ISSN 0013-8738, Entomological Review, 2025, Vol. 105, No. 1, pp. 53–57. © Pleiades Publishing, Inc., 2025.

The Clown Stink Bug, *Poecilocoris lewisi* (Distant, 1883) (Heteroptera, Scutelleridae) in the South of the Russian Far East

E. V. Kanyukova[a,*], K. A. Ostapenko[a,], T. O. Markova[b,***], and M. V. Maslov[b,****]**

[a] *Far Eastern Federal University, Zoological Museum, Vladivostok, 690091 Russia*
[b] *Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, 690022 Russia*

**e-mail: evkany@mail.ru; **e-mail: kirillostapenko@mail.ru; ***e-mail: martania@mail.ru; ****e-mail: nippon_mvm@mail.ru*

Received January 23, 2025; revised March 28, 2025; accepted March 28, 2025

Abstract—Data on the clown stink bug, *Poecilocoris lewisi* (Distant, 1883) (Heteroptera, Scutelleridae), from the southern Russian Far East are presented. Information on the northern localities of its distribution range is summarized, and a brief overview of its biology is given. The study is based on the collection material and the authors' data for 1999–2024. A map of collection sites in Primorskii Territory is provided. Information on the local plant species that constitute the food supply for the bug—*Fraxinus mandshurica* Rupr., *Syringa wolfii* C.K. Schneid. (Oleaceae), *Juglans mandshurica* Maxim. (Juglandaceae), and *Acer negundo* L. (Sapindaceae)—has been collected. The documented feeding of *P. lewisi* on *Alangium platanifolium* (Siebold & Zucc.) Harms, a plant of the family Alangiaceae DC, is a new contribution to the knowledge of the species' diet.

Keywords: clown stink bug, Heteroptera, Scutelleridae, *Poecilocoris lewisi*, nymphs, Primorskii Territory, *Alangium platanifolium*

DOI: 10.1134/S0013873825010051

The genus *Poecilocoris* Dallas, 1848 comprises about 23 brightly colored species distributed mainly in the Oriental Region, of which 12 species have been listed from the southeastern Palaearctic (Göllner-Scheiding, 2006; Tsai et al., 2011). *Poecilocoris* (*Poecilocoris*) *lewisi* (Distant, 1883), described from Japan, is distributed in Southeast Asia. Kiritshenko (1953) reported it for the south of the Russian Far East. A description of eggs and nymphal instars of *P. lewisi*, the timing of its development, and a list of plants that constitute its food supply were published previously by Kobayashi (1954, 1967). Tsai and co-authors (Tsai et al., 2011) provided a monographic description including the taxonomic position of the species, its diagnosis, variability, biology, and distribution.

The generic name *Poecilocoris* was first mentioned for the Russian Far East (Primorskii Territory) along with a habitus drawing of *P. lewisi* published in a review of bugs from the forest fauna of the Ussuri River valley (however, without the finding locality specified) in the 1950s (Kiritshenko, 1953). Subsequently, a brief description in Russian and a drawing of *P. lewisi*, also without a label indicating the collection site, were made by Mamayeva (1972) as an example of a "tropical, exceptionally rare species" living in Primorskii Territory. Nevertheless, she erroneously attributed the species to the family Pentatomidae. The first precise data on the collection localities and dates of *P. lewisi* in Primorskii Territory were provided by Kanyukova and Ostapenko (2013).

MATERIALS AND METHODS

We conducted our study in Primorskii Territory, Russian Far East (Fig. 1), from April to October during the period of 1999–2024. To confirm the feeding habits of instar V nymphs, we kept them in cages attached to the branches of plants grown under garden conditions.

