



The type material of spider wasps (Hymenoptera, Pompilidae) deposited in the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Russian Academy of Sciences, Vladivostok, Russia

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Abstract

The type material of spider wasps deposited in the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia is catalogued. In total, this includes 305 primary type specimens (31 holotypes and 274 paratypes) belonging to 62 species and 1 subspecies, described between 1962 and 2019 from Russia, Tajikistan, China, South Korea, Japan, Laos, Indonesia, and Sri Lanka. All 31 holotypes are illustrated with color photographs and black-and-white drawings. Photographs of the habitus, head, hypopygium and genitalia of three holotypes and photographs of the habitus and head of 23 holotypes are presented for the first time. References to the original description, type localities, current status, and distribution of taxa are given. Data on the labels of holotypes and paratypes with clarifications and English translations are provided.

Key words: Ceropalinae, Pepsinae, Pompilinae, Palaearctic, Oriental Region, holotype, paratype

Introduction

The collection of spider wasps deposited in the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia (former the Institute of Biology and Soil Science) currently comprises more than 25000 specimens collected during past 50 years mainly from Russia (European part, Caucasus, Ural, Siberia, and Far East), Ukraine, Belorussia, Kazakhstan, Turkmenistan, Uzbekistan, and Japan. Some materials originated from Kyrgyzstan, China, South Korea, Thailand, Indonesia, Sri Lanka, Tunisia, Mexico, and the USA. In total, there are 305 primary type specimens in the collection. Of these, 31 are holotypes and 274 are paratypes belonging to 62 species and 1 subspecies. Within 63 taxa, 61 are currently valid. The taxa were discovered in the period from 1962 to 2019 by the following authors: Lelej, A.S. (30 taxa); Loktionov V.M. and Lelej A.S. (21); Lelej A.S. and Loktionov V.M. (3); Loktionov V.M., Lelej A.S., and Xu Z.-F. (2); Loktionov V.M., Lelej A.S., and Liu J.-X. (1); Shimizu A. and Ishikawa R. (2); Ishikawa R. (1); Kochetkov D.N. and Loktionov V.M. (1); Shimizu A. (1); Wahis R. (1). Most primary type specimens were collected in Russia (south of European part, Eastern and Western Siberia, Far East), with some from Tajikistan, China (Yunnan, Guangdong, Hainan), South Korea, Japan (Hokkaido, Honshu), Laos, Indonesia (Lombok), and Sri Lanka.

This paper treats the type material (31 holotypes and 274 paratypes) of 62 species and 1 subspecies of spider wasps. Photographs of the habitus, head, hypopygium, and genitalia for three holotypes (*Arachnospila eoabnormis* Lelej, 1995, *Evagetes sikhotealinensis* (Lelej, 1990), *Poecilagenia shimizui* Lelej, 2000), and photographs of the habitus and head for 23 holotypes (*Agenioideus pacificus* Lelej, 1994, *A. udegeicus* Lelej, 1990, *Anoplius sachalinensis* Lelej, 1994, *A. sundukovi* Loktionov & Lelej, 2014, *A. toyohei* Loktionov & Lelej, 2014, *Arachnospila kasparyani* Loktionov & Lelej, 2015, *A. kurentzovi* Lelej, 1995, *A. kurzenkoi* Lelej, 1995, *A. maxim* Loktionov & Lelej, 2015, *A. moczari* Loktionov & Lelej, 2015, *A. orientausa* Loktionov & Lelej, 2011, *A. rasnitsyni* Loktionov & Lelej, 2011, *A. scythia* Loktionov & Lelej, 2015, *A. sibirica* Loktionov & Lelej, 2015, *A. tobiasi* Loktionov & Lelej, 2011, *A. wolffi* Lelej, 1995, *A. zonsteini* Loktionov & Lelej, 2011, *Auplopus mama* Loktionov & Lelej, 2014, *A.*

mandshuricus Lelej, 1990, *Deuteragenia lehri* Loktionov & Lelej, 2014, *Episyron kurilense* Lelej, 1990, *Evagetes orientalis* Lelej & Loktionov, 2009, *Kuriloagenia ermolenkoi* Loktionov & Lelej, 2014, *Priocnemis sugonjaevi* Lelej & Loktionov, 2015) are presented for the first time.

