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A new remarkable species in the *Chrysis ignita* group (Hymenoptera, Chrysididae) and an overview on Central Asian species, with new synonymies

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A b s t r a c t : *Chrysis lyubae* nov.sp., from Kazakhstan, is described. It belongs to the *Chrysis ignita* species group, *C. ruddii* subgroup. It is easily recognizable by its unique colour pattern, rosy with largely purplish to black vertex and mesoscutum, and by several morphological features, such as shape of apical teeth and body punctation. An annotated checklist of the Central Asian species of the *Chrysis ignita* group is given, with new distributional data and six new synonymies: *Chrysis castigata* LINSENMAIER, 1959 = *Chrysis viridodentata* TARBINSKY, 2000 syn.nov.; *Chrysis csikiana* MOCSÁRY, 1912 = *Chrysis crebropilosa* TARBINSKY, 2000 syn.nov.; *Chrysis dentipes* RADOSZKOWSKI, 1877 = *Chrysis anastasiae* TARBINSKY, 2000 syn. nov.; *Chrysis inaequipunctata* BISCHOFF, 1910 = *Chrysis talassica* TARBINSKY, 2000 syn.nov.; *Chrysis regalis* MOCSÁRY, 1912 = *Chrysis korneevi* TARBINSKY, 2000 syn.nov.; *Chrysis uljanini* RADOSZKOWSKI, 1877 = *Chrysis ignita* var. *fulgidaeformis* BISCHOFF, 1930 syn.nov..

Key words : Chrysidinae, Kazakhstan, new species, new synonymies.

Introduction

The *Chrysis ignita* species group is the most speciose group in the genus *Chrysis* LINNAEUS, 1761, including more than a hundred known species (KIMSEY & BOHART 1991). It is considered as being the most difficult and taxonomically challenging group (SOON & SAARMA 2011); indeed, most of the Western species were differently treated by various authors, because of the lack of distinctive, widely accepted morphological features, in particular for males (e.g. KUNZ 1994; LINSENMAIER 1997; VAN DER SMISSEN 2010; PAUKKUNEN et al. 2015). Therefore, it is often considered as a large group of closely related, occasionally indistinguishable sibling species (ORLOVSKYTĚ et al. 2015). The *Chrysis ignita* species group is quite widespread, seemingly absent only from Australasia, with the largest number of species in the Palaearctic region (KIMSEY & BOHART 1991). No general revision on this group exists, though some regional works with keys have been published (LINSENMAIER 1959, 1997; BOHART & KIMSEY 1982; MORGAN 1984; KUNZ 1994; TARBINSKY 2000; ROSA 2006; VAN DER SMISSEN 2010; PAUKKUNEN et al. 2015, WIŚNIEWSKI 2015). The most recent and complete identification key was published by PAUKKUNEN et al. (2015). This work deals especially with the North European species, yet it includes the majority of the species known to occur in Europe and it is valid for most of the European countries.

In the last years, two studies on phylogenetic analysis of the Northern European species

were published (SOON et al. 2014; ORLOVSKYTĚ et al. 2015), which supported the specific status of the majority of the currently recognised species in this group (PAUKKUNEN et al. 2015) and lead the description of new cryptic and sibling species (*Chrysis borealis* PAUKKUNEN, ØDEGAARD, SOON, 2015; *Chrysis parietis* BUDRYS, 2015, and *Chrysis horridula* ORLOVSKYTĚ, 2015). Moreover, phylogenetic analyses by SOON et al. (2014) confirmed that most of the morphologically recognizable species form well-delineated clades. ORLOVSKYTĚ et al. (2015) included a morphometric species identification key applying linear discriminant equations and assessed the trophic differentiation using data on host preferences of ten species reared from trap-nests. They proved that most of the species are specialists, selecting only a single or a few taxonomically related host species of potter wasps (Hymenoptera: Vespidae: Eumeninae), as contemporarily demonstrated by PÄRN et al. (2015) for several other species of the *Chrysis ignita* group in Estonia.

Materials and methods

Specimens were examined and described under a Carton Togonal SCZ stereomicroscope. Photographs of the newly described species were taken with Nikon D-3400 connected to the stereomicroscope Togonal SCZ and stacked with the software Combine ZP. Morphological terminology follows KIMSEY & BOHART (1991). Abbreviations used in the descriptions as follows: F1, F2, F3, etc. = flagellomere 1, 2, 3 and so on; MOD = midocellus diameter; MS = malar space, the shortest distance between base of the mandible and the lower margin of compound eye; OOL = the shortest distance between posterior ocellus and compound eye; P = pedicel; POL = the shortest distance between posterior ocelli; PPW = propodeum posterior width.

The following abbreviations are used in the text: cat. (catalog), descr. (description), distr. (distribution), mis. (misidentification), syn. (synonym), tax. (taxon).

Depositories:

- BZLBiologiezentrum, Linz, Austria
 IBPB.....Institute of Biology and Pedology of the National Academy of Sciences of Kyrgyzstan, Bishkek, Kyrgyzstan
 MNHU.....Natural History Museum of the Humboldt-University, Berlin, Germany
 NMLS.....Natur Museum Luzern, Switzerland
 ZINZoological Institute, St. Petersburg, Russia

Subfamily *C h r y s i d i n a e*

Genus *C h r y s i s* LINNAEUS, 1761

D e s c r i p t i o n : LINNAEUS, 1761: 414.

T y p u s g e n e r i s : *Sphex ignita* LINNAEUS, 1758.

***Chrysis lyubae* nov.sp. (Figs 3, 4-8)**

Material examined: Holotype ♀, Kazakhstan: 20 km N [possibly E?] Kegen, 43.0°N – 79.0°E, 24.v.1994, leg. K. Deneš jr. (type deposited at BZL).

Diagnosis: Despite the *Chrysis ignita* group includes more than a hundred species, only a few are entirely red or red with pink and purple colours: *Chrysis mane* SEMENOV, 1912 (known from China: Gansu, Qinghai, Inner Mongolia; Russia: Eastern Siberia, Buryatia, new record, Fig. 1, 13-16), *C. kukunorensis* SEMENOV, 1967 (China: Qinghai, Gansu, Fig. 17), *C. matutina* SEMENOV, 1967 (China: Gansu, Hubei, Fig. 18), *C. violenta* LINSSENMAIER, 1968 (North India, Pakistan, Tibet, Nepal, Fig. 2, 9-14), *C. violenta ultramonticola* LINSSENMAIER, 1968 (Tibet, Nepal). Three of these, *Chrysis lyubae* **nov.sp.**, *C. violenta* and *C. violenta ultramonticola* belong to the *Chrysis ruddii* subgroup, for short pronotum, its length less than one fourth of its width; F1 fully black or largely non-metallic; scapal basin with dense, appressed, white pubescence. *Chrysis lyubae* **nov.sp.** can be easily recognised from *C. violenta* and *C. violenta ultramonticola* by its colour pattern with metasoma fully purple-rosy, without contrasting blue-purple bands on the second and third tergum; vertex, mesoscutum and tegulae dark purple, contrasting with the rest of red-rosy mesosoma; mesoscutum with a median rosy spot; *C. kukunorensis*, *C. mane* and *C. matutina* are conversely fully red and museum specimens are often golden to greenish. *Chrysis lyubae* **nov.sp.** can be morphologically separated by the M-like TFC (vs. straight in *C. violenta*); short malar spaces (vs. elongated); punctures on scapal basin smaller than punctures close to eye (vs. punctures of the same size); metasoma completely dull, with dense coriaceous microsculpture between punctures (vs. dense large punctures in *C. violenta* and dense small punctures in *C. violenta ultramonticola*); apical teeth of the third metasomal tergum short, triangular, with central interval narrower and more angulate (vs. apical teeth longer, the central interval wider); black spots on the second sternum longer, with a reduced violet tint in between and apically (vs. second sternum largely metallic red, with smaller black spots). *Chrysis kukunorensis*, *C. mane* and *C. matutina* are separated by elongated shape of metasoma in dorsal view (see also pictures in ROSA et al. 2017a), and differently shaped apical margin of the third tergum (Fig. 12, 16–18).