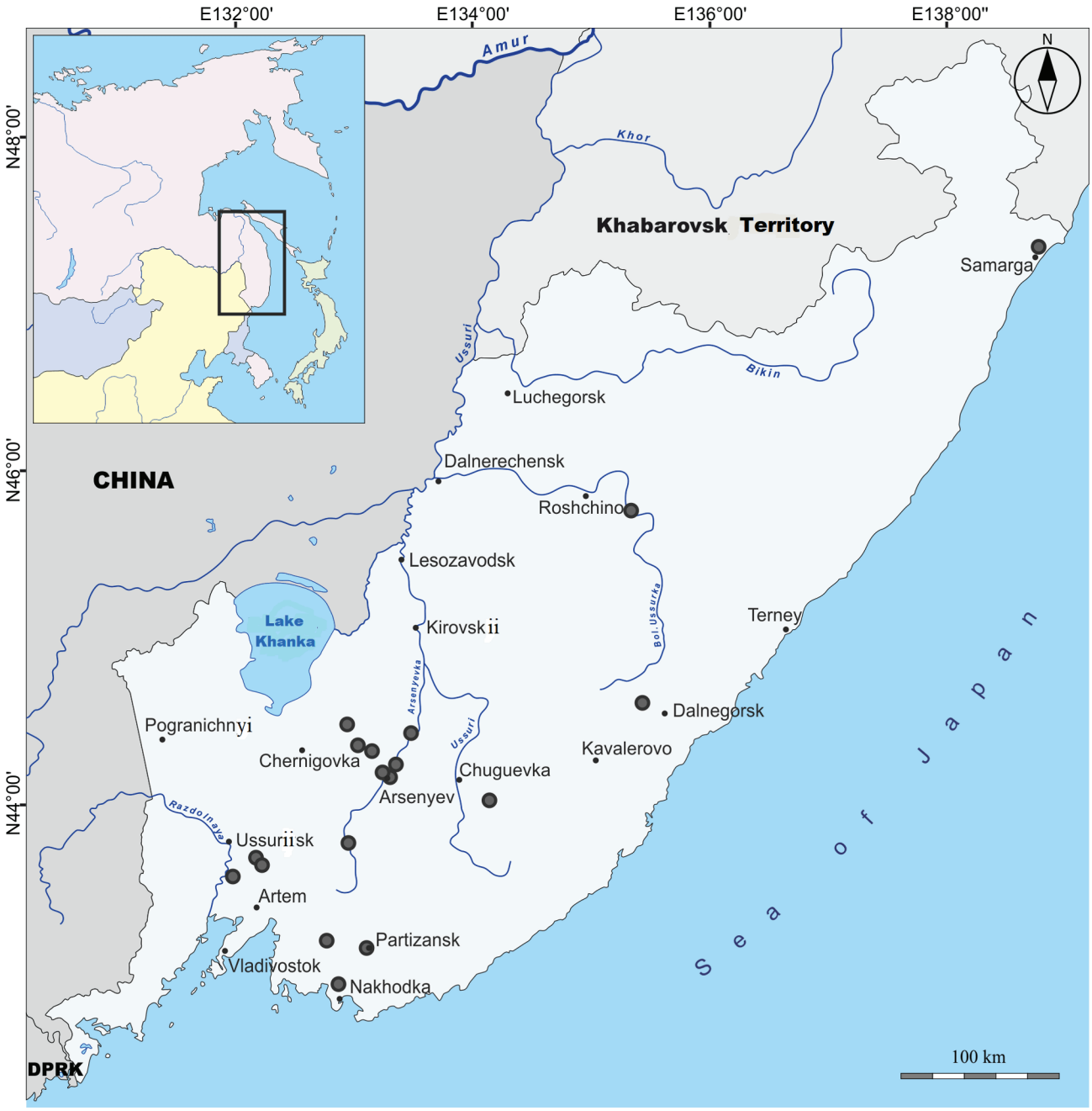

Fig. 1. Localities of *Poecilocoris lewisi* (Distant, 1883) in the south of the Russian Far East.

We have examined the material deposited in the collections of the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZISP); the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far Eastern Branch, Russian Academy of Sciences, Vladivostok, Russia (FSCV) (reg. number 2797657); and the Zoological Museum of the Far Eastern Federal University, Vladivostok, Russia (FEFU). We have also used personal communications of our colleagues about findings of *P. lewisi* and photographs of this bug in its natural habitats.