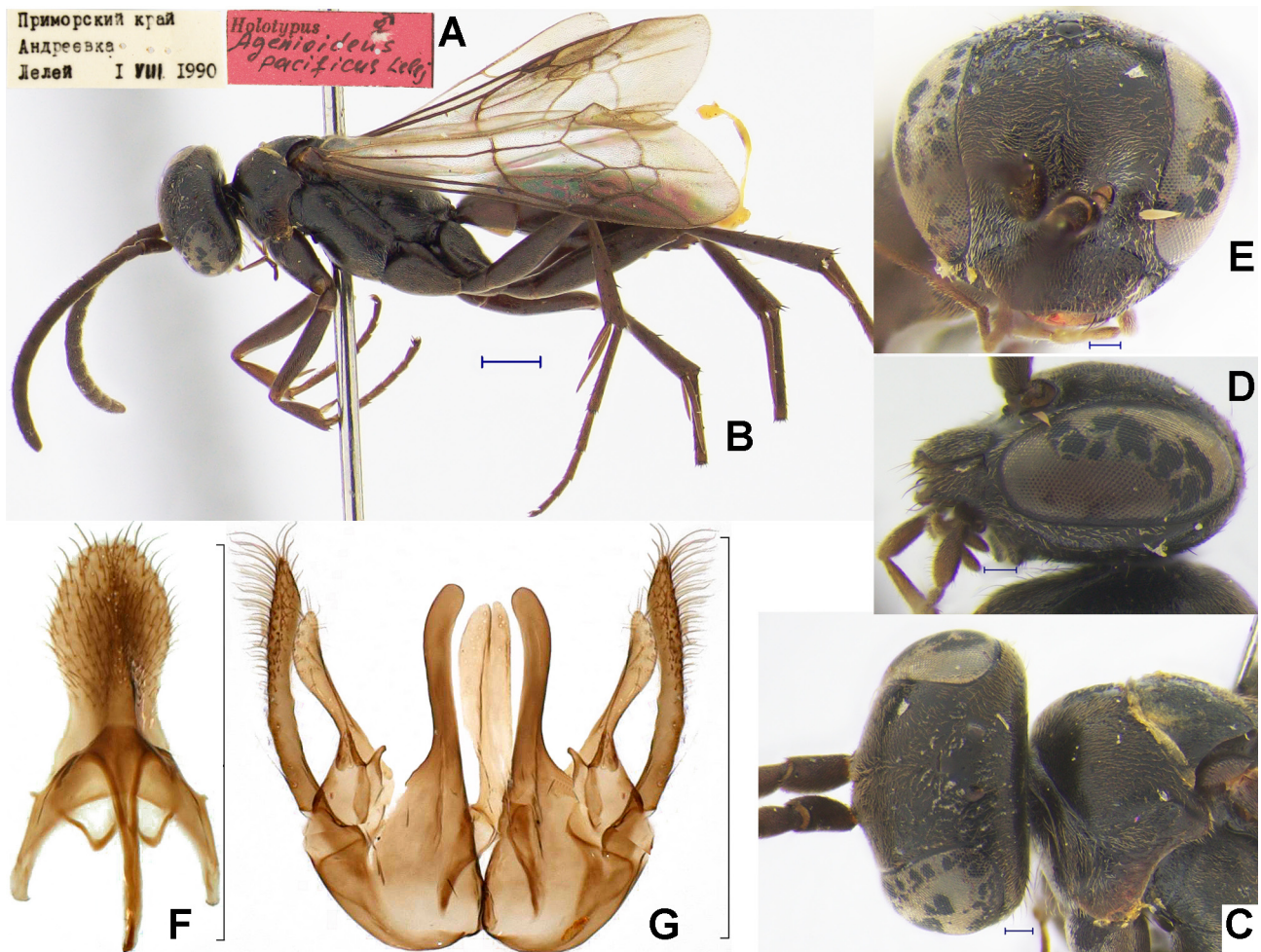


FIGURE 1. *Agenioideus pacificus* Lelej, 1994, ♂, holotype. **A.** Labels. **B.** Habitus, lateral view. **C.** Head, dorsal view. **D.** Head, lateral view. **E.** Head, frontal view. **F.** Hypopygium and sternum 7, ventral view. **G.** Genitalia, ventral view. Scale bar: 0.5 mm for B, F, G; 0.1 mm for C, D, E. F and G from Loktionov & Lelej 2014.

Materials and methods

The classification and current taxon status follow Loktionov & Lelej 2017 and Shimizu *et al.* 2018. Taxa are arranged in alphabetic order according to their original combinations. Each entry includes: the complete reference to the original description, including the original combination and spelling of the name and the author, year and page of description, as well as, described sex; information on the type locality; listed holotype and(or) paratype(s); current status of taxon; distribution; remarks.

The label data are given in their original language. The data of each label within one specimen are separated by two slashes (//). Lines in each label are separated by a single slash (/). Square brackets within lines of a label are used for decoding of abbreviations in their original language (for example: "пос.[ёлк]" which means "vil.[lage]"), for English translations of additional information (for example: "на бузине с колониями тлей [on elderberry with aphid colonies]), for clarification of information (for example: "1.VII.