

Taxonomic changes in Scolytinae (Coleoptera: Curculionidae) from Eastern Asia

Об изменениях в систематике восточноазиатских короедов (Coleoptera: Curculionidae: Scolytinae)

M.Y. Mandelshtam¹, A.V. Petrov², M.V.L. Barclay³, M. Knížek⁴
& R.A. Beaver⁵
М.Ю. Мандельштам¹, А.В. Петров², М.В.Л. Баркли³, М. Книжек⁴,
Р.А. Бивер⁵

¹ c/o Zoological Institute RAS, University Embankment 1, St.-Petersburg 199034, Russia.

² Department of Ecology and Forest Protection, Moscow State University of Forestry, Moscow Region, Mytishchi-1 141005, Russia.

³ Department of Entomology, Natural History Museum, London SW7 5BD, United Kingdom of Great Britain and Northern Ireland.

⁴ Forestry and Game Management Research Institute, Jiloviště-Strnady, Praha 5-Zbraslav, CZ-15604, Czech Republic.

⁵ 161/2 Mu 5, Soi Wat Pranon, T.Donkaew, A.Maerim, Chiangmai 50180, Thailand.

¹ Зоологический институт РАН, Университетская наб. 1, Санкт-Петербург 199034, Россия.

² Кафедра экологии и защиты растений, Московский государственный лесотехнический университет, Московская обл., Мытищи-1 141005, Россия.

KEY-WORDS: bark beetles, Curculionidae, Scolytinae, synonymy, taxonomy, Far East, *Longulus*.

КЛЮЧЕВЫЕ СЛОВА: короеды, Curculionidae, Scolytinae, синонимия, систематика, Дальний Восток, *Longulus*.

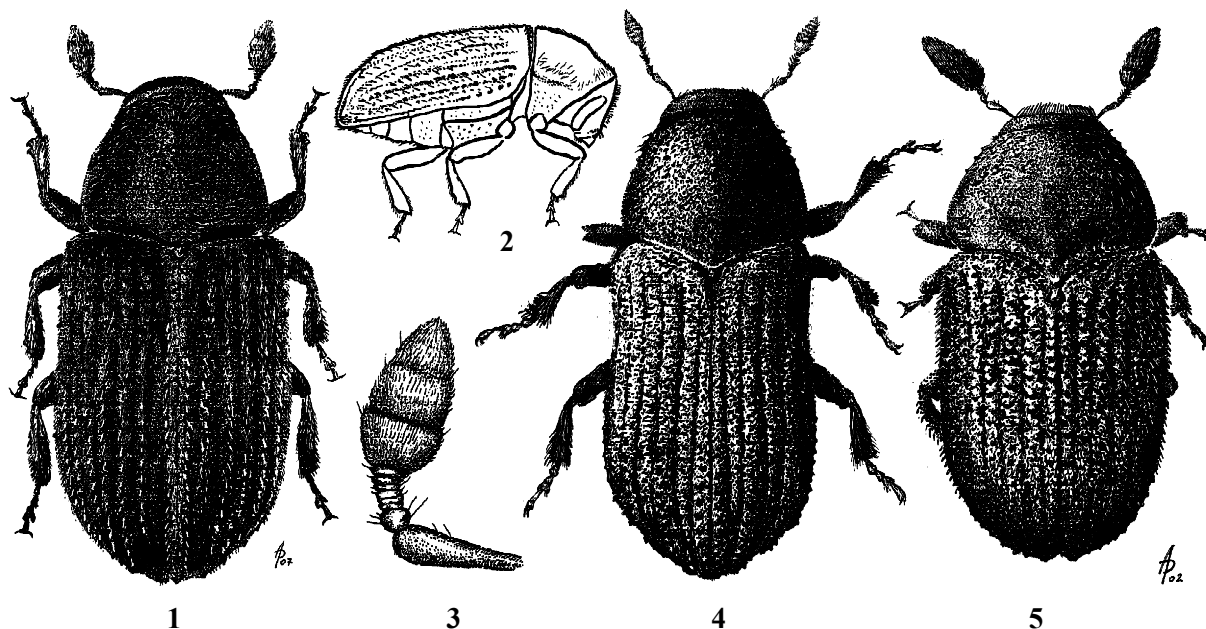
ABSTRACT. The subgenus *Longulus* Krivolutskaya, 1968 with type species *Hylesinus elatus* Niisima, 1913 is resurrected and raised to generic level. The following new combinations and synonymies are proposed: *Alniphagus costatus* (Blandford, 1894) **comb. n.** from *Hylesinus*; *Pseudothysanoes modestus* (Murayama, 1940) **comb.n.** from *Cryphalus* (*Stephanoderes*); *Alniphagus costatus* (Blandford, 1894) = *Hylastes alni* Niisima, 1909, **syn.n.**; *Pseudothysanoes modestus* (Murayama, 1940) = *Gretschkinia mongolica* Sokanovsky, 1959, **syn.n.**; *Cryphalus latus* Eggers, 1929 = *Cryphalus premyaensis* Murayama, 1943, **syn.n.** *Hylesinus tristis* Blandford, 1894 is removed from synonymy with *Alniphagus costatus*. Three poorly known species *Longulus elatus* (Niisima, 1913), *Hylesinus tristis* and *Pseudothysanoes modestus* are illustrated. Lectotypes for *Hylesinus tristis*, *Cryphalus modestus* Murayama, 1940, and *Gretschkinia mongolica*, are designated.