Description:

Body length 10.0 mm. Fore wing length 7.0 mm. Female. OOL = 2.3 MOD; POL = 1.2 MOD; MS = 1.0 MOD; relative length of P: F1: F2: F3 = 1.0: 2.1: 1.4: 1.3.

Head: In full face view, length 1.5 mm, width 2.7 mm. Apex of clypeus slightly arched; TFC strong, M-like, its distal margin ending less than 1.0 MOD far to eye margin; scapal basin with very dense and fine punctation, transversally subcontiguous; punctures on face covered with dense, appressed, silvery setae; punctures on vertex and occiput small, dense. Malar space 1.0 MOD long, as long as one third of F1. Subantennal distance less than 1.0 MOD. Subgenal carina complete, extending to mandible joint. Mandible without subapical tooth; in lateral view, mandible relatively thick, its sides gradually converging towards apex and basally.

Mesosoma: Length 3.5 mm; width (PPW) 2.4 mm. Pronotum with large anteromedian groove; punctation deep, coarse, uneven, and mostly contiguous. Mesoscutum with dense, small to medium-sized punctures, larger basally among notauli, with very narrow polished interstices; lateral area of mesoscutum with scattered punctures and tiny dots on polished interstices; notauli complete and parapsidal lines hardly visible medially;

notauli with deep, round pits, decreasing from posterior to anterior end. Mesoscutellum with irregular, double punctation, with smaller punctures at sides and posteriorly. Metanotum with larger, subreticulate punctures of different size; on anterior margin with a row of elongate foveae. Mesopleuron with episternal sulcus formed by deep and large foveae. Propodeal teeth large, hardly divergent, pointing backwards.

Metasoma: Length 4.6 mm. T1 with double punctures, larger and scattered medially, with tiny punctures on interstices. T2 antero-medially densely punctured, with uneven punctures and tiny punctures on interstices; punctures scattered posteriorly, with larger polished interstices a few tiny punctures. T3 with small, even, very dense punctures, without polished interstices, covering the whole tergum, including post-pit row; pits of the pit row small, round and deep; apical teeth short, triangular, pointed, subequal in length, and with similar indenture, the median one less wider and more arcuate. Median longitudinal carina hardly visible on T2 and T3. Black spots on S2 large, elongate, medially separated (about 1 MOD) (Fig. 7).

Colouration: Red-rosy. Head, with vertex and occiput entirely dark violet; pronotum laterally with larger punctures with black bottom; mesoscutum dark violet to black, with a medial, rosy spot; tegulae rosy anteriorly and dark violet to black posteriorly. Second and third metasomal tergum dorsally purplish. Second metasomal sternum basally and third one entirely black; first sternum partly and second one medially purplish. Mandibles dark brown, basally red-rosy. Scape and pedicel metallic rosy, flagellomeres black. Legs rosy, hind femur and tibia black on inner side; tarsi brown, darker on the last tarsomere. Wings hyaline on outer margins, distinctly brownish from medial to discoidal cell.

Vestiture: Pubescence on vertex and dorsally on mesosoma dense, moderately long (1.0 MOD), with erect and whitish or slightly brown setae; metasoma laterally with short, erect setae; on femora and tibiae with sparse, erect and short setae, longer ventrally on femora.

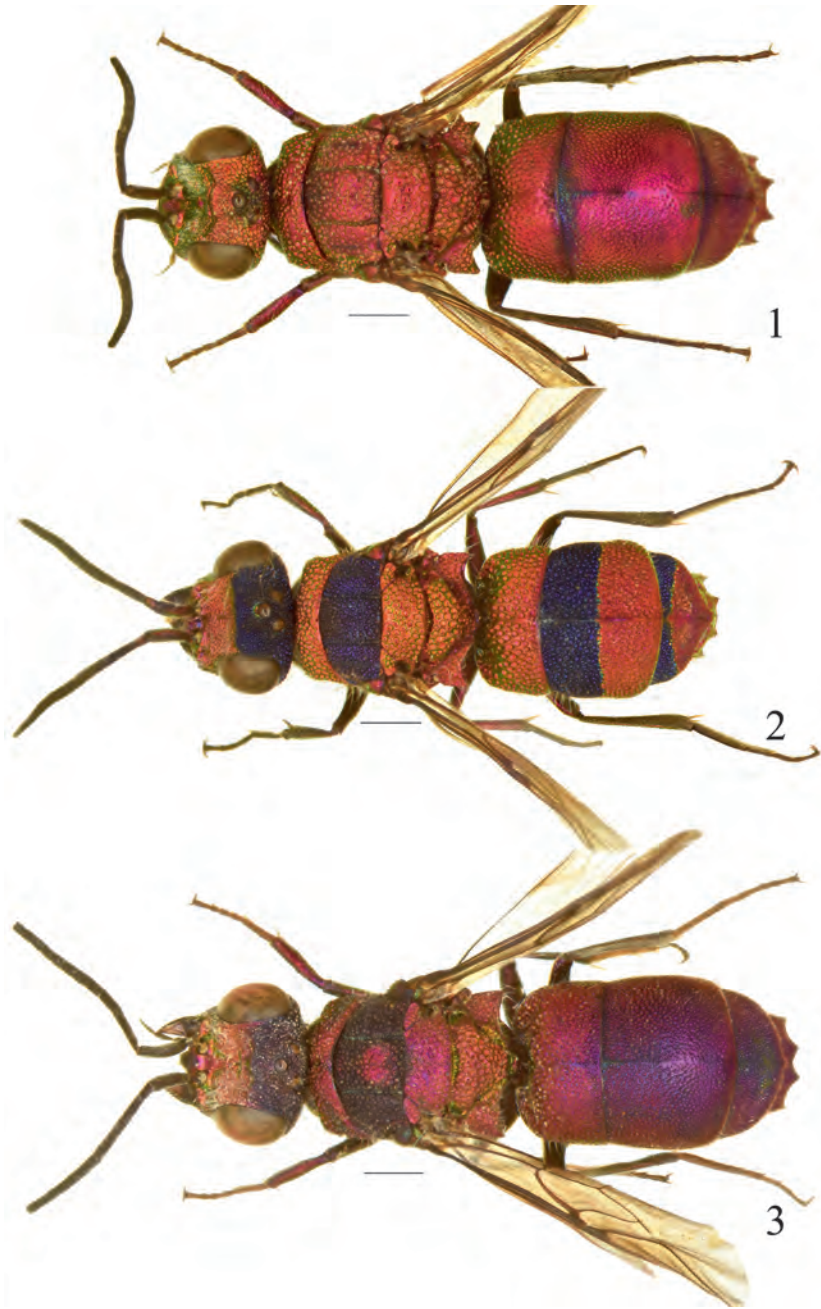
Male. Unknown.

D i s t r i b u t i o n : Kazakhstan.