RESULTS

Poecilocoris lewisi (Distant, 1883)

Material. Russia. *Primorskii Terr.* (see Fig. 1), Terneiskii Distr.: Samarga River estuary, northeastern slope of Sikhote-Alin Mountains (47°14′50″N,

138°48′10″E), 07.VIII.1932 (Prisezhenko), 1 ♀ (ZISP). Krasnoarmeiskii Distr.: Dersu Vill. (45°45′16.6″N, 135°20′29.3″E), 12.VIII.2023 (M.E. Sergeev), 1 ♀ (FEFU). Dal'negorsk Urban Okrug (Iman Uyezd): Taiga Vill. (44°36′41″N, 135°26′09″E), swamp, 13.V.1911 (Shingarev), 1 ♂ (ZISP). Spasskii Distr.: Kalinovka Vill. (44°29′13″N, 132°56′55″E), on *Juglans mandshurica* Maxim., 19–20.VII.2010 (S.N. Ivanov), 3 ♀ (FEFU). Yakovlevskii Distr.: Rublenyi Spring (44°21′41″N, 133°02′15″E), 01.VIII.1999 (K.A. Ostapenko) 1 ♀ (FEFU); Novosysoyevka Vill. (44°14′17″N, 133°21′44″E), VIII.2011 (S.V. Veriga), 1 ♀ (FEFU); Yakovlevka Vill. (44°25′37″N, 133°28′47″E), 15.VIII.1932 (Buldovskii), 1 ♀ (ZISP). Anuchinskii Distr.: Belonogov Spring, Vinogradovka Vill. (43°45′41″N, 132°57′07″E), 16.VII.1929 (A.N. Kiritshenko), 1 ♀ (ZISP). Chuguevskii Distr.: vicinity of the Pravaya Sokolovka River (44°01′17″N, 134°08′55″E), on *Fraxinus mandshurica* Rupr., 15.VI.2015 (M.M. Omel'ko), 1 spm. (photographs; Fig. 2, *1*). Arsenyev Urban Okrug: vicinity of the town of Arsenyev (44°10′N, 133°16′E), on *J. mandshurica*, X.1999 (S.V. Veriga), 1 V instar nymph (FEFU); town of Arsenyev (44°09′16″N, 133°16′02″E), on *Acer negundo* L., 26.VIII.2018 (V.V. Veriga), 11 ♀, 12 instar V nymphs; town of Arsenyev (44°09′08″N, 133°16′55″E), VIII.2003 (G.P. Vasilenko), 1 spm.; vicinity of the town of Arsenyev, 24.VII.2003 (Yan Dorugovsky), 1 spm. (FSCV). Ussuriiskii Urban Okrug: town of Nikol'sk-Ussuriiskii, Kabanii Spring (43°40′28″N, 132°10′23″E), 07.VIII.1931 (T.P. Samoylov), 1 spm. (FSCV); town of Nikol'sk-Ussuriiskii, 16.X.1934 (T.P. Samoylov), 1 instar V nymph (ZISP); Kaymanovka Vill. (43°37′49″N, 132°13′49″E), private garden, in grass, 21.VIII.2017 (T.O. Markova), 1 ♀ (FEFU). Shkotovskii Distr.: Anisimovka Vill. (43°09′42.6″N, 132°46′20.2″E), 22.VIII.2022 (A.A. Klyueva), 1 spm. (photographs). Partizanskii Distr.: vicinity of the town of Partizansk (43°08′N, 133°08′E), 12.VIII.1974 (A. Berezantsev), 1 spm. (FSCV). Nadezhdinskii Distr.: vicinity of the Alekseevka Vill. (43°33′30″N, 131°59′03″E), on *Alangium platanifolium* (Siebold & Zucc.) Harms, 16.IX.2024 (M.V. Maslov), 11 instar V nymphs (Fig. 2, *2*). Nakhodka Urban Okrug: vicinity of the city of Nakhodka (42°53′45″N, 132°52′28″E), on *Syringa wolfii* C.K. Schneid. (Oleaceae), June 01.VI.2019 (R.V. Dudkin), 1 spm. (photographs). A total of 54 specimens, including 29 adults.

Distribution. The species has been listed from the largest part of China, including Taiwan, but excluding the western regions of China and Tibet. In Russia, it has been found in the continental areas of the southern Far East. It has been recorded from the Korean Peninsula and from the Japanese Islands, except for Hokkaido (Kiritshenko, 1953; Kobayashi, 1954, 1967; Göllner-