РЕЗЮМЕ. Восстановлен таксономический статус подрода *Longulus* Krivolutskaya, 1968 с типовым видом *Hylesinus elatus* Niisima, 1913, ранг этого подрода повышен до родового. Установлены следующие новые комбинации и синонимии: *Alniphagus costatus* (Blandford, 1894) **comb. n.** перенесён из рода *Hylesinus*; *Pseudothysanoes modestus* (Murayama, 1940) **comb.n.** перенесён из рода *Cryphalus* (*Stephanoderes*); *Alniphagus costatus* (Blandford, 1894) = *Hylastes alni* Niisima, 1909, **syn.n.**; *Pseudothysanoes*

modestus (Murayama, 1940) = *Gretschkinia mongolica* Sokanovsky, 1959, **syn.n.**; *Cryphalus latus* Eggers, 1929 = *Cryphalus premyaensis* Murayama, 1943, **syn.n.** Выяснено, что *Hylesinus tristis* Blandford, 1894 не является синонимом *Alniphagus costatus*, а представляет самостоятельный вид. Для трёх плохо изученных видов *Longulus elatus* (Niisima, 1913), *Hylesinus tristis* и *Pseudothysanoes modestus* даны рисунки. Обозначены лектотипы *Hylesinus tristis*, *Cryphalus modestus* Murayama, 1940 и *Gretschkinia mongolica*.

Introduction

The Far-Eastern Palaearctic subregion is one of the richest in species of Scolytinae within the Palaearctic region [Wood & Bright, 1992]. Although many bark beetle species from the Far-East and from China are still to be described, an extensive study of existing species is needed. It is likely that numerous cases of synonymy will be discovered. This situation is partly due to the independent description of Far-Eastern scolytines by Russian, British, Japanese, Chinese and German authors, unaware in many cases of pre-existing descriptions of particular species in foreign languages, and to the difficulties of studying type species housed in distant museums and collections. In addition, the brevity and inaccuracy of old descriptions, and their lack of illustrations, has led to duplication of descriptions. In the current short note we resurrect and raise to



Figs 1–5. 1–3 — *Longulus elatus* Niisima, 1913: 1 — habitus; 2 — side view; 3 — antenna; 4 — *Alniphagus costatus* (Blandford, 1894), holotype, habitus; 5 — *Hylesinus tristis* Blandford, 1894, lectotype, habitus.

Рис. 1–5. 1–3 — *Longulus elatus* Niisima, 1913: 1 — внешний вид; 2 — вид сбоку; 3 — усик; 4 — *Alniphagus costatus* (Blandford, 1894), голотип, внешний вид; 5 — *Hylesinus tristis* Blandford, 1894, лектотип, внешний вид.

the generic level the sub-genus *Longulus* Krivolutskaya, 1968, and establish several new combinations and synonyms in Eastern Asian Scolytinae.

The following abbreviations are used for institutions keeping the collections mentioned below (curators are given in parentheses): BMNH — Natural History Museum, London (M.V.L. Barclay); IBSS — Institute of Biology and Soil Sciences, Vladivostok (G.Sh. Lafer); IRSNB — Institut Royal des Sciences Naturelles de Belgique (J. Cools, P.Limbourg); NHMW — Museum of Natural History, Vienna (H. Schönmann); USNM — United States National Museum, Smithsonian Institution (N. Vandenberg); ZISP — Zoological Institute, St.Petersburg (B.A. Korotyaev); ZMMU — Zoological Museum of Moscow University (N.B. Nikitsky).

