

New species of *Latridius* (Coleoptera: Latridiidae) from Baltic amber

Andris Bukejs, Alexander G. Kirejtshuk, Wolfgang H. Rucker

Bukejs A., Kirejtshuk A.G., Rucker W.H. 2011. New species of *Latridius* (Coleoptera: Latridiidae) from Baltic amber. *Baltic J. Coleopterol.*, 11 (2): 203 - 207.

Latridius alexeevi sp. nov. (Coleoptera: Latridiidae) from Baltic amber is described. A review on distribution of the family in time and some evolutionary comments are given.

Key words: Coleoptera, Latridiidae, *Latridius alexeevi*, new species, Baltic amber.

Andris Bukejs. Institute of Systematic Biology, Daugavpils University, Vienības 13, Daugavpils, LV-5401, Latvia. E-mail: carabidae@inbox.lv

Alexander G. Kirejtshuk. Zoological Institute of Russian Academy of Sciences, 1 Universitetskaja Emb., St. Petersburg, 199034, Russia; Muséum National d'Histoire Naturelle, Entomologie, 45 Rue Buffon, F- 75005 Paris, France. E-mails: kirejtshuk@gmail.com, agk@zin.ru.

Wolfgang H. Rucker. Von-Ebner-Eschenbach-Str. 12, D-56567 Neuwied, Germany. E-mail: Coleoptera@Latridiidae.de

INTRODUCTION

The family Latridiidae Erichson, 1842 represent a comparatively small and not very diverse group with more or less uniform bionomy of its members. It consists of three subfamilies: palaeoendemic Tetrameropsinae Kirejtshuk et Azar, 2008 and two others, Latridiidae sensu stricto and Corticariinae Curtis, 1829, known in both extant and extinct faunas. The genus *Latridiites* Heer, 1865 from Liassic of Schambelen (Lower Triassic, Switzerland) was proposed as a member of this family, however this genus does not represent the infraorder Cucujiformia at all and scarcely belongs to the suborder Polyphaga. The oldest true members of Corticariinae (*Succinimontia* Zherichin, 1977) have been re-

corded from Upper Cretaceous Taimyr amber (Santonian; Yantardakh, Taymyr National District, North Siberia), while the oldest specimen of Latridiinae was described from Lebanese amber of Lower Cretaceous (*Archelatritus* Kirejtshuk et Azar in Kirejtshuk et al. 2009: Upper Barremian to Lowermost Aptian). Besides, Rasnitsyn & Ross (2000) mentioned one representative of the family from Cretaceous Burmese amber [Lower Cretaceous, Albian (Cruickshank & Ko 2003) or Upper Cretaceous, Cenomanian (Martínez-Declós et al. 2004)]. The most records of fossil Latridiidae came from the Cainozoic outcrops, mostly from Baltic amber, although the most indications contain not more than a generic attribution without any descriptions (Klebs 1910; Spahr 1981; Hieke & Pietrzeniuk 1984; Borowiec 1985; Kubisz 2000;

etc.). The detailed overlook on representation of the family in the fossil record can be taken from the catalogue by Ponomarenko & Kirejtshuk (2011).

Traditionally the Baltic amber strata were classified in the Upper Eocene or Lower Oligocene (approximately 38 mln years), although it is thought this amber was re-worked to the present sediments. The recent studies revealed that the formation of the “blue earth” containing this amber falls in the Middle Eocene and secondary deposits of this amber could be estimated at least as 50 mln years old (Ritzkowski 1997; Weitschat & Wichard 2010; etc.).

SYSTEMATIC PART

Latridiidae Erichson, 1842

Latridiinae Erichson, 1842

Latridius Herbst, 1793

Latridius alexeevi sp. nov.

Material examined

Holotype: Nr. 001, sex unknown; Baltic amber, Upper Eocene; Yantarny Village, Kaliningrad Region, Russia; deposited in the collection of Institute of Systematic Biology, Daugavpils University, Latvia. The complete specimen in a small and thin oval amber piece (with length about 17.5 mm and width 12.0 mm). The mouthparts, partly pronotum and ventral side of specimen are obscured by a “milky” cover.