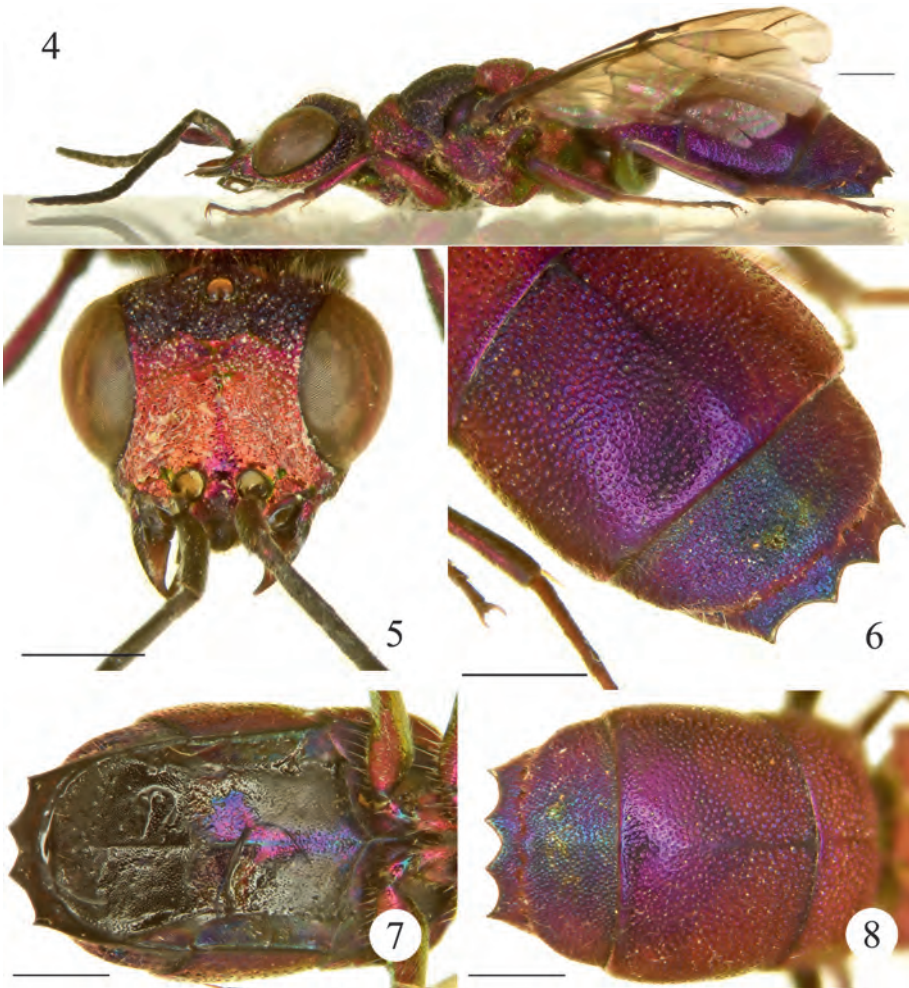
E t y m o l o g y : The specific epithet *lyubae* (feminine name in genitive case) is named after my wife Lyuba Zaytseva (Bernareggio, Italy) in recognition of his continuous help in my study of cuckoo wasps.

D i s c u s s i o n : Currently thirty-four species of the *Chrysis ignita* group are known for Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) (DU BUYSSON 1896; LINSENMAIER 1959, 1997; MOCSÁRY 1912a, 1912b; RADOSZKOWSKI 1889; ROSA 2018, 2019; ROSA et al. 2017a, 2017b, 2017c, 2017d, 2017e; SEMENOV 1903, 1912, 1967; SEMENOV & NIKOL'SKAYA 1954; TARBINSKY 1996, 2000; VINOKUROV, 2006). A few of them are also known for the Chinese Xinjiang, e.g. *Chrysis csikiana* MOCSÁRY, 1912, *C. keriensis* MOCSÁRY, 1889 and *C. kashgarica* MOCSÁRY, 1912 (ROSA 2018; ROSA et al. 2014). Yet, the number of species is significantly underestimated and further research will definitely reveal a number of new species.

In the last years, a revision of the type material (ROSA et al. 2017a, 2017e, unpubl. records) has changed species placement in some groups. In particular, six species included by KIMSEY & BOHART (1991) in the *Chrysis ignita* group were moved to other species groups, as well as two species described by TARBINSKY (2000). More in detail, *C. alaica* belongs to the *C. cerastes* group; *C. araxana* MOCSÁRY, 1893 to the *C. maculicornis*



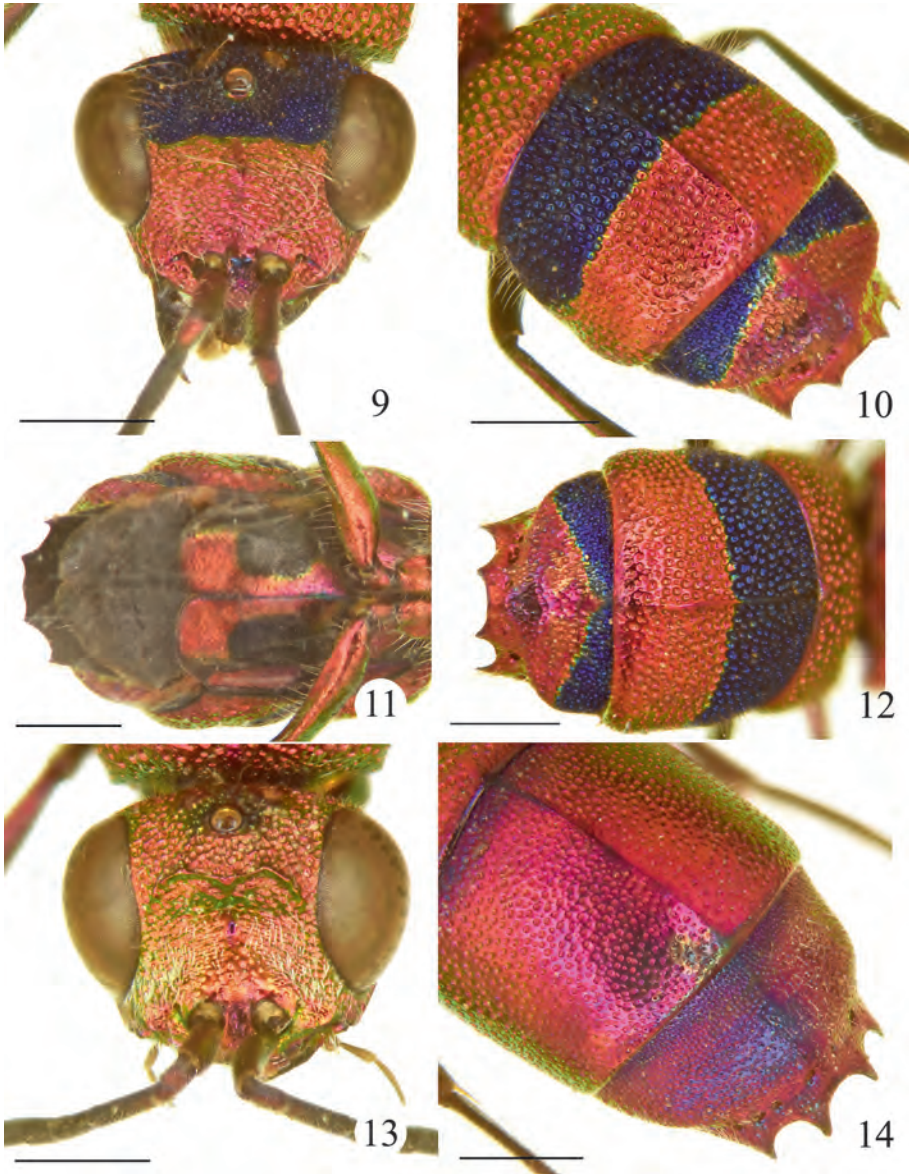
Figs 1-3: Habitus: (1) *Chrysis mane* SEMENOV; (2) *Chrysis violenta* LINSSENMAIER; (3) *Chrysis lyubae* nov.sp.