Tribe Hylesinini Erichson, 1836

Genus *Longulus* Krivolutskaya, 1968, **genus bona**

Type species, *Hylesinus elatus* Niisima, 1913

G.O. Krivolutskaya [1968] established a new subgenus *Longulus* to incorporate two Far-Eastern species of *Hylesinus* Fabricius, 1801 with a horizontal abdomen, i.e. not ascending to meet the elytral apex as in other species of the genus *Hylesinus*. *Hylesinus elatus* Niisima, 1913 (= *Ulmiphagus ulmi* Krivolutskaya, 1965, nom. nudum), described from Japan was named as the type species of the new subgenus, and *Hylesinus costatus* Blandford, 1894 also from Japan was included as the second species. Krivolutskaya [1968] gave multiple figures of *Hylesinus (Longulus) elatus* as a species found by her for the first time in Russia in the Kuril Islands. We have studied long series of *H. elatus* specimens in ZISP and IBSS, all collected on Kunashir Island at the southern end of the Kuril Islands. We also examined speci-

mens with the label “Japan, Hokkaido, Maruyama, 20/X 1957, leg. Akira Nobuchi” determined as *H. elatus* by A. Nobuchi (ZMMU). Based on the study of these specimens, we consider that *Longulus* is sufficiently distinct from *Hylesinus* and related genera to be considered as a distinct genus.

The habitus of *Longulus* (Figs 1–2) indicates that the genus clearly belongs in the tribe Hylesinini. The antennal funicle is 7-segmented (Fig. 3). The prothorax has an elevated costal ridge extending from the procoxa to the anterior margin. The basal margin of each elytron is procurved and armed with a series of crenulations. The scutellum is visible. The protibia is of typical hylesinine form, the lateral margin armed with a series of socketed teeth. However, as in *Hylastinus* Bedel, 1888 the pronotum is not asperate anterolaterally. In Wood’s [1986] key to the genera of Hylesinini, it will run to a group of three genera (*Hylastinus*, *Kissophagus* Chapuis, 1869 and *Pteleobius* Bedel, 1888), but most likely to *Hylastinus* because of the lack of asperities anterolaterally on the pronotum. Whereas differences of *Longulus* from *Hylastinus* are obscure and need further study, there are enough features to distinguish *Longulus* from *Hylesinus*: the horizontal abdomen which does not rise to meet the elytral apex, the elytral vestiture which consists of elongate and not rounded scales (Fig. 1), and the antennal club in which there is a suture only between the first and second segments (Fig. 3). The second suture is shown only by a row of hairs. Several additional specimens labelled as *Kissophagus tiliae* Niisima, 1909 from Schedl’s collection in NHMW were examined and found indistinguishable from *L. elatus*. *L. elatus* is also morphologically closely similar to the Caucasian species *Hylastinus tiliae* Semenov, 1902, which can be distinguished from it only with difficulty by characters of the metepisternal vestiture.

The relationship of *Longulus* with the genus *Pseudoxylechinus* Wood & Huang, 1986 remains to be investigated. As noted above, specimens identified by Schedl of *K. tiliae*,

a species transferred to *Pseudoxylechinus* by Wood and Huang [1986], were found to be identical with *L.elatus*. Due to the loss of Niisima's types of *H.elatus* the question of the identity or separate standing of *L.elatus* and *K.tiliae* can not be satisfactorily solved at this time. *Pseudoxylechinus* was placed in the tribe Tomiini by Wood [1986], but the distinctions between the two tribes are not always clear. Comparative studies of *Longulus*, *Pseudoxylechinus*, and *Hylastinus* are needed. Such a study can not be carried out at present, mainly because of the unavailability of the type species and other representatives of the genus *Pseudoxylechinus*, which are located in the Zoological Institute of the Chinese Academy of Sciences in Beijing.

The subgenus *Longulus* was omitted from Wood and Bright's [1992] world-wide catalog of Scolytinae, and the most recent supplement to that catalog [Bright & Skidmore, 2002]. Here, we consider it as a monotypic genus including only the type species, *L.elatus*. The second species included in *Longulus* by Krivolutskaya [1968] (*H.costatus*) is transferred later in this paper to the genus *Alniphagus*. Wood and Bright [1992] state that syntypes of *L.elatus* are in the Nobuchi collection (ZMMU). However, Nobuchi [1971] had already pointed out that the types of *L.elatus* could not be found in Niisima's collection, and might never have been designated.

