long as tergite X; tergite X not reaching anterior margin of tergite IX. The *L. varisternale* species group. Unknown from western Hubei. 22
22. ♂: ventral process of aedeagus apically strongly hooked. Gansu. 23
– ♂: ventral process of aedeagus not hooked apically. 24
23. Larger species with pronounced sexual size dimorphism; length of forebody 3.6–4.0 mm (♂), 3.2–3.5 mm (♀). ♂: aedeagus larger, 1.4–1.5 mm long and more strongly sclerotized, shaped as in Figs 90–91; sternite VIII with distinct and deep posterior excision, and with distinctly modified pubescence (Fig. 89); sternite VII as in Fig. 88. ♀: sternite VIII as in Fig. 92; apex of abdomen with conspicuous dark amorphous structure in ventral view (Fig. 93). Western Qinling Shan (Fig. 70). ..... ***biforme* sp. n.**
– Smaller species without sexual size dimorphism; length of forebody 3.0–3.5 mm. ♂: ventral process smaller, approximately 1.3 mm long, and less strongly sclerotized (Fig. 159); sternite VIII weakly modified, with very small posterior excision and with weakly modified pubescence (Fig. 160); sternite VII as in Fig. 158. ♀: sternite VIII as in Fig. 161; apex of abdomen without conspicuous dark amorphous structure in ventral view. Mountains to the southeast of Longnan (Fig. 111). ..... ***inflexum* sp. n.**
24. Body usually blackish, rarely dark-brown. ♂: ventral process of aedeagus more or less sickle-shaped (exception: *L. varisternale*). ♀: abdominal apex ventrally with more or less strongly sclerotized amorphous sclerite. Qinling Shan: Gansu and SW-Shaanxi (west of 107°30'E longitude). 25
– Coloration of body brown to dark-brown. ♂: ventral process weakly curved and not distinctly compressed laterally (not sickle-shaped) or conspicuously straight. ♀: abdominal apex ventrally without distinctly sclerotized amorphous sclerite. Species of more eastern distribution (Shaanxi), absent from Gansu. 28
25. ♂: ventral process of aedeagus longer, more slender, and not distinctly sickle-shaped (Fig. 84); sternites VII and VIII as in Figs 80–83. ♀: sternite VIII as in Fig. 86. Qinling Shan: Shaanxi (Fig. 70). ..... ***varisternale* sp. n.**
– ♂: ventral process of aedeagus shorter, less slender in lateral view, and somewhat sickle-shaped. Species distributed in Gansu. 26
26. ♂: sternite VII with indistinctly concave posterior margin (Fig. 106); sternite VIII with ill-defined clusters of not very dense black setae on either side of the narrowly non-pubescent middle (Fig. 107); aedeagus as in Fig. 108. ♀: sternite VIII as in Fig. 109. Min Shan (Fig. 111). ..... ***minicum* sp. n.**
– ♂: sternite VII with distinctly concave posterior margin; sternite VIII with more defined clusters of denser black setae on either side of the middle; aedeagus with ventral process of different shape. Western Qinling Shan. 27
27. ♂: ventral process of aedeagus longer and more strongly curved in lateral view (Fig. 97); sternites VII and VIII as in Figs 95–96. ♀: sternite VIII almost acutely produced posteriorly (Fig. 98). Distribution: Fig. 70. ..... ***lunatum* sp. n.**
– ♂: ventral process of aedeagus shorter and less strongly curved in lateral view (Fig. 103); sternites VII and VIII as in Figs 101–102. ♀: unknown. Distribution: Fig. 111. ..... ***falcatum* sp. n.**
28. ♂: apical half of ventral process of aedeagus conspicuously straight, slender, and acute in lateral view; ster-

nite VIII with pubescence in the middle and with rather deep posterior excision. ♀: unknown. Qinling Shan: environs of Huoditang.
..... ***mawenliae*** **Peng & Li**

– ♂: ventral process of aedeagus curved in lateral view; sternite VIII narrowly without pubescence at least in posterior half and with smaller posterior excision. 29

29. ♂: sternite VIII as in Fig. 150, narrowly non-pubescent only in posterior half; postero-median impression of sternite VII without setae in the middle (Fig. 149); aedeagus shaped as in Figs 151–154. ♀: tergite VIII with weakly concave posterior margin; tergite X roof-shaped, i.e., distinctly angled in cross-section, distinctly shorter than tergite IX in the middle (Fig. 156); sternite VIII shaped as in Fig. 155. Tergite VIII with sexual dimorphism. Distribution: Fig. 169.
..... ***tectiforme*** **sp. n.**

