

Notes on Oriental *Scolytus* (Coleoptera: Curculionidae: Scolytinae)

Заметки об ориентальных заболонниках рода *Scolytus* (Coleoptera: Curculionidae: Scolytinae)

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New synonymies in the genus *Scolytus* Geoffroy, 1762 are established: *S. koltzei* Reitter, 1894 = *S. yablonianus* Murayama, 1943 = *S. shanhaiensis* Yin et Huang, 1980; *S. ventrosus* Schevyrew, 1890 = *S. trispinosus* Strohmeier, 1908. *Scolytus kononovi* Kurentsov, 1941 is justified as a distinct species from *S. semenovi* (Spessivtsev, 1919). The synonymy of *S. formosanus* Eggers, 1939 with *S. frontalis* Blandford, 1894 is confirmed.

Установлена новая синонимия в роде *Scolytus* Geoffroy, 1762: *S. koltzei* Reitter, 1894 = *S. yablonianus* Murayama, 1943 = *S. shanhaiensis* Yin et Huang, 1980; *S. ventrosus* Schevyrew, 1890 = *S. trispinosus* Strohmeier, 1908. Подтверждено, что *S. kononovi* Kurentsov, 1941 является самостоятельным видом, а не синонимом *S. semenovi* (Spessivtsev, 1919), а синонимия *S. formosanus* Eggers, 1939 с *S. frontalis* Blandford, 1894 подтверждена.

Key-words: bark beetles, Palaearctics, Coleoptera, Curculionidae, Scolytinae, *Scolytus*, new synonymy

Ключевые слова: короеды, заболонники, Палеарктика, Coleoptera, Curculionidae, Scolytinae, *Scolytus*, новые синонимы

A recently published review of the *Scolytus* Geoffroy, 1762 species in Russia (Petrov, 2013) disagrees with Catalogue of Palaearctic Coleoptera (Knížek, 2011) in the treatment of several species, as in case of *S. transcaspicus* (Eggers, 1922) and *S. schevyrewi* Semenov, 1902, *S. azerbaijanicus* Michalski, 1964 and *S. laevis* Chapuis, 1869, and *S. kononovi* Kurentsov, 1941 and *S. semenovi* (Spessivtsev, 1919). In general we follow synonymies accepted by Petrov (2013) but in order to justify the status of some Far-Eastern *Scolytus* species we studied types of Oriental *Scolytus* species from the collection of J. Murayama (USNM, Washington, cu-

rator Lourdes Chamorro), Chinese species of *Scolytus* from S.L. Wood collection (also in USNM, Washington), and specimens collected in North Korea by Choo Ho-Yul during his PhD studentship in Vladivostok and preserved in the Institute of Biology and Soil Sciences (IBSS, Vladivostok), as well as the collections of A.I. Kurentsov and G.O. Krivolutskaja shared by IBSS (curator Arkadyi S. Lelej) and the Zoological Institute of the Russian Academy of Sciences, St Petersburg (ZISP).

1. *Scolytus koltzei* Reitter, 1894 = *S. yablonianus* Murayama, 1943, **new synonym** = *S. shanhaiensis* Yin et Huang, 1980, **new synonym**. Both the lectotype and the paralectotype (designated by Miloš Knížek) of

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S. yablonianus from the Murayama collection were studied ("Manchoukuo", Yablonia, S. Takagi [leg], 9.V.1939, 2 males) (Murayama, 1943). Currently the Russian geographic name Yablonia in Manchuria is transformed to Yabuli Zhen, old maps shows its location in Northwest China, Heilongjiang Province and modern data give coordinates as 44°56'21''N, 128°36'29''E (longitude and latitude data here and thereafter according to GEOnet Names Server (2016)). The type specimens originate from the locality at the same latitude as southern parts of Russian Primorsky Terr., where *S. koltzei* breeds (Kurentsov, 1941; Krivolutskaja, 1996). *Scolytus shanhaiensis* were collected around the same time, 10.VI.1940, not very far to the south: Liaoning: Gaoling (40°08'44''N, 120°00'29''E) (Yin & Huang, 1980). *S. koltzei* females were not recognized by either Murayama (1943) or Yin & Huang (1980) because these are dissimilar to males, and, unlike males, they have a large tubercle on the second abdominal ventrite. Usually, *Scolytus* male and female abdominal armature is similar in both sexes and, if sexually dimorphic, spines and tubercles are more profoundly developed in males rather than females. *S. koltzei* is a notable exception from this rule. This led Reitter (1913) to a false conclusion and description of the *S. koltzei* female as a distinct species, *S. vexator* Reitter, 1913 (Schedl, 1948). Yin & Huang gave a detailed description of *S. shanhaiensis* based on study of 4 males and figured the male frons. It has very peculiar structure with two tightly packed bundles of short golden hair-like bristles at the epistomal margin and short grey hairs scattered all over the frontal surface. These same male frontal setal patterns are observed in both Murayama's male specimens and in specimens of *S. koltzei* from the Russian Far-East. *Scolytus koltzei* specimens in the ZISP collection originate from linden (*Tilia* spp.) in Primorsky Terr., and also from Central Sakhalin (Bolshaya Tym' River), suggesting that the species may breed on trees other than linden. Apart from specimens