Differential diagnosis

L. alexeevi sp. nov. (Figs 1-2) is a member of the *Latridius minutus* group including *L. minutus* (Linnaeus, 1767), *L. porcatius* Herbst, 1793 and *L. assimilis* Mannerheim, 1844 (Rücker 2006). The new species differs from recent *Latridius* species in clearly larger punctures on elytra, shape of pronotum, more rounded posterior angles of pronotum and greater radius of halo behind the mesocoxa (Figs 2-6). The temples of the recent species of the mentioned group are much shorter and acute-angled posteriorly, pronotum trapezoidal, and the punctures on elytra in apical

part are clearly finer than those in *L. alexeevi* sp. nov. The 1st row of elytra of the new species has 23–25 punctures, while that of *L. assimilis* Mannerheim, 1844 has 34–38 punctures, that of *L. minutus* (Linnaeus, 1767) 34–36 punctures and that of *L. porcatius* Herbst, 1793 30–32 punctures.

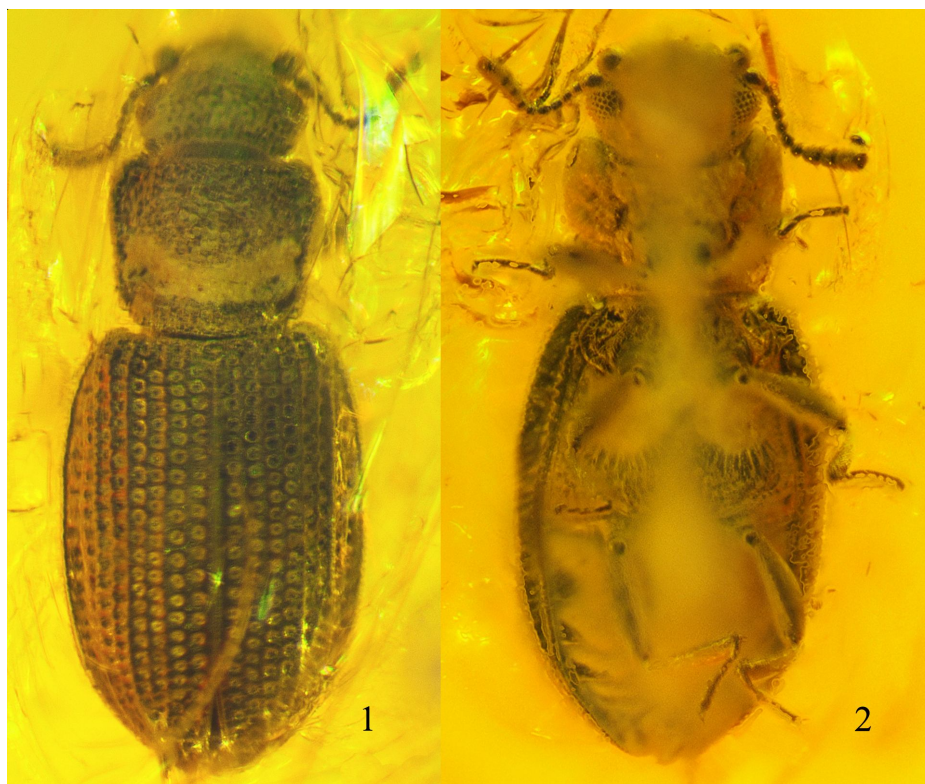
The only fossil representative of the genus *L. kulickai* Borowiec, 1985 was known before this study. The latter also originated from Baltic amber and differs from *L. alexeevi* sp. nov. in the shape of posterior angles of pronotum, distinctly finer puncturation of elytra, shape of the scape and antennal club including only two antennomeres.

Description

Length 1.2 mm, max. width 0.5 mm. Dorsal surface unicolorous brownish. Elongate, moderately convex ventrally and with strongly convex elytra. Integument nearly mat, only elytra with slight shine.

Head transverse with distinct punctures; temples shorter than width of eye, subparallel; vertex evenly convex, densely punctured. Neck distinctly narrowing. Clypeus transverse. Labrum almost twice as wide as long. Eyes large, strongly convex with moderately large facets. Antennae 11-segmented (Fig. 7), moderately long, reaching the middle of pronotum. Scape large, subspherical; antennomere 2 subcylindrical, smaller than scape and longer than antennomere 3; antennomeres 3-8 slightly longer than wide; antennomeres 9-11 thick and forming loose club; antennomeres 9 and 10 subcylindrical and each of them about 1.5 times as long as 11 antennomere.

