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Autor: Kasantsev, S.
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A recent Species of the fossil Genus Kolibaceum Winkler (Coleoptera, Lycidae) from Eastern China

by **S. Kasantsev**

Abstract: *Tricostaeptera sanguinea* n.subgen., n.sp. is described from Western Hubei, China. The nearest approach of the new taxon is the fossil *Kolibaceum* Winkler, 1987. *Pietrzeniukia* Winkler, 1987, another taxon of fossil Lycidae, is proposed to be considered a junior synonym of *Kolibaceum*. A key to the subgenera of *Dictyoptera, Pyropterus, Benibotarus* and *Kolibaceum* is provided.

Key words: Coleoptera Lycinae Lycidae Erotini – China – Baltic amber– palaeotaxonomy – synonymy – new subgenus – new species – key.

Entomological expeditions to China have started to reveal the fascinating beetle fauna of this country. Among the most exciting findings is the Lycid of the tribe Erotini constituting a species new to science that belongs to a fossil genus described from the Baltic amber.

Morphology and systematic account

The genus *Kolibaceum* Winkler, 1987, was erected for a remarkable altic amber beetle that had only three primary costae on each elytron, with two rows of cells in all interstices but the last which carried three. The genus *Pietrzeniukia* established in the same paper (WINKLER, 1987) after an analysis of the provided photographs has proved to be based on the species obviously belonging to *Kolibaceum* and maybe even the same designated as the type species for the latter. The additional pair of pronotal areolae that served for the separation of the two is also noticeable in *Pietrzeniukia* and besides can hardly be used for higher level systematics as forms with similar structure are not seldom met within other Erotini genera.

Three rows of cells in the last elytral interstice however is quite uncommon for Erotini, and *Kolibaceum* that seemed to have no direct relationships with recent forms appeared to be extinct for quite a long time.

Surprisingly a Lycid with similar elytral structure was discovered in the material of the 1995 Sergei Kourbatov expedition to East China. The only difference between the Chinese insect and *Kolibaceum* consists in the stoutness of the humeral primary elytral costa in the latter. Taking into account presence of forms with similar relationships in *Py-*

ropterus Mulsant, 1838 (i.e. the subgenus *Helcophorus* Fairmaire, 1891, also differing from the nominative taxon by the humeral elytral costa that is evidently more developed than the others – KASANTSEV, 1990, 1993) I would propose the introduction of a new subgenus for this new species.

Tricostaeptera n. subgen.

Type species: *Tricostaeptera sanguinea* n.sp.

Head without rostrum. Eyes relatively small. Antennae filiform, with second and third joints subequal in length and slightly shorter than fourth. Pronotum transverse, with median rhomboidal cell of regular shape. Elytra with three equally developed, at least in the basal half, primary costae, first three interstices with a double row and the fourth with three rows of cells. Elytral surface uniformly evenly pubescent. Hind trochanters elongate, considerably longer than wide; tarsi with widened and gradually diminishing in length (except ultimate) joints; all claws simple.

Tricostaeptera n. subgen. is close in certain parameters to the subgenus *Punicealis* Kasantsev, 1990, of *Dictyoptera* Latreille, 1829, i.e. in the length of the trochanters and the elytral pubescence, still it is readily distinguishable by the peculiar reticulation of the elytra where the forth primary costa is reduced and the last interstice carries three rows of cells. Still the nearest approach is *Kolibaceum*, also having three rows of cells in the last elytral interstice, with the humeral elytral costa evidently much stouter than the others (Winkler, 1987), to which I attribute the new subgenus.

It is a parallel case with *Pyropterus* and *Helcophorus*, when otherwise similar subgenera are separated by the stoutness of the humeral primary elytral costa in one (*Helcophorus*) and uniformity of all primary elytral costae in the other (*Pyropterus*). *Helcophorus* is also known from the Baltic amber (Kasantsev, 1995), and it is very characteristic that in both cases the fossil taxa are the ones with elevated humeral costae.