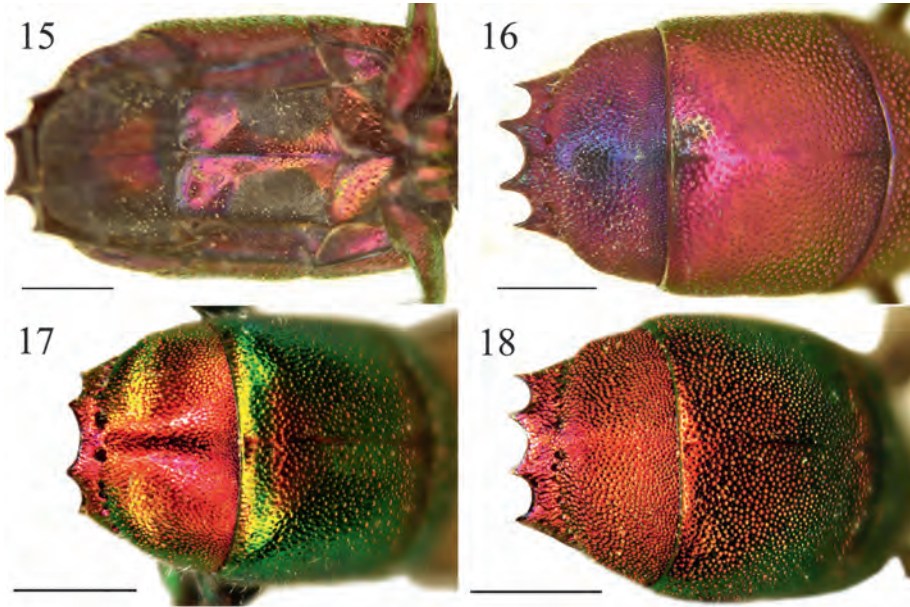
Figs 4-8: *Chrysis lyubae* nov.sp.: (4) habitus, lateral view; (5) face, frontal view; (6) second and third tergum, dorso-lateral view; (7) metasoma, ventral view; (8) metasoma, posterior view.

group; *C. draco* MOCSÁRY, 1912 to the *C. subsinuata* group; *Chrysis lanata* MOCSÁRY, 1912, *C. regalis* MOCSÁRY, 1912, *C. sapphirus* SEMENOV, 1967 and *C. korneevi* TARBINSKY, 2000 belong to the *Chrysis facialis* group. Moreover, two of these species proved new synonymies: *Chrysis korneevi* TARBINSKY, 2000 **nov.syn.** of *Chrysis regalis* MOCSÁRY, 1912 (in particular, *C. korneevi* is the male of *C. regalis*) and *Chrysis anastasiae* TARBINSKY, 2000 **nov.syn.** of *Chrysis dentipes* RADOSZKOWSKI, 1877.

TARBINSKY (2000) provided a revision of the *Chrysis ignita* group of the Tian Shan, with keys, descriptions, distributions and line drawings. A preliminary revision of his collection at IBPB resulted in discovery of a series of misidentifications (e.g. the series of specimens identified as *Chrysis chinensis* MOCSÁRY, 1912 included specimens of *C. longula* ABEILLE DE PERRIN, 1879; *C. longula* included specimens of the *taczanovskii* group;



Figs 9-14: *Chrysis violenta*: (9) face, frontal view; (10) metasoma, dorso-lateral view; (11) metasoma, ventral view; (12) metasoma posterior view. *Chrysis mane*: (13) face, frontal view; (14) metasoma, dorso-lateral view.



Figs 15-18: *Chrysis mane*: (15) metasoma, ventral view; (16) metasoma, posterior view. *Chrysis kukunorensis*: (17) metasoma, ventral view. *Chrysis matutina*: (18) metasoma, posterior view.

C. rutiliventris included specimens close to *C. mediata* LINSENMAIER, 1951; *C. mediata* included *C. angustula* SCHENCK, 1856; and the same situation was observed for almost all the other species identified in the *C. ignita* group), which will be dealt with at length in another work. However, a few Tarbinsky's species, clearly synonyms, are already discussed in the present paper. Besides the above mentioned *Chrysis korneevi* and *C. anastasiae*, not belonging to the *C. ignita* group, other synonymies are *Chrysis crebropilosa* TARBINSKY, 2000 **nov.syn.** of *Chrysis csikiana* MOCSÁRY, 1912; *Chrysis talassica* TARBINSKY, 2000 **nov.syn.** of *Chrysis inaequipunctata* BISCHOFF, 1910; *Chrysis viridodentata* TARBINSKY, 2000 **nov.syn.** of *Chrysis castigata* LINSENMAIER, 1959; finally, *Chrysis ignita* var. *fulgidaeformis* BISCHOFF, 1930 **nov.syn.** of *C. uljanini* RADOSZKOWSKI, 1877, after examination of the types housed at MNHU.

List of the Central Asian species in the *Chrysis ignita* group

The following checklist includes only published data, and also doubtful identification and misidentifications. An extensive revision of this species group is still needed, based on more materials from all Central Asian countries and adjacent territories. The goal of this checklist is to provide a first overview of the published species and their related publications.

Chrysis angustula SCHENCK, 1856

Chrysis angustula SCHENCK, 1856: 28. Lectotype ♀ (designated by MORGAN 1984: 9); Germany: former Duchy of Nassau (type depository: Frankfurt).

Chrysis angustula: TARBINSKY 2000: 194 (key), 200 (cat., distr., Kyrgyzstan: Tian Shan, Kavak-Too, vill. Kyzyl-Suek).

R e m a r k s : identification by TARBINSKY (2000) to be confirmed.

D i s t r i b u t i o n : Kyrgyzstan. Trans-Palaeartic. Europe, Southwest Asia, Siberia (ROSA et al. 2017d), China (Heilongjiang, Jilin, Henan) (ROSA et al. 2014).

***Chrysis bianchii* SEMENOV, 1892**

Chrysis (Tetrachrysis) Bianchii SEMENOV, 1892: 260. Lectotype ♀ (designated by ROSA et al. 2017a: 19); Turkmenistan: Kopet-dag mt. near Tschuli (St. Petersburg).

Chrysis (Tetrachrysis) bianchii: ROSA et al. 2017a: 19 (typ., lectotype des.), 118 (Plate 18).

D i s t r i b u t i o n : BOHART (in KIMSEY & BOHART 1991: 389) designated the lectotype based on a male specimen collected and identified after the date of description, therefore not belonging to the type series.

D i s t r i b u t i o n : Turkmenistan.

***Chrysis bimaculata* TARBINSKY, 2000**

Chrysis bimaculata TARBINSKY, 2000: 194 (key), 199 (descr.), 203 (Fig. 8). Holotype ♀; Kyrgyzstan: Tian Shan, Ala-Archa, 12.vii.1996, leg. Makogonova (Bishkek).

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis brevitarsis* THOMSON, 1870**

Chrysis brevitarsis THOMSON, 1870: 107. Holotype ♀; Sweden: Nerike [= Närke] (Lund).

Chrysis brevitarsis: VAN DER SMISSEN 2010: 33 (key), 52 (descr., var. 1 and var. 2: Kazakhstan: Koniptau Mts., 100 km NW Taldi-Kurgan [= Taldykorgan]; 200 km NE Tcherkaskoe; var. 3: Kazakhstan: Issik 3 km S; Kyrgyzstan, env. Frunze [= Bishkek], 10 km Con Arik, 10 km W Taldi-Suu, 42,9° N 78,0° E (Issik-Kul); Tash-Arik, 11 km E Talas; Ala-Archa riv., Kashka-Suu, 1700m. Uzbekistan: Sukok).

R e m a r k s : identification by VAN DER SMISSEN (2010) to be confirmed. The author listed three colour variations, without any mention to other characters. However, several similar blue species are distributed in Central Asia and another examination of those specimens is needed.

D i s t r i b u t i o n : Kazakhstan, Kyrgyzstan, Uzbekistan.