Genus *Alniphagus* Swaine, 1918

Alniphagus costatus (Blandford, 1894), **comb. nov.**

= *Hylastes alni* Niisima, 1909, **syn. n.**

Alniphagus alni var. *imitator* Sokanovsky, 1958, no status

Blandford [1894] described *Hylesinus costatus* from a single specimen (Fig. 4). This unique specimen (holotype) (BMNH) bears the following labels: 1 — round label with "Type" printed in a red circle; 2 — rectangular label printed "Japan. G. Lewis 1910-320"; 3 — rectangular label handwritten "*Hylesinus costatus* Blandf. Type". The mounting card has "Junsai" handwritten on the underside. The holotype is a male. Examination of Blandford's type shows that it belongs to the genus *Alniphagus* Swaine, 1918 based on the following characters: conical antennal club with six annuli separated by rows of hairs, shallowly emarginate eye, elongate body, horizontal abdomen, not rising to meet elytral apex. The species is thus excluded from the genus *Longulus* (see above).

The species described as *H.alni* was considered by Spessivtsev [1919a] to belong to the genus *Hylastinus* and probably to a new subgenus *Hylastinoides* Spessivtsev, 1919. However, in the same volume of "Entomologist's Monthly Magazine" Spessivtsev [1919b: 279] published a correction to his own paper, making *Hylastinoides* a junior synonym of *Alniphagus*. Since Spessivtsev's note [1919b] *H.alni* has been considered as a member of the genus *Alniphagus*. Comparison of *A.costatus* with multiple specimens of *A.alni* (Niisima, 1909) from different locations in the Russian Far-East confirms that they are conspecific. Nobuchi [1985] listed *H.costatus* under the genus *Alniphagus*, and included *H.alni* as a synonym of the species, but it is thought that he did not examine the type of *H.costatus*. We have examined a row of specimens labelled as *A.costatus* var. *imitator* in Sokanovsky's collection in Moscow, including the specimen with the red label "forma n." from Vladivostok and we have found no differences between this "form" of the species [Sokanovsky, 1958] and the typical form from Japan. The range of *A.costatus* includes continental parts of the Russian Far-East (Southern parts of Khabarovsk Terr., Primorsk Terr.), Sakhalin, Southern Kurils (Iturup I. and Kunashir I.), Japan (Hokkaido, Honshu), and northern Korea [Chu, 1964]. Among the known host trees of the species are

Alnus hirsuta, *A.fruticosa*, *A.incana* var. *glauca* (Betulaceae) [Stark, 1952]. Because Schedl [1958] suggested that *Hylesinus tristis* was a junior synonym of *H.costatus*, Wood and Bright [1992] include in the list of host trees for *H.costatus* several tree species which it does not infest, namely *Fraxinus mandshurica* and *F.sieboldiana* (Oleaceae), which are normal hosts of *H.tristis*. Krivolutskaya [1996] repeats this mistake. Wood and Bright [1992] also list as a host plant *Cladrastis shikokiana* (Leguminosae), but this seems unlikely for both *A.costatus* and *H.tristis*. Present knowledge indicates that *A.costatus* breeds only in alder (*Alnus* spp.), and *H.tristis* only in ash (*Fraxinus* spp.).

Genus *Hylesinus* Fabricius, 1801

Hylesinus tristis Blandford, 1894, **stat.n.**

Schedl [1958] suggested that *H.tristis* was a synonym of *H.costatus*, based on comparison of material in IRSNB, though he apparently did not see the type of *H.costatus*. The synonymy is repeated by Wood and Bright [1992]. We have studied seven of Blandford's syntypes of *H.tristis* in both BMNH (6) and IRSNB (1), and it is clear that it is a typical *Hylesinus* and not a member of the genus *Alniphagus*. This clearly excludes the possibility of synonymy between *A.costatus* and *H.tristis*.