– ♂: sternites VII and VIII of different chaetotaxy; aedeagus with ventral process of slightly different shape, dorsal plate often with less pronounced basal portion. ♀: posterior margin of tergite VIII truncate to weakly convex; tergite X not roof-shaped in cross-section, strongly convex at most, and in most species relatively longer. 30

30. Body of reddish to pale reddish-brown coloration. ♂: sternites VII and VIII narrowly non-pubescent in the middle (Figs 120–121); sternite VIII with almost obsolete posterior excision and with rather defined cluster of black setae on either side of middle (Fig. 121); aedeagus relatively small, approximately 1.0 mm long, apical and basal portion of dorsal plate not forming a distinct angle in lateral view (Fig. 122). ♀: tergite X approximately as long as tergite IX in the middle, or slightly shorter; sternite VIII moderately produced posteriorly (Fig. 124). Distribution: Fig. 42.
..... ***sociabile*** **sp. n.**

– Body in mature specimens of more or less dark-brown coloration. ♂: sternites VII and VIII of different chaetotaxy; aedeagus with ventral process and dorsal plate of different shape. ♀: sternite VIII often more produced posteriorly. 31

31. ♂: aedeagus (Figs 129–132) larger, 1.4–1.5 mm long, with long and slender ventral process; basal portion of dorsal plate distinctly sclerotized, relatively long, and forming a distinct angle with apical portion in lateral view; sternites VII and VIII as in Figs 126–128. ♀: tergite X shorter than tergite IX in the middle; sternite VIII approximately 1.2 mm long, strongly and narrowly produced posteriorly (Figs 133–135). Distribution: Fig. 111. ..... ***brevitergale*** **sp. n.**

– ♂: aedeagus smaller, approximately 1.3 mm long at most and with less slender ventral process in lateral view; dorsal plate mostly relatively shorter, less strongly sclerotized and forming a more obtuse angle, or no angle at all, with apical portion in lateral view; sternites VII and VIII of slightly different chaetotaxy. ♀: tergite X at least approximately as long as tergite IX in the middle; sternite VIII less strongly and narrowly produced posteriorly. 32

32. ♂: aedeagus with ventral process basally stouter; dorsal plate without distinct basal portion (Figs 115–117); sternites VII and VIII as in Figs 113–114. ♀: tergite X slightly longer than tergite IX in the middle; sternite VIII approximately 1.0 mm long, shaped as in Fig. 118. Hua Shan (Fig. 111). ..... ***huaense*** **sp. n.**

– ♂: aedeagus with ventral process more slender basally; dorsal plate with distinct basal portion. ♀: tergite X approximately as long as tergite IX in the middle. Distribution more western. 33

33. ♂: ventral process slightly shorter than basal portion of aedeagus, basal portion of dorsal plate more strongly sclerotized and forming an obtuse angle with apical portion (Fig. 139); posterior impression of sternite VII without setae in the middle (Fig. 137); sternite VIII with more defined cluster of black setae on either side of middle (Fig. 138). ♀: sternite VIII as in Fig. 141. Distribution: Fig. 70.
..... ***brevilobatum*** **sp. n.**

– ♂: ventral process approximately as long as basal portion of aedeagus, basal portion of dorsal plate weakly sclerotized and not forming an angle with apical portion (Fig. 145); posterior impression of sternite VII with setae in the middle (Fig. 143); sternite VIII with less defined cluster of black setae on either side of middle (Fig. 144). ♀: sternite VIII as in Fig. 147. Distribution: Fig. 42. ..... ***concameratum*** **sp. n.**

AN ADDITIONAL RECORD OF *LATHROBIUM* FROM CHINA

Lathrobium wuesthoffi Koch, 1939

Material examined. China: 14 exs., Beijing, Yan Shan, Dongling Mts., Xiaolongmen, 1400 m, 15.–16.VI.2001, leg. Hlaváč & Cooter (cAss, cSch); 3 exs., Hebei/Nei Mongol, pass Chengde-Chifeng, "41.6N 118.2E", 30.–31.V.2002, leg. Turna (NHMW, cAss). **Russia:** 2 exs., Ussuri mountain range, Nikolsk Ussuriysk, leg. Mandl (NHMW, cAss); 1 ex., Birskoye, 26.VI.1958 (NHMW); 1 ex., Ussuri, Maritime Territory, Dove Hill near Hasan, 5.–8.VII.1990, leg. Kasantsev (NHMB).

Comment. The above specimens from Beijing and Hebei/Nei Mongol represent the first records from China. The aedeagus of one of the males from Beijing is teratologically malformed. For illustrations of the aedeagus see Koch (1939b).

CHECKLIST OF THE *LATHROBIUM* SPECIES OF MAINLAND CHINA AND TAIWAN

Including the newly described species, *Lathrobium* is now represented in mainland China by 89 and in Taiwan by 13 described species.