***Chrysis buda* BOHART, 1991**

Chrysis (Tetrachrysis) buddhae SEMENOV, 1967: 179, *nom. praeocc., nec* MOCSÁRY, 1913. Holotype ♀; China: Inner Mongolia [not Gansu Province] (St. Petersburg).

Chrysis buda BOHART in KIMSEY & BOHART, 1991, replacement name for *C. buddhae* SEMENOV, 1967, *nec* MOCSÁRY, 1913.

Chrysis buda: TARBINSKY 2000: 194 (key), 201 (cat., distr., Kyrgyzstan: Talasskiy crest, Kyrgyzskiy crest, Sandalashskiy crest, Terskey Ala-Too, Boom canyon, Kungey Ala-Too, Toktogulskaya valley, Dzhetim crest, Atbashinskiy crest).

R e m a r k s : identification by TARBINSKY (2000) to be confirmed.

D i s t r i b u t i o n : Kyrgyzstan (TARBINSKY 2000: 201). Russia (Buryatia Rep.) (ROSA et al. 2017c); China (Hansiu, Hubei, Inner Mongolia) (ROSA et al. 2014).

***Chrysis castigata* LINSENMAIER, 1959**

Chrysis exsulans var. *asiatica* LINSENMAIER, 1951: 82, nom. praeocc., nec RADOSZKOWSKI, 1889. Holotype ♀; Uzbekistan: Fergana Valley (Budapest).

Chrysis (Chrysis) exsulans ssp. *castigata* LINSENMAIER, 1959: 155. Replacement name for *Chrysis exsulans* var. *asiatica* LINSENMAIER, 1951, nec RADOSZKOWSKI, 1889 (descr., "Turkestan").

Chrysis exsulans: KIMSEY & BOHART 1991: 410 (cat., syn.).

Chrysis castigata: LINSENMAIER 1997: 280 (tax., distr., Kazakhstan: Alma-Ata [= Almaty]).

Chrysis exsulans DAHLBOM, 1854: TARBINSKY 2000: 194 (key), 199 (cat., distr., Kyrgyzstan, Tian Shan and adjacent territories: Chatkalskiy crest, Kyrgyzskiy crest, Gissarskiy crest, Alajskiy crest, Talasskiy crest, Ferganskiy crest, Terskey Ala-Too, Kungey Ala-Too, Moldo-Too, Sari-Djaz, Chuy River valley, Boom canyon, Tyup River valley. Uzbekistan: Fergana).

Chrysis viridodentata TARBINSKY, 2000: 194 (key), 198 (descr.), 203 (Figs 4-6). Holotype ♂; Kyrgyzstan: Tian Shan, Terskey Ala-Too, Ulahol, 24.vii.1975, leg. Yu. S. Tarbinsky (Bishkek). **Nov.syn.**

Chrysis (Chrysis) exsulans ssp. *asiatica*: ROSA et al. 2017e: 39 (typ., Plate 20).

R e m a r k s : The holotype male of *Chrysis viridodentata* TARBINSKY is very similar the male of *C. castigata* LINSENMAIER, sharing the same genital capsule. The main differences are the tip of the apical teeth on the third tergum with aberrant green colouration, the larger pits of the pit row and the narrower black spots on the second sternum. Given that *C. viridodentata* was described on a single specimen, I temporarily consider it as a synonym of *C. castigata*, waiting for the examination of additional material.

D i s t r i b u t i o n : Kazakhstan, Kyrgyzstan, Uzbekistan. Russia (Buryatia Rep., Tuva Rep.) (ROSA et al. 2017c).

***Chrysis chinensis* MOCSÁRY, 1912**

Chrysis (Tetrachrysis) ignita var. *chinensis* MOCSÁRY, 1912b: 589. Holotype ♀; China: Shanghai (Budapest).

Chrysis chinensis: TARBINSKY 2000: 195 (key), 202 (cat., distr., Kyrgyzstan: Terskey Ala-Too, vill. Dzhlilandi, Ak-Suu; Kyrgyzskiy crest, vill. Kegeti; Tchalkaskiy crest, Sary-Chelek lake, Terskey Ala-Too, env. vill. Teplokljuchenka; Narynskiy crest, Irisu canyon, Kyrgyzskiy crest; Tujuk; Terskey Ala-Too, vill. Dzhangilchiak; Kyrgyzskiy crest, Ala-Archa canyon).

Chrysis chinensis: VAN DER SMISSEN 2010: 33 (key), 56 (colour variations, Kazakhstan).

R e m a r k s : identification by TARBINSKY (2000) to be confirmed.

D i s t r i b u t i o n : Kazakhstan, Kyrgyzstan. Trans-Palaeartic: from Western Europe to Mongolia, Siberia (Altai Rep., Khakassia Rep., Zabaikalskii Terr.) (ROSA et al. 2017c), and China (Heilongjiang, Shanghai) (ROSA et al. 2014).

***Chrysis chlorochrysea* TARBINSKY, 2000**

Chrysis chlorochrysea TARBINSKY, 2000: 194 (key), 202 (descr.). Holotype ♀; Kyrgyzstan: Sary-Djaz valley, vill. Kaindi, 16.vii.1993, leg. D. Milko (Bishkek) (paratype from Kyrgyzskiy crest, vill. Issik-Ata).

Chrysis chlorochrysea: ROSA 2019: 20 (Figs 39-40).

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis csikiana* MOCSÁRY, 1912**

Chrysis (Tetrachrysis) csikiana MOCSÁRY, 1912a: 406. Lectotype ♂ (designated by BOHART in BOHART & FRENCH 1986: 341); Kazakhstan: Semipalatinsk [= Semey] (Budapest).

Chrysis (Tetrachrysis) csikiana: SEMENOV & NIKOL'SKAYA, 1954: 128 (cat., distr., Tajikistan, Kondara, Kvak; Uzbekistan).

Chrysis fouqueti DU BUYSSON, 1909: KIMSEY & BOHART 1991: 412 (cat., syn.).

Chrysis fouqueti csikiana: ROSA et al. 2017b: 135.

Chrysis csikiana: ROSA et al. 2017e: 30 (cat., typ.), 31 (Plate 12).

Chrysis csikiana: ROSA 2018: 5 (revalidated).

Chrysis crebropilosa TARBINSKY, 2000: 193 (key), 195 (descr.), 203 (Figs 14-15). Holotype ♂; Kyrgyzstan: Tian Shan, Ala-Archa, 5.v.1997, leg. D. Milko (paratypes from Sulukta) (Bishkek). **Nov.syn.**

Remarks: *Chrysis csikiana* MOCSÁRY, 1912 was not mentioned by TARBINSKY (2000), however it is a widespread species in Central Asia, known from Kazakhstan (MOCSÁRY 1912a), Tajikistan and Uzbekistan (SEMENOV & NIKOL'SKAYA 1954). It was revalidated by ROSA (2018) and shows sexual dimorphism with female malar spaces long and subparallel.

Distribution: Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan. Russia (North Caucasus), and China (Xinjiang) (ROSA 2018).

***Chrysis fax* SEMENOV, 1903**

Chrysis (Tetrachrysis) fax SEMENOV, 1903: 399. Holotype ♀; Kyrgyzstan: Barskaun River (St. Petersburg).

Chrysis fax: SEMENOV 1912: 192 (descr. ♂, Kyrgyzstan: Kyzyl-su, Tokmak; env. Przhevalsk [= Karakol], Issyk-kul lake; Barskaun river).

Chrysis fax: KIMSEY & BOHART 1991: 410 (cat., Kyrgyzstan: Semiretshj'e).

Chrysis fax: TARBINSKY 1996: 374 (cat., distr., North Kyrgyzstan, Issik-Kul region).