from the Russian Far East, two *S. koltzei* males from the Choo collection in North Korea are preserved in the IBSS collection. One originates from Wagal-bong, Chagando Prov. (40°45'03''N, 126°56'59''E) and the second from Kop'hung, also Chagando Prov. (40°36'14''N, 125°56'48''E), very close to the first trapping location, and also to the type locality of *S. shanhaiensis*. Comparison of males suggests that all three names of Oriental *Scolytus*, are synonyms of *S. koltzei*. This is consistent with fact that *S. yablonianus* was unknown by Yin and Huang (1980) and included into Chinese Scolytinae checklists only for Heilongjiang (Hua, 2002), while *S. koltzei* and *S. vexator* are absent in this list. Both *S. shanhaiensis* and *S. yablonianus* were not indicated for North Korea (Knížek, 2011) from where only *S. koltzei* is known (Choo, 1964; Knížek, 2011). These discrepancies in data about three sympatric morphologically similar *Scolytus* "species" may be resolved taking in mind that only one species, *S. koltzei*, exists in reality.

2. *Scolytus ventrosus* Schevyrew, 1890 = *S. trispinosus* Strohmeier, 1908, **new synonym**. *Scolytus ventrosus* was described by Schevyrew (1890) based on one female specimen from the ZISP collection and the lateral view of abdomen was figured (Schevyrew, 1893). Butovitsch (1929), when revising the Palearctic *Scolytus*, wrote that he observed two females of *S. ventrosus* but did not recognize either *S. trispinosus* or *S. esuriens* Blandford, 1894 from the Russian Far-East. Later, Michalski (1973) figured *S. ventrosus* male and female head of specimens received from G.O. Krivolutskaja (1 male and 2 females) and remarked that the species is extremely rare in continental Far-East and more common on Kunashir Island. In fact, figures of the frontal pubescence by Michalski showed no sexual dimorphism and most probably the series represented three females of "*S. ventrosus*" rather than one male and two females. All specimens determined as *S. ventrosus* from the Russian continental

Far-East are in fact females of *S. trispinosus* while specimens from Kunashir Island belong to *S. esuriens*. Two distinctive features of *S. ventrosus*, large body size and double series of punctures on the second and third elytral interstriae are shared by females of *S. trispinosus* and *S. esuriens*. In contrast to *S. ventrosus*, males of both *S. trispinosus* and *S. esuriens* are well recognizable differing in form of hair brushes on the last abdominal segment. The *S. ventrosus* types are absent in the ZISP collection and are likely lost. Since the description of *S. ventrosus* is not sufficient to separate it from *S. trispinosus*, we propose *S. ventrosus* to be the senior synonym of *S. trispinosus*.

3. *Scolytus kononovi* was described by Kurentsov (1941) from the Southern parts of the Ussuri Terr. from apple (*Malus* sp.) and was later synonymized with *S. semenovi* (Spessivtsev, 1919) which breeds in elms (*Ulmus* spp.) (Schedl, 1948; Wood & Bright, 1992; Krivolutskaja, 1996; Knížek, 2011). The species was recognized by Petrov (2013) as distinct although no reasons were given. Recently long series of both species were collected in Spassk district of Primorsky Terr. by V.N. Kuznetsov. Male genitalia of both species were studied by the authors of this paper and found the male organs of both species to be identical and well agree with drawing of Spessivtsev (1919). However, the profile of second ventrite process is rectangular in *S. kononovi* and rounded in *S. semenovi*, as illustrated by Kurentsov (1941) and is clearly different in the two species. We disagree with Knížek (2011) and instead agree with Petrov (2013) given the presented evidence for the reinstatement of *S. kononovi* Kurentsov, 1941 as a valid species.

4. *S. frontalis* Blandford, 1894 = *S. formosanus* Eggers, 1939 is confirmed. Due to the different geographic origins of the types of these two species, Japan and Taiwan, respectively, we decided to reexamine this synonym proposed first by Schedl (1962) and followed by Knížek (2011). We studied the female lectotype of *S. formosanus* from

the National Museum of Natural History (Washington, DC) with completely abraded vestiture, two paralectotypes, "male type" and "female type" determined by Eggers in Schedl's collection in The Vienna Museum of Natural History (curator Dr. Harald Schillhammer), one paralectotype from Vienna and one from the ZISP and compared them to *S. frontalis* specimens from Japan (Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa; curator Dr. Patrice Bouchard). All these specimens agree in the main diagnostic feature, i.e. in having pronounced frontal vestiture in males with the individual frontal hair-like setae as long as the width of the front.

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