In order to stabilise the name, we here designate a lectotype for *H.tristis* from the syntypes in BMNH, a specimen collected on 1st May 1881 at Ichiuchi by G. Lewis; the date, locality and collector are cited in the original description [Blandford, 1894]. The lectotype here designated (BMNH) is a male and bears the following labels: 1 — round label with "Type" printed in a red circle; 2 — rectangular white label printed "Japan. G. Lewis 1910-320"; 3 — rectangular white label printed "Ichiuchi, 30.IV.-2.V.81"; 4 — rectangular white label handwritten "*Hylesinus tristis* Blandf. Type"; 5 — rectangular red card printed "LECTOTYPE, *Hylesinus tristis* Blandford, 1894, des. Petrov & Barclay 2007". The mounting card has "1/5/81" handwritten on the underside. An additional 5 specimens from BMNH and 1 specimen from IRSNB are considered as paralectotypes, and the following label has been attached to each; rectangular red card printed "PARALECTOTYPE, *Hylesinus tristis* Blandford, 1894, des. Petrov & Barclay 2007". The 5 paralectotypes from BMNH have the following labels: one specimen: 1 — rectangular white label printed "Japan G. Lewis 1910-320"; 2 — rectangular white label printed "Ichiuchi 30.IV.-2.V.1881"; underside of mounting card handwritten "1/5/81"; one more specimen: 1 — rectangular white label printed "Junsai Lake"; 2 — rectangular white label printed "Japan G. Lewis 1910-320"; underside of mounting card handwritten "Junsai"; two specimens: 1 — rectangular white label printed "Japan G. Lewis"; 2 — rectangular white label printed "F. W. Sampson coll., B.M. 1926-482"; 3 — rectangular white card "*Hylesinus tristis* Bld."; 4 — rectangular grey card, black edged, red printed text "valeur typique"; one more specimen: 1 — rectangular white label printed "Japan G. Lewis"; 2 — rectangular white label printed "F. W. Sampson coll., B.M. 1926-482"; 3 — rectangular white label handwritten "*tristis*". The paralectotype from IRSNB has the following labels: 1 — rectangular white card printed "Japan, G. Lewis" (identical with those on the last three listed paralectotypes in BMNH); 2 — rectangular white card printed "det." handwritten "Blandford" printed "HYLESINUS" handwritten "*tristis* Bldfd"; 3 — rectangular white card printed "Coll. R.I.Sc.N.B" "Japon"; 4 — rectangular white card handwritten "*Hylesinus tristis* Bl."; 5 — rectangular grey card, black edged, red printed text: "TYPE".

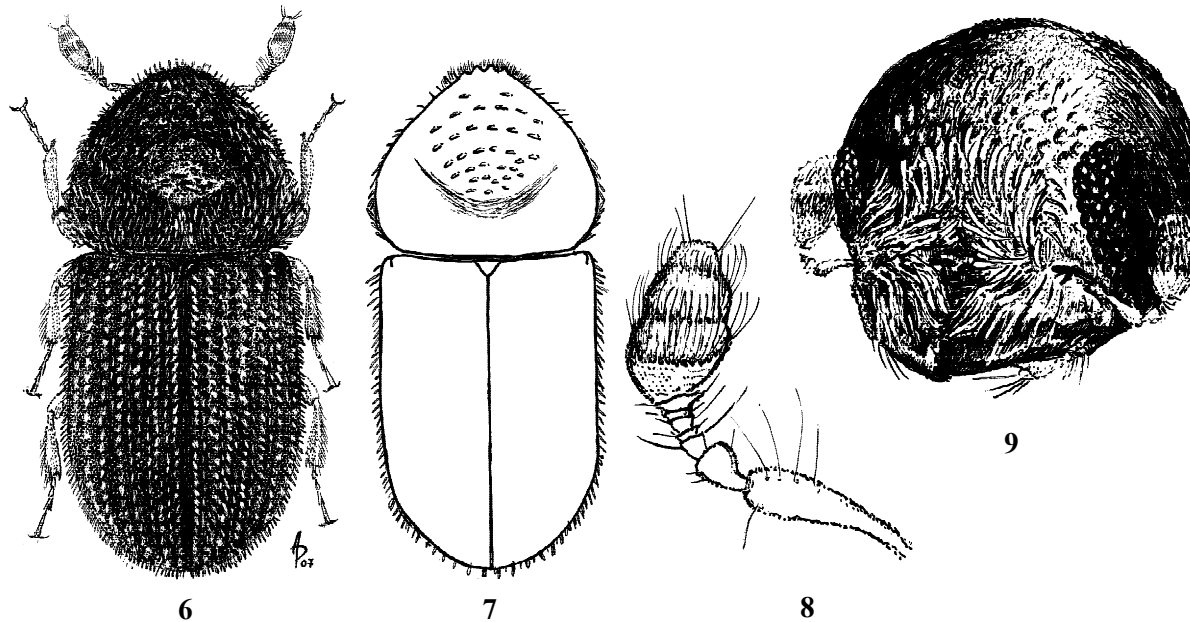


Fig. 6–9. *Pseudothysanoes modestus* (Murayama, 1940): 6 — female, habitus; 7 — male, form of the pronotum and elytra; 8 — female antenna; 9 — female front.

Рис 6–9. *Pseudothysanoes modestus* (Murayama, 1940): 6 — самка, внешний вид; 7 — самец, форма переднеспинки и надкрылий; 8 — усик самки; 9 — лоб самки.