Chrysis fax: TARBINSKY 2000: 194 (key), 200 (cat., distr., Kyrgyzstan: Kyrgyzskiy crest, Kungey Ala-Too, Sary-Djaz, Tyup River valley, Terskey Ala-Too, Ketmen crest, Moldo-Too range, Chuy River valley).

Chrysis fax: ROSA et al. 2017a: 24 (cat., typ.), 128 (Plate 38).

Distribution: Kyrgyzstan.

***Chrysis figurata* LINSENMAIER, 1997**

Chrysis (Chrysis) figurata LINSENMAIER, 1997: 281. Holotype ♀; Armenia: Yerevan, 50 km N Tsaghkadzor, 2000 m, leg. Bleyl (Luzern) (paratype from Uzbekistan: Almas).

Distribution: Uzbekistan.

***Chrysis fulgida* LINNAEUS, 1761**

Chrysis fulgida LINNAEUS, 1761: 415. Lectotype ♀ (designated by MORGAN 1984: 9); Sweden: Uppsala (London-Linnean Society).

Chrysis fulgida: RADOSZKOWSKI 1889: 28 (cat., descr. male genitalia, Uzbekistan: Tashkent), tab. 5 (Figs 58a-58c).

Chrysis (quadridentatae) fulgida: DU BUYSSON IN ANDRÉ 1895: 512 (descr., "Turkestan").

Chrysis (Tetrachrysis) fulgida: SEMENOV & NIKOL'SKAYA 1954: 130 (cat., Tajikistan: Kondara).

Chrysis fulgida: TARBINSKY 2000: 194 (key), 198 (cat., distr., Kyrgyzstan: Chatkalskaya valley, Chatkal river; Tian Shan: Kokomeren river valley; Sandalashkiy crest, Sandalsay river, vill. Sary-Bulun; Zhana-Arca steppe, Taldy-Manaka river valley, Karkara river valley; Terskey Ala-Too, vill. Ak-Suu; Chatkalskiy crest, Sary-Chelek lake; Talasskiy crest, vill. Alabijik).

Distribution: Kyrgyzstan, Tajikistan, "Turkestan", Uzbekistan. Trans-Palaeartic: from West Europe to Russian Far East (ROSA et al. 2017d).

***Chrysis ignita* (LINNAEUS, 1758) sensu lato**

Sphex ignita LINNAEUS, 1758: 571. Lectotype ♀ (designated by RICHARDS 1935: 159); Europe (London-Linnean Society).

Chrysis (Tetrachrysis) ignita: RADOSZKOWSKI 1877: 10 (key), 23 (descr., Uzbekistan: Kyzylkum Desert).

Chrysis (Tetrachrysis) ignita: RADOSZKOWSKI 1889: 29 (male genitalia descr., Turkmenistan: Ashgabat; Uzbekistan: Tashkent).

Chrysis (Tetrachrysis) ignita: MOCSÁRY 1889: 482 (key), 488 (descr., "Turkestan").

Chrysis (Tetrachrysis) ignita: SEMENOV & NIKOL'SKAYA 1954: 130 (cat., distr., Peter the Great range).

R e m a r k s : Published records of *Chrysis ignita* from Central Asian countries, as well as from other former Soviet countries, refer to the species in the broad sense (*C. ignita sensu lato*), and it is impossible to know which species of the *C. ignita* group were actually referred to.

D i s t r i b u t i o n : Distribution. Tajikistan, Turkmenistan, Uzbekistan. Trans-Palaeartic: from West Europe to Russian Far East (ROSA et al. 2017d).

***Chrysis inaequipunctata* BISCHOFF, 1910**

Chrysis (Tetrachrysis) inaequipunctata BISCHOFF, 1910: 462. Lectotype ♀ (designated by BOHART in KIMSEY & BOHART 1991: 422); Uzbekistan: Bukhara (Berlin).

Chrysis inaequipunctata: KIMSEY & BOHART 1991: 422 (cat., lectotype designation, Uzbekistan: Bukhara).

Chrysis (Tetrachrysis) rogneda SEMENOV, 1967: 179. Holotype ♀; Uzbekistan: Tashkent (St. Petersburg). Synonymized by KIMSEY & BOHART (1991: 422).

Chrysis talassica TARBINSKY, 2000: 193 (key), 197 (descr.), 203 (Fig. 9-10). Holotype ♀; Kyrgyzstan: W Tian Shan, Kyrgyzskiy crest, south slope, vill. Nelda, 11.vi.1996, leg. Zonstein (Bishkek) (paratypes from Talaskiy crest: env. vill. Kara-Oy). **Nov.syn.**

Chrysis inaequipunctata: ROSA 2018: 5 (cat., Tajikistan: Shaydan [= Asht]).

R e m a r k s : *Chrysis inaequipunctata* BISCHOFF was not mentioned by TARBINSKY (2000), yet it seems widely distributed in Central Asian countries.

D i s t r i b u t i o n : Kyrgyzstan, Tajikistan, Uzbekistan.

***Chrysis indigotea* DUFOR & PERRIS, 1840**

Chrysis indigotea DUFOR & PERRIS, 1840: 38. Syntypes; France (Lund, Paris).

Chrysis indica SCHRANK, 1802: KIMSEY & BOHART 1991: 422.

Chrysis indica: TARBINSKY 2000: 193 (key), 197 (cat., distr., Kyrgyzstan: Kyrgyzskiy crest, ur. Ala-Archa river).

R e m a r k s : identification by TARBINSKY (2000) to be confirmed.

In KIMSEY & BOHART (1991) and TARBINSKY (2000) under the name *Chrysis indica* SCHRANK, 1802. This name was not in use after 1899. In particular, before KIMSEY & BOHART (1991) it was listed only by two authors as a possible synonym of *C. indigotea* DUFOR & PERRIS, 1840 (MOCSÁRY 1889; BISCHOFF 1913). After DUFOR & PERRIS (1840) the name currently in use for the identification of this species was *C. indigotea*, which is still the name in current use (ICZN 1999: Article 23.9). Moreover, the type of *C. indica* is lost and its description could be also related to other species of this group, e.g. a small specimen of *C. iris* CHRIST. For these reasons I consider *Chrysis indigotea* as the valid name, and *C. indica* as *nomen dubium* and *species inquirenda*.

Distribution: Kyrgyzstan. West Palaearctic: central and southern Europe, northern Africa, Asia Minor (LINSENMAIER 1959).

***Chrysis iris* CHRIST, 1791**

Chrysis iris CHRIST, 1791: 405. Type ?; Unknown locality (depository unknown) (*ignita* group).
Chrysis nitidula FABRICIUS, 1775: misidentification by RADOSZKOWSKI, 1877, see below: 10 (key), 15 (descr., Uzbekistan: Maracanda [= Samarkanda], Katty-Kurgan).
Chrysis soluta DAHLBOM, 1854: RADOSZKOWSKI 1877: 10 (key), 16 (descr., Uzbekistan: Maracanda [= Samarkanda]).
Chrysis purpurata FABRICIUS, 1787: TARBINSKY 2000: 193 (key), 197 (cat., distr., Kyrgyzstan, Tian Shan: Kyrgyskiy crest, Ferganskiy crest, Alajskiy crest, Gissarskiy crest, Talasskiy crest, Ugamskiy crest, Karzhantau crest, Chuy River valley, Tchatkalskiy crest).