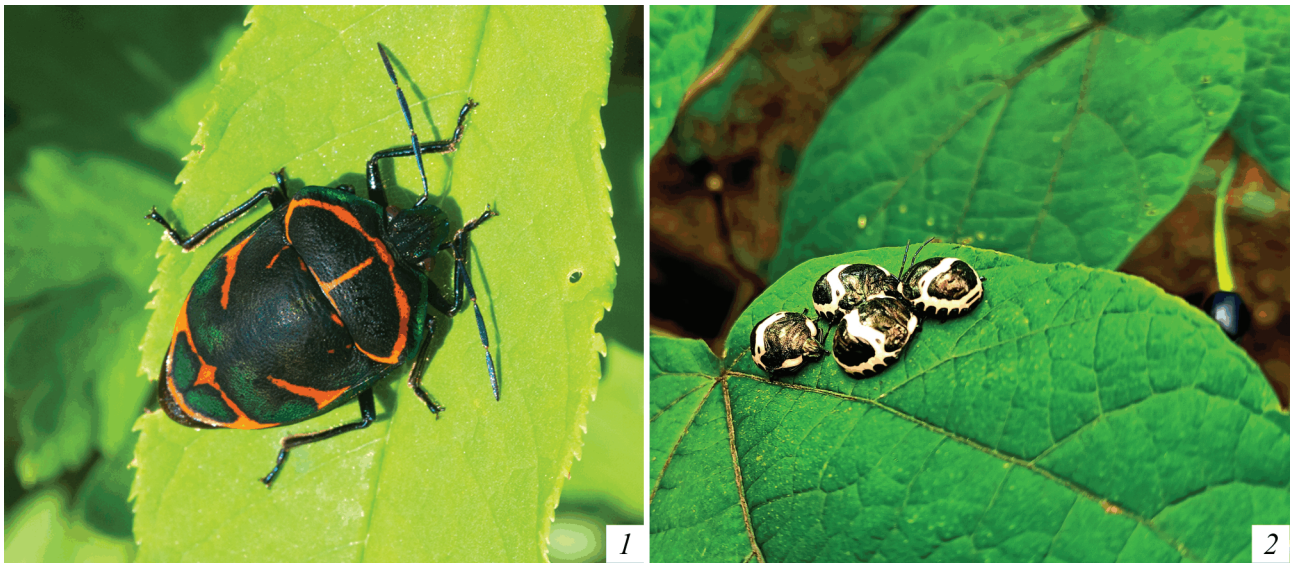

Fig. 2. *Poecilocoris lewisi* (Distant, 1883): (*1*) adult on a leaf of *Fraxinus mandshurica* Rupr., June 15, 2015 (photo by M.M. Omel'ko); (*2*) instar V nymphs on *Alangium platanifolium* (Siebold & Zucc.) Harms at fruiting stage, September 16, 2024 (photo by M.V. Maslov).

Scheiding, 2006; Tsai et al., 2011; Kanyukova and Ostapenko, 2013).

Feeding habits. *Poecilocoris lewisi* is a polyphagous species living in tree crowns and, therefore, rarely found by entomologists. Information about its feeding habits, based on abundant literature data of Japanese and Chinese authors, has been summarized by Tsai and co-authors (Tsai et al., 2011) who have listed the host plants of mainly broadleaf and some coniferous species from 34 families. It is noteworthy that *P. lewisi* is one of the few species of its family reported as associated with the Pinaceae.

In the Russian Far East, according to the published data, the species is found on the Korean pine (Pinaceae) (Kanyukova, 1988). In Primorskii Territory, it has been collected from the following plants: *Fraxinus mandshurica* Rupr., *Syringa wolfii* C.K. Schneid. (Oleaceae), *Juglans mandshurica* Maxim. (Juglandaceae), *Acer negundo* L. (Sapindaceae), and *Alangium platanifolium* (Siebold & Zucc.) Harms (Alangiaceae). Here we provide the first record of *P. lewisi* from a shrub of the family Alangiaceae DC, *Alangium platanifolium*: the bug was found in the only habitat of this rare plant species in Russia (Fedina et al., 2024). T.O. Markova and M.V. Maslov confirmed the feeding of instar V nymphs on the leaf blades of *A. platanifolium* (Fig. 3, *1*, *2*) until mid-October and leaf fall. Adults of *P. lewisi* are found in materials sampled in Russia mainly from late July to mid-August (evidently, during their migrations). K.A. Ostapenko kept an older instar nymph, collected from *Juglans mandshurica* in October 1999, under laboratory conditions on the same plant, but the nymph did not survive till the final molt (Kanyukova and Ostapenko, 2013). In August 2018, K.A. Ostapenko kept a group of 10 older instar nymphs on *Acer negundo*, also under laboratory conditions. In that experiment, two nymphs successfully molted into adults in late October. However, as follows from the data of Kobayashi (1954, 1967) and Tanaka with co-authors (Tanaka et al., 2002), *P. lewisi* overwinters as instars V. A similar case of rare emergence of adults in autumn under laboratory conditions was mentioned by Kobayashi (1967). Tsai and co-authors (Tsai et al., 2011) also discuss emergence of adults in Osaka in August.