Tribe Micracini LeConte, 1876

Genus *Pseudothysanoes* Blackman, 1920

Pseudothysanoes modestus (Murayama, 1940), **comb.n.**

= *Gretschkinia mongolica* Sokanovsky, 1959, **syn.n.**

Murayama [1940] described *Cryphalus* (*Stephanoderes*) *modestus* from a series of specimens taken from dead elm (*Ulmus* spp.) in northern China. Wood and Bright [1992] placed the species in the genus *Hypothenemus* Westwood, 1838, presumably because of the original description in *Stephanoderes* Eichhoff, 1872, a synonym of *Hypothenemus*. Examination of the type series in USNM reveals that the species does not belong in the tribe Cryphalini, but in the Micracini, and that it belongs in the genus *Pseudothysanoes* Blackman, 1920. This is an American genus, with a single species occurring in Asia, *Pseudothysanoes mongolica* (Sokanovsky, 1959), a species originally described in the monotypic genus *Gretschkinia* Sokanovsky, 1959, which was synonymised with *Pseudothysanoes* by Wood [1984]. Examination of type material of this species reveals that it is identical with *C. modestus*. Murayama [1940] was inaccurate in his description of *C. modestus* and indicated that his species possessed only 5, not 6 funicular segments. This original mistake led Sokanovsky [1959], familiar with Murayama's description but not with his specimens, to exclude the possible identity of his species with *C. modestus*. Accordingly we here transfer *C. modestus* to *Pseudothysanoes*, and place *G. mongolica* in synonymy with it. In order to stabilise the name, and because *C. modestus* was described from a mixed series of specimens, we designate here a lectotype for *C. modestus*. The lectotype, together with two other specimens, mounted on the same pin, bears the following labels: "Seiryu, Jehol, Manchoukuo, 30.III.1939, J. Murayama"; "*Stephanoderes modestus* (underlined) Mu-

rayama, Type"; "J. Murayama Collection 1976"; "LECTOTYPE *Cryphalus modestus* Murayama, 1940 (lower front specimen) M.Knížek des., 2003". An additional note is included on the label by M. Knížek: "upper and lower back specimens are of another species, M. Knížek, 2003". These two specimens are clearly not *Pseudothysanoes*, but a *Cryphalus*, probably belonging to a yet undescribed species. Because these specimens clearly do not fit the original Murayama [1940] description of *C. modestus* they are excluded from the type series and can not be considered as paralectotypes. Six other specimens from the same locality and collection and mounted on another two pins have been designated paralectotypes (labelled by M. Knížek). One additional specimen mounted on one of these pins is of a different species, probably the same species of *Cryphalus* Erichson, 1836 as on the pin of the lectotype (this is noted by M. Knížek on a separate label). When labelling the type material of *G. mongolica*, Sokanovsky [1959] designated male and female "holotypes" as well as several cotypes. In order to stabilise the name, syntypes of *G. mongolica* from ZMMU were studied and the lectotype and paralectotypes were designated. The lectotype is a specimen (sex unclear, but probably a female), which bears the following labels: 1 — golden quadrangular piece of paper; 2 — male symbol; 3 — "Mongolia, Selenga [river], 13.X.1956, on elm, leg. V.P. Grechkin" (in Russian); 4 — "*Gretschkinia mongolica* m. Det. Sokanovský"; 5 — "Holotypus *Gretschkinia mongolica* Sok.", hand-written label in black ink on red paper; 6 — red paper with the words "LECTOTYPE *Gretschkinia mongolica* Sokanovsky, 1959 des. Mandelsham, 2007". Four more paralectotypes are carded on individual pins and two paralectotypes are combined on one more additional pin; all these 6 specimens were collected at the same date and place as the lectotype and carry the labels: "PARALECTOTYPE *Gretschkinia mongolica* Sokanovsky, 1959 des. Mandelsham, 2007".

The habitus of *G. mongolica* is typical of the genus *Pseudothysanoes* (Fig. 6) with the male differing from the female usually by the presence of stronger tubercles at the anterior margin of the pronotum (Fig. 7) and by the scarce frontal pubescence. Antennae (Fig. 8) are essentially the same in both sexes, without a brush of hair on the scapus in the female. The female front (Fig. 9) bears dense golden hairs hiding the well-developed microsculpture of the frontal surface. The male genitalia are rather complicated in construction.