Remarks: The species was long-time known as *C. nitidula* FABRICIUS, 1775 (see e.g. BERLAND & BERNARD 1938); the latter was subsequently recognized as an American species, not occurring in the Palaearctic (LINSENMAIER 1959). In KIMSEY & BOHART (1991) and TARBINSKY (2000) it is reported under the name *Chrysis purpurata* FABRICIUS, 1787, since KIMSEY (1988: 272) wrongly designated one specimen of *Chrysis iris* found in Fabricius' collection as lectotype of *C. purpurata*. This action made *Chrysis iris* CHRIST, 1791 a junior synonym of *C. purpurata* FABRICIUS, 1787 and *Euchroeus* a junior synonym of *Chrysis* LINNAEUS, 1761 (PAVESI & STRUMIA 1997). As a consequence, the name of the genus *Euchroeus* LATREILLE, 1809 (type species *Chrysis purpurata* FABRICIUS, 1787) became *Brugmoia* RADOSZKOWSKI, 1877 (type species *B. pellucida* RADOSZKOWSKI, 1877) and the valid species *Euchroeus purpuratus* auct. became *Brugmoia quadrata* (SHUCKARD, 1837). PAVESI & STRUMIA (1997) asked the International Commission on Zoological Nomenclature to set aside, under its Plenary Powers, the lectotype designation by KIMSEY (1988) for the nominal species *Chrysis purpurata* FABRICIUS, 1787; to place on the Official List of Generic Names in Zoology the name *Euchroeus* LATREILLE, 1809; to place on the Official Index of Specific Names in Zoology the name *purpurata* FABRICIUS, 1787 as published in the binomen *Chrysis purpurata*. The Commission (ICZN 1998: Opinion 1906) accepted the said proposals, and conserved the name *Euchroeus* LATREILLE, 1809 on the Official List of Generic Names in Zoology; conserved the name *Chrysis purpurata* FABRICIUS, 1787 on the Official List of Specific Names in Zoology. According to this Opinion, the generic name *Brugmoia* RADOSZKOWSKI has to be considered a synonym of the generic name *Euchroeus* LATREILLE, and *Brugmoia quadrata* (SHUCKARD) is a synonym of *Chrysis purpurata* FABRICIUS. Therefore, *Chrysis iris* is to be considered the valid name.

Distribution: Uzbekistan. Trans-Palaearctic: from Western Europe to Eastern Siberia (ROSA et al. 2017d).

***Chrysis kashgarica* MOCSÁRY, 1912**

Chrysis (Tetrachrysis) kashgarica MOCSÁRY, 1912b: 550. Holotype ♂; China: Xinjiang, Kashgar (Budapest).
Chrysis kashgarica: TARBINSKY 2000: 194 (key), 198 (cat., distr., Kyrgyzstan: Son-Kul lake; Kungey Ala-Too, env. vill. Cholpon-Ata; Terskey Ala-Too, vill. Dzhangylchak; Sonkulskiy crest, Shilbeli; Tian Shan, Chichkan valley, Kokomeren valley, vill. Ornok; Terskey Ala-Too, env. vill. Teplokluichenka, vill. Barskau; Chatkalskiy crest, vill. Kasansay, Sary-Chelek; Narynskiy crest, env. Naryn).

Distribution: Kyrgyzstan. China (Xinjiang).

***Chrysis keriensis* RADOSZKOWSKI, 1887**

Chrysis (Tetrachrysis) keriensis RADOSZKOWSKI, 1887: 47. Holotype ♂ [not ♀]; China [not Mongolia]: Xinjiang, Keria-Daria (Kraków).

Chrysis (Tetrachrysis) chrysochlora MOCSÁRY, 1889: 515. Lectotype ♀ (designated by BOHART in KIMSEY & BOHART 1991: 396); Uzbekistan: Tashkent (Budapest).

Chrysis (quadridentatae) chrysochlora: DU BUYSSON in ANDRÉ 1895: 466 (key, descr., Uzbekistan: Tashkent).

Chrysis viridans RADOSZKOWSKI, 1891: 192. Holotype ♀; Turkmenistan: Ashkhabat (Kraków).

Chrysis (Tetrachrysis) samarkandensis BISCHOFF, 1910: 463. Holotype ♀; Uzbekistan: Samarkand (Berlin).

Chrysis viridans: SEMENOV & NIKOL'SKAYA 1954: 128 (cat., distr., Tajikistan: Kondara, Varsov, Gissar, Kala-i-Vamar; Kazakhstan; Turkmenistan; Uzbekistan).

Chrysis (Chrysis) chrysochlora: LINSSENMAIER 1959: 152 (key), 161 (descr., "Turkestan").

Chrysis chrysochlora: KIMSEY & BOHART 1991: 396 (cat., lectotype designation, Uzbekistan: Tashkent).

Chrysis chrysochlora: TARBINSKY 2000: 193 (key), 197 (cat., distr., Kyrgyzstan: Kyrgyzskiy crest, Ala-Archa ur., env. Tash-Kumir; Uzbekistan: Samarkand, Tashkent; Turkmenia).

Chrysis chrysochlora: ROSA et al. 2015b: 18 (cat., syn., typ.), 19 (Plate 12).

Chrysis chrysochlora: ROSA et al. 2017e: 27 (cat., typ.).

D i s t r i b u t i o n : Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan. China (Xinjiang).

***Chrysis korbiana* MOCSÁRY, 1912**

Chrysis korbiana MOCSÁRY, 1912a: 412. Lectotype ♀ (designated by BOHART in BOHART & FRENCH 1986: 342); Uzbekistan: Fergana (Budapest).

Chrysis (Tetrachrysis) korbiana: SEMENOV & NIKOL'SKAYA 1954: 128 (cat., distr., Tajikistan: Kvak; Uzbekistan).

Chrysis (Chrysis) chrysochlora korbiana: LINSSENMAIER 1959: 161 (descr., "Turkestan").

Chrysis kondarica TARBINSKY, 2000: 193 (key), 196 (descr.) 203 (Figs 1-3). Holotype ♂; Tajikistan: Kondara, 14.vii.1976, leg. Pek (Bishkek). **Nov.syn.**

Chrysis korbiana: VINOKUROV 2006: 169 (cat., Kazakhstan: Darbaza).

Chrysis korbiana: ROSA et al. 2017e: 53 (cat., typ., Uzbekistan: Fergana), 54 (Plate 32).

R e m a r k s : *Chrysis kondarica* TARBINSKY, 2000, is likely to be the male of *Chrysis korbiana* MOCSÁRY, 1912, only known on the female.

D i s t r i b u t i o n : Kazakhstan, Tajikistan, Uzbekistan.

***Chrysis longula* ABEILLE DE PERRIN, 1879**

Chrysis ignita var. *longula* ABEILLE DE PERRIN, 1879: 74. Lectotype ♀ (designated by MORGAN 1984: 9); Germany: Frankfurt (Paris).

Chrysis longula: TARBINSKY 2000: 194 (key), 200 (cat., distr., Kyrgyzstan: Kyrgyzskiy crest, vill. Issik-Ata).

R e m a r k s : Identification by TARBINSKY (2000) to be confirmed.

D i s t r i b u t i o n : Trans-Palaeartic: from West Europe to Siberia (LINSSENMAIER 1959, 1997).

***Chrysis longiventris* TARBINSKY, 2000**

Chrysis longiventris TARBINSKY, 2000: 195 (key), 203 (descr.). Holotype ♂; Kyrgyzstan: Tian Shan, Terskey Ala-Too, Teplokljuchenka vill., 19.vi.1995, leg. Ovchinnikov (Bishkek).

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis lucidiantennalis* TARBINSKY, 2000**

Chrysis lucidiantennalis TARBINSKY, 2000: 195 (key), 202 (descr.). Holotype ♂; Kyrgyzstan: Tian Shan, Terskey Ala-Too, Dzhiargilchiak, 22.vii.1975, leg. Yu.S. Tarbinsky (Bishkek).

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis mediata* LINSENMAIER, 1951**

Chrysis (Chrysis) ignita var. *mediata* LINSENMAIER, 1951: 75. Lectotype ♀ (designated by LINSENMAIER 1959: 154); Switzerland: Wallis (Luzern).