CONCLUSIONS

The distribution of *Poecilocoris lewisi* in Russia over the recent years of observations has been clarified. The

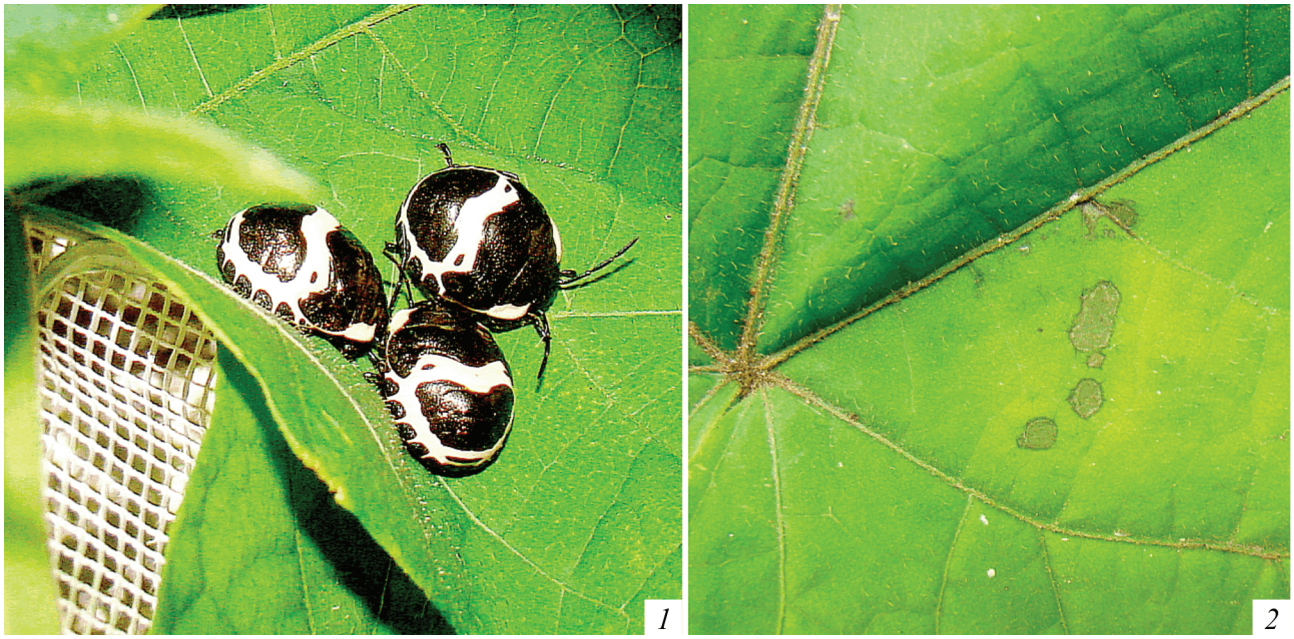

Fig. 3. Confirmed feeding of *Poecilocoris lewisi* (Distant, 1883) on *Alangium platanifolium* (Siebold & Zucc.) Harms: (*1*) instar V nymphs on leaf blades in a cage attached to the plant branch, September 19, 2024; (*2*) punctures and dotted drying-out sites where nymphs have fed, September 29, 2024 (photo by M.V. Maslov).

western point of its range is located in Nadezhdinskii District, vicinities of the Alekseevka Village (43°33′30″N, 131°59′03″E). The northernmost location is known in the continental part of Primorskii Territory on the western slope of the Sikhote-Alin: Krasnoarmeyskii District, Village of Dersu (45°45′16.6″N, 135°20′29.3″E). In the northeast, the bug is found up to the north-eastern slope of Sikhote-Alin Mountains (47°14′50″N, 138°48′10″E). The eastern localities lie in river valleys: Rudnaya River (44°36′41″N, 135°26′09″E) and Pravaya Sokolovka River (44°01′17″N, 134°08′55″E). The southern point is located in the vicinity of the city of Nakhodka (42°53′45″N, 132°52′28″E). First data on the feeding of *P. lewisi* on *Alangium platanifolium* (Siebold & Zucc.) Harms have been added.