P. modestus infests *Ulmus pumila* in seasonally flooded forests near river banks. The distribution of *P. modestus* (cited as *G. mongolica*) as published by Lindeman [1993] and Krivolutskaya [1996] includes not only Mongolia, but also Russian Transbaikalia, but its occurrence in the latter is not yet proven. G.V. Lindeman (Institute of Forestry, Russian Academy of Science, personal communication to A. Petrov) has pointed out that during his own long-standing research in the Buryatia and Chita Regions of Russia, *P. modestus* has never been trapped. The closest locality in Mongolia to the Russian Federation for *P. modestus* is on the Selenga River bank approximately 15 km from the Russian/Mongolian border. Old collections in ZISP (probably dated 1950s) include three specimens of *P. modestus* from Chinese Manchuria (Heilongjiang). Wood & Bright [1992] presumably based on Wood's examination of Chinese material also include the Chinese provinces of Gansu, Hebei, Liaoning, and Shanxi in the distribution. So far, we currently recognize the species only from Mongolia and Northern China, but not from Russia, where it needs to be searched for in the future.

Tribe Cryphalini Lindemann, 1876

Genus *Cryphalus* Erichson, 1836

Cryphalus latus Eggers, 1929

= *Cryphalus premayaensis* Murayama, 1943, **syn.n.**

Cryphalus latus was described by Eggers [1929] from a series of specimens collected from coniferous trees (*Abies*, *Larix*, *Picea*) in the Ussuri region of Russia. Two syntypes of *C. latus* (NHMW) and long series of the species collected from larch trees in the Russian Far East (ZISP) have been compared with the holotype of *Cryphalus premayaensis* Murayama, 1943 (USNM). No important features were found to distinguish the two species. Both species breed in Far-Eastern *Larix* species and the type locality of *C. premayaensis* falls inside the distribution range of *C. latus*. In both these species, the asperate area of the pronotum is located not immediately behind the anterior margin, but is separated from it by a space without tubercles. This feature is stable in long series of *C. latus* distinguishing it from nearly all other Far-Eastern *Cryphalus* species. Murayama [1943], who knew *C. latus* only from its description, pointed out that the larger size (2.1 mm vs 1.5 mm) and black colour of *C. premayaensis* could be important features to discriminate it from *C. latus*. In long series of *C. latus* from the Russian Far East (ZISP), body size as well as body proportions vary significantly and thus cannot be used to separate the two species. Although all *C. latus* specimens were brownish (sometimes with a dark hue), we do not consider colour difference alone sufficient to separate *C. premayaensis* as a distinct species. *C. premayaensis* is therefore considered to be a synonym of *C. latus*.

ACKNOWLEDGEMENTS. The authors express their sincere gratitude to Dr. G.V. Lindeman (Institute of Forestry, Russian Academy of Science) for specimens of *Pseudothysanoes modestus*, and for detailed information on the geographic range of the species. All curators of collections (see the list of museums above) are thanked for the material used in this study. We are is grateful to Prof. Ryūtarō Iwata (Nihon University, Fujisawa, Japan), Dr. Hideaki Goto (Forestry and Forest Products Research Institute, Ibaraki, Japan), Mr. Akira Ueda (Kansai Research Centre, Kyoto, Japan), Dr. Haruo Kinuura (Tohoku Research Centre, Morioka, Japan) for providing helpful reprints of Japanese taxonomic works, and Mr. Klaus Kiesel (Forest University, Freiburg, Germany) for providing a set of papers by Hans Eggers.

The research reported in this paper was partly supported by grant No. MZE 0002070201 of the Ministry of Agriculture of the Czech Republic to M. Knížek.