[19]75" which clarifies a century in the date of collecting). Square brackets at the end of geographical labels are used for English translations given in a unified style, for example "Приморский край / Андреевка / Лелей I VIII 1990 [Russia, Primorskii Terr., Andreevka, 1.VIII.1990 (A. Lelej)]". Strikethrough words (for example "~~Лелей~~") on labels indicate that the label was modified by a pen when the pinned specimen was labeled. Strikethrough words should be ignored.

Each holotype is illustrated with color photographs from several angles: the total body in lateral or dorsal view; the head in frontal, dorsal and lateral view; the genitalia of males in ventral view; the hypopygium of males in ventral view or in ventral and lateral views; all labels (from top to bottom) are placed side by side from left to right or from the top to down. Original photographs were taken with a stereomicroscope Olympus SZX16 and digital camera Olympus DP74, and stacked using Helicon Focus software. Other photographs and drawings are borrowed from previous papers of the author, references for which are given in legends of figures. The final illustrations were post-processed for contrast and brightness using Adobe® Photoshop® software.

Nominal names arranged in alphabetic order according to their original combinations

Agenioideus (Agenioideus) pacificus Lelej, 1994

(Fig. 1)

Agenioideus (Agenioideus) pacificus Lelej in Lelej *et al.* 1994: 140, ♀ ♂.

Type locality. Primorskii Terr. (Russia), South Korea.

Holotype (♂). Приморский край / Андреевка / Лелей I VIII 1990 [Russia, Primorskii Terr., Andreevka, 1.VIII.1990 (A. Lelej)] // Holotypus / *Agenioideus / pacificus* Lelej