Five species, *L. fulvipenne* Gravenhorst, 1806, *L. kobense* Sharp, 1874, *L. lineatocolle* Scriba, 1859, *L. monilicorne* Sharp, 1889, and *L. pollens* Sharp, 1889, are excluded from the *Lathrobium* fauna of China and omitted from the checklist. Previous records of these species from Chinese territory are most likely based on misidentifications and confusion with externally similar species, e.g., *L. fulvipenne* and *L. lineatocolle* with *L. wuesthoffi* and/or *L. dignum*. *Lathrobium kobense*, *L. monilicorne*, and *L. pollens* were all described from Japan, and their records from China are based neither on a revision of types nor on a study of the male sexual characters. Moreover, *Lathrobium pollens* is a micropterous and probably locally endemic species.

Lathrobium sinense was recently doubtfully recorded also from Yunnan (Hua 2002, Peng et al. 2012a). However, since the type material of *L. sinense* had not been revised, it seems most unlikely that the material was identified correctly. At present, the species has reliably been recorded only from Gansu, Shaanxi, Sichuan, Hubei, and Jiangsu.

Table 1. Checklist of the *Lathrobium* species of mainland China and Taiwan.

Species	Distribution in mainland China and Taiwan
acutissimum Peng, Li & Zhao, 2012	Sichuan: Jiajin Shan
ailaoshanense Watanabe & Xiao, 1997	Yunnan: Ailao Shan
alesi Assing, 2010	Taiwan: Hsueh Shan
alishanum Assing, 2010	Taiwan: Alishan
anmaicum Assing, 2010	Taiwan: Anmashan
aokii Watanabe & Xiao, 2000	Yunnan: Diancang Shan
aquilinum **sp. n.**	Shaanxi: Daba Shan
baihualingense Watanabe & Xiao, 2000	Yunnan: Gaoligong Shan
baishanzuense Peng & Li, 2012	Zhejiang: Baishanzu
aizuorum Watanabe & Xiao, 2000	Yunnan: Diancang Shan
biapicale **sp. n.**	Sichuan: Songpan env.
bifidum **sp. n.**	Hubei: Daba Shan
biforme **sp. n.**	Gansu: Qinling Shan
brevilobatum **sp. n.**	Shaanxi: Qinling Shan
brevisternale **sp. n.**	Sichuan: Min Shan
brevitergale **sp. n.**	Shaanxi: Qinling Shan
concameratum **sp. n.**	Shaanxi: Qinling Shan
cooteri Watanabe, 1999	Zhejiang: Linglong Shan
crassispinosum **sp. n.**	Shaanxi/Sichuan: Micang Shan
curvispinosum **sp. n.**	Hubei: Daba Shan
cylindricum Bernhauer, 1938	Jiangsu: Chinkiang
dabeiense Watanabe & Xiao, 1997	Yunnan: Gaoligong Shan
daliense Watanabe & Xiao, 1994	Yunnan: Diancang Shan
daocongchaoi Peng & Li, 2012	Fujian: Wuyi Shan
dayaoshanense Peng & Li, 2012	Guangxi: Dayaoshan
declive **sp. n.**	Shaanxi: Qinling Shan: Taibai Shan
detruncatum **sp. n.**	Sichuan: Songpan env.
dignum Sharp, 1874	Hubei, Jiangsu, Liaoning, Gansu?, Shaanxi?
effeminatum **sp. n.**	Shaanxi: Qinling Shan
extraculum Assing, 2010	Taiwan: Peitawushan
falcatum **sp. n.**	Gansu: Qinling Shan
fissispinosum **sp. n.**	Hubei: Daba Shan
follitum Assing, 2010	Taiwan: Peitawushan
fujianense Peng & Li, 2012	Fujian: Junzifeng Shan
gansuense **sp. n.**	Gansu: Qinling Shan
guizhouense Chen, Li & Zhao, 2005	Guizhou: Fanjing Shan
hailuogouense Peng, Li & Zhao, 2012	Sichuan: Gongga Shan
heteromorphum Chen, Li & Zhao, 2005	Shaanxi: Qinling Shan
houhuanicum Assing, 2010	Taiwan: Houhuanshan
huaense **sp. n.**	Shaanxi: Qinling Shan: Hua Shan
hunanense Watanabe, 2011	Hunan: Zhangjiacao
imadatei Watanabe, 1992	Zhejiang: Wuyanling
immanissimum Peng & Li, 2012	Zhejiang: Baishanzu

Table 1. Checklist of the *Lathrobium* species of mainland China and Taiwan (continued).