References

- Blandford W.F.H. 1894. The Rhynchophorous Coleoptera of Japan. Part III. Scolytidae // Transactions of the Entomological Society of London. 1894: 1. P.53–141.
- Bright D.E. & Skidmore R.E. 2002. A Catalog of Scolytidae and Platypodidae (Coleoptera), Supplement 2 (1995–1999). NRC Research Press, Ottawa, Ontario, Canada. 523 pp.
- Chu D.R. 1964. Geographic distribution of the class Scolytidae in Korea // Saengmulhak. Vol.3. No.3. P.5–14 (In Korean, with Russian summary).
- Eggers H. 1929. Fünf neue Borkenkäfer aus dem Osten // Entomologische Nachrichtenblatt. Vol.3. P.9–11.
- Krivolutskaya G.O. 1965. Fauna of bark-beetles (Coleoptera, Ipidae) of the Southern Kuril Islands // In: "Lesovodstvennye issledovaniya na Dal'nem Vostoke" ("Forestry studies in the Far-East"). Edited by V.A.Rosenberg, N.G.Vasilyev and Yu.I.Man'ko. Vladivostok. P.219–243 (in Russian, without English summary).
- Krivolutskaya G.O. 1968. New species of bark beetles (Coleoptera, Ipidae) from Kurile Islands // In: Kurenzov, A.I., Konovalova Z.A. (Eds.) Fauna i ekologiya nasekomykh Dal'nego Vostoka ("The insect fauna of the Soviet Far East and its ecology"). Far Eastern Branch, Institute of Biology and Pedology, Academy of Sciences, Vladivostok, USSR, P.50–61 (in Russian).
- Krivolutskaya G.O. 1996. [113. Family Scolytidae — bark-beetles.] // In: Lehr P.A. (ed.) Opredelitel' nasekomykh Dal'nego Vostoka Rossii v shesti tomakh. Vol. III. Zhestkokrylye, ili zhuki. Part 3. Vladivostok: Dal'nauka. P.312–373. (In Russian).
- Lindeman G.V. 1993. Vzaimootnosheniya nasekomikh-kxilofagov i listvennih dereviev v zasushlivih usloviyah [Interrelations of xylophagous insects and angiospermous trees in arid habitats]. Moscow: Nauka. 206 pp. (in Russian)
- Murayama J. 1940. Nouvelle note sur les Scolytides du Manchoukuo // Annotationes Zoologicae Japonenses. Vol.19. No.3. P.229–237.
- Murayama J. 1943. Nouvelles espèces des Scolytides (Coléoptères) du Manchoukuo // Annotationes Zoologicae Japonenses. Vol.22. No.2. P.96–100.
- Niisima (Niijima) Y. 1909. Die Scolytiden Hokkaidos unter Berücksichtigung ihrer Bedeutung für Forstschäden // The Journal of the College of Agriculture, Tohoku Imperial University, Sapporo, Japan. Vol.3. Pt.2. P.109–179.
- Niisima Y. 1913. Neuer Borkenkäfer nebst Frasspflanzen // Transactions Sapporo Natural History Society. Vol.5. P.1–6.
- Nobuchi A. 1971. Studies on Scolytidae IX (Coleoptera). Key to the subfamilies, tribes and genera of Japan // Bulletin of the Government Forest Experiment Station. No.238. P.149–164.

- Nobuchi A. 1985. Family Scolytidae. Studies on Scolytidae XXVI // Check-list of Coleoptera of Japan. No.30. P.1–32.
- Schedl K.E. 1958. Zur Synonymie der Borkenkäfer, II. 159. Beitrag // Tijdschrift voor Entomologie. Bd.101. Hf.3–4. S.141–155.
- Semenov A.P. 1902. Novae Scolytidarum species e fauna Rosice et Asiae centralis (Coleoptera) // Russian Entomological Review. Vol.2. P.265–273 (in Latin and Russian).
- Sokanovsky B.V. 1958. Zаметki o zhukakh-koroedakh fauny SSSR (Coleoptera, Ipidae) [Notes on bark beetles in the fauna of the USSR] // Byulletin Moskovskogo Obshchestva Ispytatelei Prirody. Vol.53. No.5. P.37–40 (in Russian).
- Sokanovsky B.V. 1959. Contribution à la connaissance des Scolytides palaeartiques (Col., Ipidae) // Časopis Československé Společnosti Entomologické (Acta Societatis Entomologiae Czechosloveniae). Vol.56. No.3. P.276–278. (In Russian, with French summary).
- Spessivtsev P. 1919a. New bark beetles from the neighbourhood of Vladivostok (East Siberia) // Entomologist's Monthly Magazine. Vol.55. P.246–251.
- Spessivtsev P. 1919b. New bark beetles from Vladivostok: a correction // Entomologist's Monthly Magazine. Vol.55. P.279.
- Stark V.N. 1952. Fauna SSSR. Zhestkokrylye. Tom XXXI. Koroedy. [Fauna of the USSR. Coleoptera. 31. Bark-beetles]. M.-L. 462 pp. (In Russian).
- Wood S.L. 1984. New generic synonymy and new genera of Scolytidae (Coleoptera) // Great Basin Naturalist. Vol.44. No.2. P.223–230.
- Wood S.L. 1986. A reclassification of the genera of Scolytidae (Coleoptera) // Great Basin Naturalist Memoirs. Vol.10. P.1–126.
- Wood S.L. & Bright D.E. 1992. A Catalogue of Scolytidae and Platypodidae (Coleoptera), Part 2: Taxonomic Index // Great Basin Naturalist Memoirs. Vol.13(A). P.1–833; Vol.13(B). P. 835–1553.
- Wood S.L. & Huang F. 1986. A new genus of Scolytidae (Coleoptera) from Asia // Great Basin Naturalist. Vol.46. No.3. P.465–467.