Pronotum about as long as wide, widest in anterior 1/3, slightly narrowed anterad and more posterad; with large, dense punctures, interspaces between them much smaller than a puncture diameter. Sides of pronotum distinctly convex and feebly emarginate; anterior edge shallowly bi-emarginate. Anterior angles moderately projecting forward and somewhat rounded; posterior angles widely rounded. Pronotal disc with two longitudinal flat elevations and four depressions: two deep and oval depressions near



Figs 1–2. *Latridius alexeevi* sp. nov.: 1 – habitus, dorsal view; 2 – habitus, ventral view

posterior angles and also two more shallow and round depressions at anterior angles. Base of pronotal disc with a transverse sulcus. Scutellum small, transverse. Elytra about 1.5 as long as wide combined; widest at the middle; moderately convex at disc and rather steeply sloping at sides; lateral sides widely explanate. Punctures in elytral rows very large and deep, in anterior half of elytra punctures subcontiguous, becoming slightly smaller in posterior half. Interstriae 3, 5 and 7 strongly carinate; interstria 6 moderately carinate; interstria 8 moderately carinate only in the middle; carinae 3 and 5 closed posterad. Epipleura of elytra wide in anterior part and gradually narrowing posteriorly; with large punctures. Meso- and metaventrites covered with dense and distinct punctures.

Legs moderately long and narrow. Femora thickest at the middle and 2.0–2.5 times as wide as tibiae. Tibiae thin and slightly shorter than

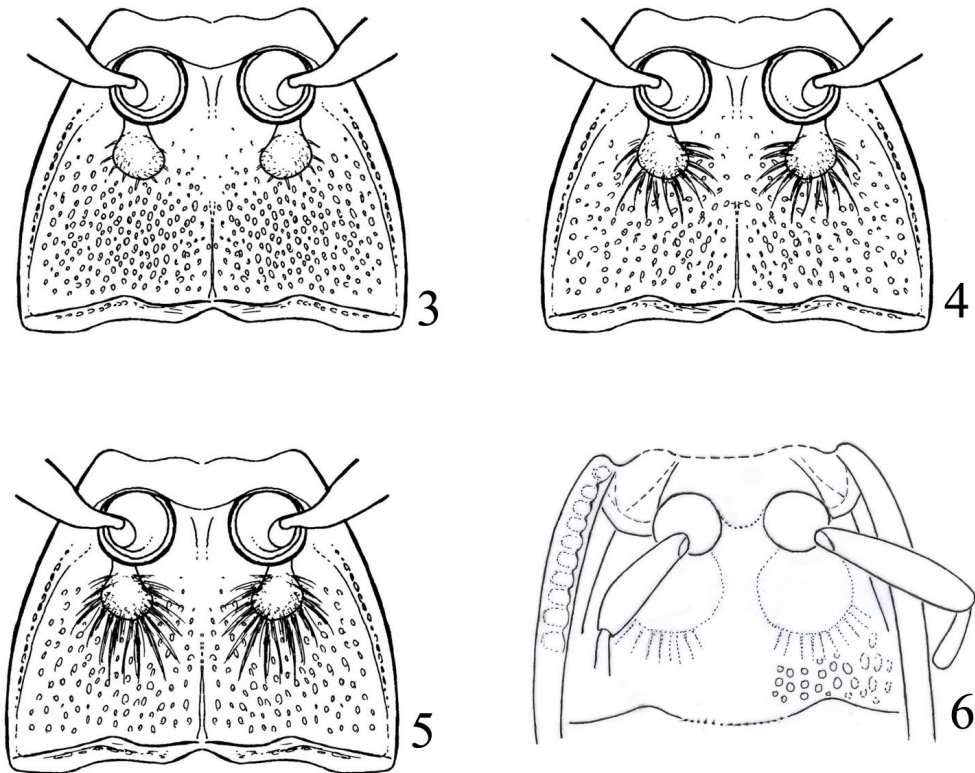
femora. Tarsi about 2/3 as long as tibiae; tarsomeres 1 and 2 comparable in length; tarsomere 3 markedly longer than both previous ones combined. Claws simple, small and thin.

Etymology

This species is dedicated to our colleague Vitaly I. Alexeev, coleopterologist from Kaliningrad (Russia).

DISCUSSION

The family Latridiidae represented in the Lower Cretaceous Lebanese amber by the palaeoendemic Tetrameropsinae and true Latridiinae sensu stricto (Kirejtshuk & Azar 2008; Kirejtshuk et al. 2009) can be interpreted as an evidence of the level of group differentiation reached by this family at the beginning of the



Figs 3-6. Metasternum: 3 – *Latridius porcatus* Herbst, 1793; 4 – *L. minutus* (Linnaeus, 1767); 5 – *L. assimilis* Mannerheim, 1844; 6 – *L. alexeevi* sp. nov. (figs 3-5 after Rucker 2006)



Fig. 7. *Latridius alexeevi* sp. nov.: antenna

Cretaceous. The subfamily Latridiinae in the Early Cretaceous seemed to have been already as differentiated as it is in the Recent epoch. On the other hand, the representation of both recent subfamilies by the recent genera in the Lower Eocene (Oise and Baltic amber) demonstrates

that the Latridiidae fauna of the Palaeogene had a general characteristics rather comparable with that of the recent fauna.