Tricostaeptera sanguinea n.sp. Fig. 1

♀. Dark brown; pronotum infuscated at the disk, scutellum apically and elytra red; first antennal joint and head anteriorly red brown.

Head with a feeble transverse impression behind antennal prominence. Eyes relatively small (interocular distance twice as long as the ra-

dius). Labrum transverse, slightly convex anteriorly. Maxillary palpi slender, with ultimate joint parallel sided, only slightly longer and wider than 3rd. Antennae cylindrical, half as long as the body, with 3rd joint slightly longer than 2nd and 1.2 times shorter than 4th; 5th and following joints subequal in length.

Pronotum transverse, 1.4 times wider than long, with fine, but conspicuous ribs forming the characteristic structure with median rhomboidal cell (Fig. 1).

Scutellum elongate, rounded and emarginate at apex.

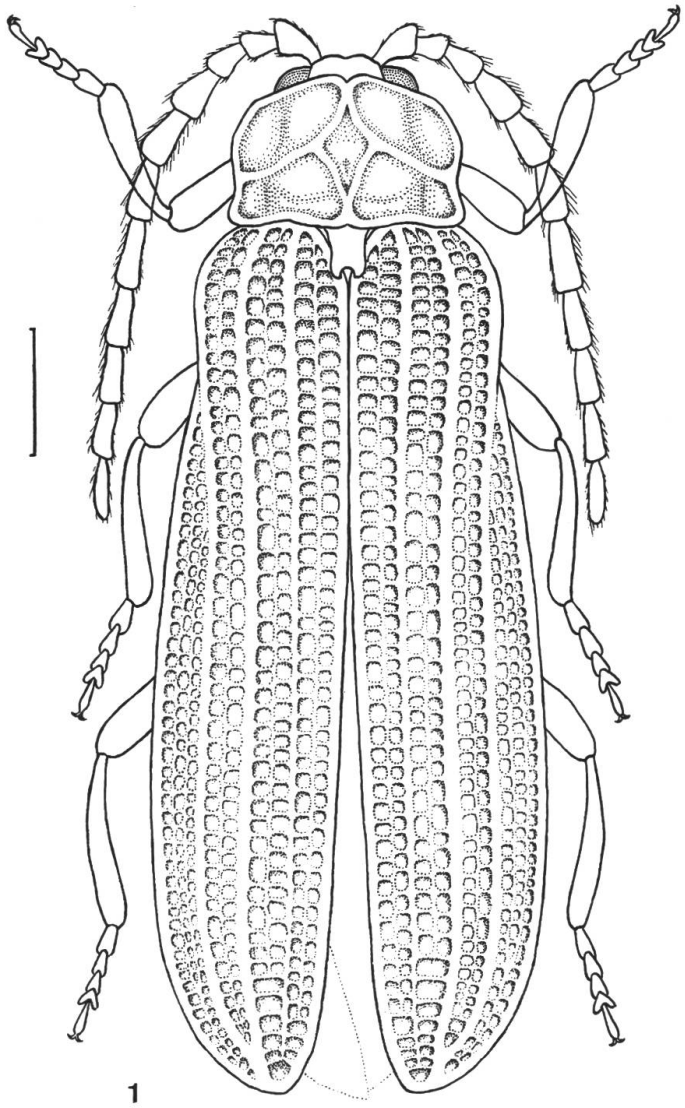

Fig. 1: *Kolibaceum (Tricostaeptera) sanguinea* n.subgen., n.sp. ♂: general view. Scale: 1 mm.

Elytra short, 2.7 times as long as wide humerally, widening posteriorly, with 3 equally elevated in the basal half primary costae, the first of them weakened in the apical half, first three interstices with a double row and the fourth with three rows of well defined rectangular cells (Fig. 1).

Length: 8.5 mm. Width (humerally): 2.45 mm.

♂. Unknown.

Holotype ♀ (Insect Centre Moscow): China, W Hubei: Shennongija Nat Res., 2000–2200 m, 3–8.v.1995, A. Shamaev.