Species	Distribution in mainland China and Taiwan
inflexum **sp. n.**	Gansu: mountains SE Longnan
involutum Assing, 2010	Taiwan: Hseuhshan
ishiianum Watanabe & Xiao, 2000	Yunnan: Gaoligong Shan
itohi Watanabe & Xiao, 2000	Yunnan: Gaoligong Shan
jingyuetanicum Li & Chen, 1990	Jilin: Jingyuetan
jiulongshanense Peng & Li, 2012	Zhejiang: Jiulong Shan
jizushanense Watanabe & Xiao, 1997	Yunnan: Jizu Shan
kishimotoi Watanabe, 2011	Hunan: Zhangjiacao
labahense Peng, Li & Zhao, 2012	Sichuan: Labahe
lentum **sp. n.**	Sichuan: Songpan env.
lijiangense Watanabe & Xiao, 1997	Yunnan: Yulongxue Shan
lingae Peng, Li & Zhao, 2012	Zhejiang: Longwang Shan
lobrathiforme Assing, 2012	Yunnan: Gaoligong Shan
lobrathioides Assing, 2012	Chongqing: Jinfo Shan
longispinosum **sp. n.**	Shaanxi/Sichuan: Micang Shan
longwangshanense Peng, Li & Zhao, 2012	Zhejiang: Longwang Shan
lunatum **sp. n.**	Gansu: Qinling Shan
maoershanense Peng & Li, 2012	Guangxi: Maoer Shan
mawenliae Peng & Li, 2013	Shaanxi: Qinling Shan
miaoershanum Watanabe, 2011	Guangxi: Maoer Shan
minicum **sp. n.**	Gansu: Min Shan
naxii Watanabe & Xiao, 1996	Yunnan: Yulongxue Shan
nenkaoicum Assing, 2010	Taiwan: Nenkaoshan
obstipum Peng & Li, 2012	Zhejiang: Baishanzu
pilosum Peng & Li, 2012	Zhejiang: Baishanzu
proprium Peng & Li, 2012	Guangxi: Maoer Shan
rectispinosum **sp. n.**	Shaanxi: Daba Shan
rougemonti Watanabe, 1999	Zhejiang: Tianmu Shan
semistriatum Scheerpeltz, 1962	Shandong: Tai Shan
serrilobatum **sp. n.**	Shaanxi/Sichuan: Micang Shan
shaanxiense Chen, Li & Zhao, 2005	Shaanxi: Qinling Shan
shaolaiense Watanabe, 1998	Taiwan: Ta-hsüeh Shan
shengtangshanense Peng & Li, 2012	Guangxi: Shengtang Shan
sheni Peng & Li, 2012	Zhejiang: Jiulong Shan
shuheii Watanabe & Xiao, 2000	Yunnan: Gaoligong Shan
sinense Herman, 2003	Gansu, Shaanxi, Sichuan, Hubei, Jiangsu
= *chinense* Bernhauer, 1938	
sociabile **sp. n.**	Shaanxi: Qinling Shan
spinigerum **sp. n.**	Shaanxi: Micang Shan
tamurai Watanabe, 1992	Zhejiang: Wuyanling
tangi Peng & Li, 2012	Zhejiang: Baishanzu
tarokoense Assing, 2010	Taiwan: Taroko N. R.
tectiforme **sp. n.**	Shaanxi: Qinling Shan
tianmushanense Watanabe, 1999	Zhejiang: Tianmu Shan, Longwang Shan
trifidum **sp. n.**	Shaanxi/Chongqing: Daba Shan
tsuifengense Watanabe, 2005	Taiwan: Tsuifeng
uncum Peng, Li & Zhao, 2012	Zhejiang: Longwang Shan
utriculatum Assing, 2010	Taiwan: Peinantashan
varisternale **sp. n.**	Shaanxi: Qinling Shan
watanabei Schülke, 2002	Sichuan: Daxue Shan
wuesthoffi Koch, 1939	Beijing; Hebei/Nei Mongol
xiei Watanabe & Xiao, 2000	Yunnan: Gaoligong Shan
yasutoshii Watanabe, 2005	Taiwan: Lishan
yinae Watanabe & Xiao, 1997	Yunnan: Yulongxue Shan
yulongense Peng & Li, 2012	Yunnan: Yulongxue Shan
yunnanum Watanabe & Xiao, 1994	Yunnan: Diancang Shan: Laohu Shan
zhangdinghengi Peng, Li & Zhao, 2012	Guangxi: Huaping Nature Reserve
zhangi Watanabe & Xiao, 1997	Yunnan: Jizu Shan
zhaotiexiongi Peng, Li & Zhao, 2012	Zhejiang: Jiulong Shan, Majian
zhujianqingi Peng & Li, 2012	Guangxi: Maoer Shan

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