ACKNOWLEDGMENTS

We are deeply grateful to B.A. Korotyaev (Zoological Institute, Russian Academy of Sciences, St. Petersburg) for his help and advice. We would like to thank M.M. Omel'ko, R.V. Dudkin (Vladivostok), and A.A. Klyueva (Kemerovo) for providing the photographic material, the collectors S.V. Veriga, S.N. Ivanov, and M.E. Sergeev (Vladivostok) for the additional material from new localities, and A.D. Malyk (Vladivostok) for active assistance in conducting field studies. Special thanks are also due to E.P. Shvetsov (Vladivostok) for translating this paper into English, and Luke Bunker (Washington, DC) for its editing.

FUNDING

The study was carried out within the framework of the State assignment from the Ministry of Science and Higher Education of the Russian Federation (no. 124012200183-8).

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Statement on the welfare of animals. All applicable international, national, and institutional guidelines for the care and use of animals were followed. All procedures performed in studies involving animals were in accordance with the ethical standards of the institution or practice at which the studies were conducted.

CONFLICT OF INTEREST

The authors of this work declare that they have no conflicts of interest.

REFERENCES

Fedina, L.A., Maslov, M.V., Malysheva, S.K., Nakonechnaya, O.V., and Markova, T.O., Natural populations of the rare medicinal species *Alangium platanifolium* (Alangiacae) in Russia, *Biol. Bull.*, 2024, vol. 51, no. 2, p. 472. https://doi.org/10.1134/S1062359023605189

Göllner-Scheiding, U., Family Scutelleridae Leach, 1815 – shield bugs, in *Catalogue of the Heteroptera of the Palaearctic Region*, Vol. 5, *Pentatomomorpha II*, Aukema, B. & Rieger, Chr., Eds., Amsterdam: The Netherlands Entomological Society, 2006, p. 190. https://doi.org/10.1134/S1062359023605189

Kanyukova, E.V., Family Scutelleridae, in *Opredelitel' nasekomykh Dal'nego Vostoka SSSR* (Keys to Insects of the Far East of the USSR), Vol. 2: *Ravnokrylye i poluzhestkokrylye* (Homoptera and Hemiptera), Lehr, P.A., Ed., Leningrad: Nauka, 1988, p. 915.

Kanyukova, E.V. and Ostapenko, K.A., New and little known species of Heteroptera from Primorsky Krai, *Amurian Zool. J.*, 2013, vol. 5, no. 4, p. 405.

Kiritshenko, A.N., True bugs—Hemiptera, in *Zhivotnyi mir SSSR* (Animal World of the USSR), Vol. 4: *Lesnaya zona* (Forest zone), Pavlovskii, E.N. and Vinogradov, B.S., Eds., Moscow, Leningrad: Akademiya Nauk SSSR, 1953, p. 486.

Kobayashi, T., The developmental stages of some species of the Japanese Pentatomoidea (Hemiptera), *Trans. Shikoku Entomol. Soc.*, 1954, vol. 4, no. 4, p. 63.

Kobayashi, T., Developmental stages of *Poecilocoris* and its allied genera of Japan (Hemiptera: Scutelleridae). (The developmental stages of some species of the Japanese Pentatomoidea, XVII), *Trans. Shikoku Entomol. Soc.*, 1967, vol. 9, no. 3, p. 86.

Mamayeva, L.S., *Polevaya praktika po zoologii bespozvonochnykh v Primorskom krae* (Field Practice on Invertebrate Zoology in Primorskii Territory), Vladivostok, 1972.

Tanaka, S.I., Imai, C., and Numata, H., Ecological significance of adult summer diapause after nymphal winter diapause in *Poecilocoris lewisi* (Distant) (Heteroptera: Scutelleridae), *Appl. Entomol. Zool.*, 2002, vol. 37, no. 3, p. 469. https://doi.org/10.1303/aez.2002.469

Tsai, J.-F., Rédei, D., Yeh, G.-F., and Yang, M.-M., *Jewel Bugs of Taiwan (Heteroptera: Scutelleridae)*, Taiwan: National Chung Hsing University, 2011.