Paratypes (13 ♀, 15 ♂). 1 ♀: Приморье / пос.[ёлк] Анисимовка / 1.VII.[19]75 Березанцев [Russia, Primorskii Terr., Anisimovka, 1.VII.1975 (Berezantzev)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 1 ♀: Приморье / 7 км В Хасана / Лелей 24 VIII.1977 [Russia, Primorskii Terr., 7 km E Khasan, 24.VIII.1977 (A. Lelej)] // на бузине / с колониями тлей [on elderberry with aphid colonies] // *Agenioideus* ♀ / *cinctellus* / Lelej det. (Spin.) // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 1 ♀: Барабаш-Левада / Приморский кр.[ай] / Лелей 29VI [1]978 [Russia, Primorskii Terr., Varabash-Levada, 29.VI.1978 (A. Lelej)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 1 ♀: Приморье / окр.[естности] Преображения / Романькова / 30 VII [1]979 [Russia, Preobrazhenie, 30.VII.1977 (T. Romankova)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 1 ♀: Приморье / 7 км В Хасана / Голубиный Утес / 8.IX.[19]82 Лелей [Russia, Primorskii Terr., 7 km E Khasan, Golubiny Cliff, 8.IX.1982 (A. Lelej)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 2 ♂: Приморский кр.[ай] / Горнотаежное / Будрис 23 VII 1983 [Russia, Primorskii Terr., Gornotaezhnoe, 23.VII.1983 (Budris)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 2 ♂: Приморье / Уссурийский р-н[район] / ГТС, 26.VII.1983 / Будрис [Russia, Primorskii Terr., Gornotaezhnoe, 26.VII.1983 (Budris)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 1 ♂: Анисимовка / Приморский кр.[ай] / Лелей 3 VIII [1]983 [Russia, Primorskii Terr., Anisimovka, 3.VIII.1983 (A. Lelej)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 2 ♂: Приморье / Шкотовский р-н[район] / Анисимовка / 3.VIII.[19]83 Будрис [Russia, Primorskii Terr., Anisimovka, 3.VIII.1983 (Budris)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 1 ♀: Приморье / Шкотовский р-н[район] / Анисимовка / 6.VIII.[19]83 Будрис [Russia, Primorskii Terr., Anisimovka, 3.VIII.1983 (Budris)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 1 ♂: Анисимовка / Приморский кр.[ай] / Лелей 11 VII [1]984 [Russia, Primorskii Terr., Anisimovka, 11.VII.1984 (A. Lelej)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 1 ♂: Приморский край, 20 км / ЮВ Барабаш-Левады / 5.07.1986 А. Лелей [Russia, Primorskii Terr., 20 km SE Varabash-Levada, 5.VII.1986 (A. Lelej)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 1 ♀: Барабаш-Левада / Приморский кр.[ай] / Лелей 8VII [1]986 [Russia, Primorskii Terr., Varabash-Levada, 8.VII.1986 (A. Lelej)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 1 ♂: Приморский край / окр.[естности] Высокогорска / 28.07.1986 Н. Курзенко [Russia, Primorskii Terr., Vysokogorsk, 28.VII.1986 (N. Kurzenko)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 1 ♂: Приморский край, р.[ека] Джи- / гитовка, 20 км С Плас- / туна, 30.07.1986 / Н. Курзенко [Russia, Primorskii Terr., 20 km N Plastun, Dzhigitovka River, 30.VII.1986 (N. Kurzenko)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 1 ♂: Приморский край / р.[ека] Усури, Техменево / Лелей 4 VIII 1986 [Russia, Primorskii Terr., Tehmenevo, Ussuri River, 4.VIII.1986 (A. Lelej)] // Paratypus ♂ / *Agenioideus / pacificus* Lelej. 1 ♀: Приморский край / Лазовский зап.[оведник] / 10 км 3 Преображен.[ия] / Лелей 16 VIII 1986 [Russia, Primorskii Terr., 10 km W Preobrazhenie, Lazovsky Nature Reserve, 16.VIII.1986 (A. Lelej)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej // *Evarcha / albaria* ♂ / Kurentshikov d. [the paratype pinned with a spider]. 1 ♀: Приморский край / Дмитриевка / Немков 20.VIII 1986 [Russia, Primorskii Terr., Dmitrievka, 20.VIII.1986 (P. Nemkov)] // Paratypus ♀ / *Agenioideus / pacificus* Lelej. 1 ♀: Приморский край / Уссурийский зап.[оведник] / Будрис 27.VIII 1986 [Russia, Primorskii Terr., Ussuri Nature Reserve, 27.VIII.1986 (Budris)] // Paratypus ♀ /