ACKNOWLEDGEMENTS

The authors are sincerely grateful to Alexander Anichtchenko (Daugavpils, Latvia) for preparing of the drawings. The research by Andris Bukejs has been done within the framework of the project of European Social Fund (No 2009/0206/1DP/1.1.1.2.0/09/APIA/VIAA/010). The study of the second co-author was supported by the program of the Presidium of the Russian Academy of Sciences 'Origin of biosphere and

evolution of geo-biological systems', Russian Foundation of Basic Research (grant N 09-04-00789-à) and Muséum national d'Histoire naturelle by providing him a possibility to work in this museum according to the program of visiting professors.

REFERENCES

- Borowiec L. 1985. Two new species of *Lathridius* sensu lato (Coleoptera: Lathridiidae) from Baltic amber. *Polskie Pismo Entomologiczne* 55: 251-254.
- Cruickshank R.D., Ko K. 2003. Geology of an amber locality in the Hukawng Valley, northern Myanmar. *Journal of Asian Earth Sciences* 21: 441-455.
- Hieke F., Pietrzyński E. 1984. Die Bernstein-Käfer des Museums für Naturkunde, Berlin (Insecta: Coleoptera). *Mitt. Zool. Mus. Berlin* 60 (2): 297-326.
- Kirejtshuk A.G., Azar D. 2008. New taxa of beetles (Insecta, Coleoptera) from Lebanese amber with evolutionary and systematic comments. *Alavesia* 2: 15-46.
- Kirejtshuk A.G., Azar D., Tafforeau P., Boistel R., Fernandez V. 2009. New beetles of Polyphaga (Coleoptera, Polyphaga) from Lower Cretaceous Lebanese amber. *Denisia*, 26 (zugleich Katalogue der oberösterreichischen Landesmuseen, Neue Serie, 86): 119-130.
- Klebs R. 1910. Über Bernsteineinschlüsse in allgemeinen und die Coleopteren meiner Bernsteinsammlung. *Schriften der Physikalischen-Ökonomischen Gesellschaft zu Königsberg* 51: 217-242.
- Kubisz D. 2000. Fossil beetles (Coleoptera) from Baltic amber in the collection of the Museum of Natural History of ISEA in Krakow. *Polish Journal of Entomology* 69 (2): 225-230.
- Martínez-Delclós X., Briggs D.E.G., Peñalver E. 2004. Taphonomy of insects in carbonates and amber. *Palaeogeography, Palaeoclimatology, palaeoecology* 203: 19-64.
- Ponomarenko A.G., Kirejtshuk A.G. 2011. Catalogue of fossil Coleoptera. Available at <http://www.zin.ru/Animalia/Coleoptera/rus/paleosys.htm> [accessed August 2011].
- Ritzkowski S. 1997. K-Ar-Altersbestimmungen der bernsteinführenden Sedimente des Samlandes (Paläogen, Bezirk Kaliningrad). *Metalla, Bochum*, 66: 19-23.
- Rasnitzyn A.P. Ross A.J. 2000. A preliminary list of arthropod families present in the Burmese amber collection at The Natural History Museum, London. *Bulletin of the Natural History Museum, Geological Series* 56 (1): 21-24.
- Rücker W.H. 2006. Bestimmungshilfe zu *Latridius anthracinus* Mannerheim, *Latridius minutus* (Linné) und *Latridius pseudominutus* (Strand) (Coleoptera: Latridiidae). *Latridiidae – Mitteilungsblatt für Systematik und Taxonomie der Latridiidae* 4: 19-22.
- Spahr U. 1981. Systematischer Katalog der Bernstein- und Kopal-Käfer (Coleoptera). *Stuttgarter Beiträge zur Naturkunde, Ser. B* 80: 1-107.
- Weitschat W., Wichard W. 2010. Baltic amber. In: Penney D. (ed.): *Biodiversity of fossils in amber from the major world deposits*. Siri Scientific Press: 80-115.

Received: 12.10.2011.

Accepted: 20.12.2011.

Pensoft Publisher

Launched for scientists, by scientists!

Pensoft Publishers specialize in academic and professional book and journal publishing, mostly in the field of biodiversity science and natural history. Starting in 1994, Pensoft has become one of the leading academic publishers based in Eastern Europe with more than 600 books and e-books published so far.



www.pensoft.net