Tricostaeptera sanguinea n.sp. is readily distinguishable from all recent Erotini by the generic features. It differs from *Benibotarus tricostatus* (Pic, 1927) reported from Tonkin and also having 3 primary costae on each elytron (BOCÁK L. & BOCÁKOVÁ M., 1991) by the coloration of antennae.

Thus in Europe reported are representatives of the Erotini genera *Dictyoptera, Pyropterus, Benibotarus* Kôno, 1932 and *Kolibaceum*, either recent or fossil. The subgenera of the four are distinguished from one another by the following characters.

A key to the subgenera of *Dictyoptera, Pyropterus, Benibotarus* nd *olibaceum*

1. Each elytron with 3 primary costae 2
– Each elytron with 4 primary costae 7
2. Last elytral interstice with a double row of reticulate cells (*Benibotarus*) 3
– Last elytral interstice with three rows of reticulate cells (*Kolibaceum*) 6
3. Second and third elytral costae considerably stouter than first including the basal half of the elytra 4
– All (three) primary elytral costae equally developed, at least in the basal half 5
4. Hind trochanters elongate, their length considerably exceeding their width ***Laterialis*** Kasantsev, 1990
– Hind trochanters of normal length that does not exceed their width ***Sibetarus*** Bocák & Bocáková, 1991
5. Elytral pubescence spread along the costae. Apices of trochanters acute. Dorsal blade of the aedeagus fully developed ***Benibotarus*** Kôno, 1932
– Pubescence uniformly spread throughout the elytra. Apices of trochanters rounded. Dorsal blade of the aedeagus shortened ***Greenarus*** Kasantsev, 1995

6. Humeral primary elytral costa definitely stouter than the others
Kolibaceum Winkler, 1987
– All primary elytral co sta equally developed, at least in the basal half
Tricostaeptera n.subgen.
7. Elytral interstices with a single row of cells ..... (*Pyropterus*) 8
– Elytral interstices with a double row of cells ..... (*Dictyoptera*) 10
8. Humeral elytral costa much stouter that the others
Helcophorus Fairmaire, 1891
– All four primary elytral costae equally developed, at least in the basal half 9
9. Median pronotal cell of regular rhomboidal or oval shape. Elytral pubescence uniform ***Pyropterus*** Mulsant, 1838
– Lateral angles of median pronotal cell stretched outwards. Elytral costae densely pubescent, while bottom of cells hairless
Taphomimus Kasantsev (1996)
10. Elytral pubescence uniform. Hind trochanters considerably longer than wide ***Punicealis*** Kasantsev, 1990
– Elytral costae densely pubescent, while bottom of cells hairless. Hind trochanters hardly longer than wide
Dictyoptera Latreille, 1829

Discussion

All fossil taxa of Lycidae described from the Baltic amber by Winkler have turned out to be either synonymous (*Hiekeolycus* and *Pietrzeniukia*) or to have rather close relationships (*Kolibaceum*) with recent forms. Morphological peculiarities of the amber genera have been found to have recent parallels (stoutness of humeral costa and three rows of cells in the last elytral interstice) or to be founded on erroneous interpretation of the structure of the badly observed body parts (the way the trochanters are linked to femora, the shape and location of antennal sockets, etc.).

In this respect Winkler's conclusions on the evolutionary after-effects in this group of Lycidae and on its age seem to be doubtful. On the contrary, presence of practically unmodified or little modified forms at least in the Cretaceous testify to a much earlier genesis of the family than it has been presumed till now.

On the other hand, the fact that in all (known) fossil Erotini taxa the humeral elytral costae are strongly elevated, the same phenomenon being observed only in few recent and most probably relic forms be-

longing to different genera, suggests greater phylogenetic importance of this character in the tribe, and urges to carefully reanalyse its superspecific classification.

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Author's address:
Sergei Kasantsev
Donetskaya 13-326
109 651 Moscow Russia