Chrysis mediata: TARBINSKY 2000: 195 (key), 204 (cat., distr., Kyrgyzstan: Terseky Ala-Too, vill. Dzhangilchiak; Karkara river valley; Turgen-Aksuu; Kungey Ala-Too, env. vill. Cholpon-Ata; Tyup River valley, Majchunkur; Kyrgyzskiy crest, Ala-Archa canyon; Sary-Djaz, vill. Koylyu; vill. Chon-Arik; Kungey Ala-Too, vill. Chon-Uryukti; Tchatkalskiy crest, Sary-Chelek lake).

R e m a r k s : identification by TARBINSKY (2000) to be confirmed.

D i s t r i b u t i o n : Kyrgyzstan. West Palaearctic. Reliable distributional data from the eastern Palaearctic are not available. Records from Japan have been found to be erroneous (LINSENMAIER 1997)

***Chrysis moesta* SEMENOV, 1967**

Chrysis (Tetrachrysis) moesta SEMENOV, 1967: 172. Holotype ♂; Kazakhstan: Baigakum (St. Petersburg).

Chrysis moesta: ROSA et al. 2017a: 39 (cat., typ.), 154 (Plate 90).

D i s t r i b u t i o n : Kazakhstan.

***Chrysis niehuisi* ROSA, 2019**

Chrysis niehuisi ROSA, 2019: 18. Holotype ♂; Tajikistan: W Pamir, Rushan Dst., 3400 m, 20-30.VII.2015, leg. V. Gurko & c. (St. Petersburg).

D i s t r i b u t i o n : Tajikistan.

***Chrysis nitidularia* MOCSÁRY, 1912**

Chrysis nitidularia MOCSÁRY, 1912a: 411. Lectotype ♂ (designated by BOHART in BOHART & FRENCH 1986: 342); Kazakhstan: Narynkol (Budapest).

Chrysis fouqueti (DU BUYSSON, 1909): KIMSEY & BOHART 1991: 412 (cat., syn., Kazakhstan: Narynkol).

Chrysis nitidularia: ROSA et al. 2017e: 64 (cat., type), 66 (Plate 44).

D i s t r i b u t i o n : Kazakhstan.

***Chrysis ostashchenkoi* TARBINSKY, 2000**

Chrysis ostashchenkoi TARBINSKY, 2000: 194 (key), 201 (descr.). Holotype ♂; Kyrgyzstan: Tian Shan, Ala-Archa, 8.vii.1997, leg. Yu.S. Tarbinsky (Bishkek).

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis planofacialis* TARBINSKY, 2000**

Chrysis planofacialis TARBINSKY, 2000: 194 (key), 200 (descr.). Holotype ♀; Kyrgyzstan: Tian Shan, Sary-Djaz, vill. Kaindi, 20.vi.1977, leg. Pek (Bishkek).

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis pullata* TARBINSKY, 2000**

Chrysis pullata TARBINSKY, 2000: 194 (key), 200 (descr.), 203. Holotype ♂; Kyrgyzstan: Tian Shan, Sari-Djaz, 20.vi.1977, leg. Pek (Bishkek).

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis rutiliventris* ABEILLE DE PERRIN, 1879**

Chrysis ignita var. *rutiliventris* ABEILLE DE PERRIN, 1879: 74. Syntypes ♀♀; France: Bordeaux (Paris).

Chrysis rutiliventris: TARBINSKY 2000: 194 (key), 200 (cat., distr., Kyrgyzstan: Tian Shan, Sary-Djaz, vill. Kaindy; Kungey Ala-Too, vill. Cholpon-Ata).

R e m a r k s : identification by TARBINSKY (2000) to be confirmed.

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis* sp.**

Chrysis nitidularia: TARBINSKY 1996: 374 (Kyrgyzstan: Issik-Kul region) (mis.).

Chrysis fouqueti: TARBINSKY 2000: 194 (key), 198 (cat., distr., Kyrgyzstan: Tian Shan and Alaj: Kyrgyzskiy crest, Terskey Ala-Too, Kungey Ala-Too, Tyup River valley, Ferganskiy crest, Fergana valley, Alajskiy crest, Moldo-Too crest, Kavak-Too crest, Talasskiy crest, Chuy River valley, Chatkalskiy crest) (mis.).

Chrysis pseudobrevitarsis: VAN DER SMISSEN 2010: 135 (var. 1, 2, 3: Kazakhstan: Taldi-Kurgan (Taldykorgan), 200 km NE Tcherkaskoe; var. 4: Kyrgyzstan: Tian Shan, Suusamyr, Kyzyl-Oy, 3000 m) (mis.).

R e m a r k s : This species is rather common in Kazakhstan and Kyrgyzstan, yet differently identified by several authors. It is very likely undescribed (V. Soon, pers. comm.) and a revision of the blue species in Central Asia and adjacent countries may help in the correct identification on this species and its allies.

D i s t r i b u t i o n : Kazakhstan, Kyrgyzstan.

***Chrysis tianshanica* SEMENOV, 1967**

Chrysis (Tetrachrysis) tianshanica SEMENOV, 1967: 171. Holotype ♀; Kyrgyzstan: near Przhhevsk [= Karakol] (St. Petersburg).

Chrysis tianshanica (!): KIMSEY & BOHART 1991: 471 (cat., Kyrgyzstan: near Przhhevsk).

Chrysis tianshanica: TARBINSKY 1996: 374 (Kyrgyzstan: Issik-Kul region).

Chrysis tianshanica: TARBINSKY 2000: 194 (key), 198 (cat., distr., Kyrgyzstan: Kyrgyzskiy crest: vill. Ala-Archa; Chuy River valley, env. Sokuluk; env., Nizhnechuykoe, Ak-Suu river, Tian Shan: Kokomerren, Terskey Ala-Too, env. Tosor)

D i s t r i b u t i o n : Kyrgyzstan.

***Chrysis uljanini* RADOSZKOWSKI, 1877**

Chrysis Uljanini RADOSZKOWSKI, 1877: 22. Lectotype ♀ (designated by BOHART in KIMSEY & BOHART 1991: 473); Uzbekistan: Tashkent desert, Zarafshan Valley (Moscow).

Chrysis uljanini: DALLA TORRE 1892: 104. Incorrect subsequent spelling.

Chrysis (Tetrachrysis) mesembrina SEMENOV & NIKOL'SKAYA, 1954: 130. Holotype ♀; Tajikistan: Kondara (St. Petersburg). Other Tajik localities: Kvak, Iskander Darya, Stalinabad [= Dushambe], Khorugh, Derushan, Dashtidzhum. Synonymized by KIMSEY & BOHART (1991: 473).

Chrysis (Tetrachrysis) sarafschana MOCSÁRY, 1889: 437. Holotype ♀; Uzbekistan: Zarafshan Valley (Kraków). Synonymized by KIMSEY & BOHART (1991: 473).

Chrysis ignita var. *fulgidaeformis* BISCHOFF, 1930: 224. Syntypes ♀♀ [not holotype]; Kyrgyzstan: Alai Valley (Berlin). **Nov.syn.**

Chrysis (Chrysis) sarafschana: LINSENMAIER 1959: 152 (key), 160 (descr., Turkestan).

Chrysis uljanini: TARBINSKY 2000: 194 (key), 200 (cat., distr., Kyrgyzstan: Kyrgyzskiy crest, Ala-Archa canyon. Uzbekistan, Tajikistan).

Chrysis uljanini: ROSA et al. 2015a: 13 (cat., typ., Plate 9, Uzbekistan: Zaravshan Valley and in steppe between Syr-Darya and Tashkent).

Chrysis sarafschana: ROSA et al. 2015b: 52 (cat., typ.), 53 (Plate 36).

R e m a r k s : *Chrysis ignita fulgidaeformis* BISCHOFF was not mentioned by any subsequent author, till when KIMSEY & BOHART (1991) included it in the synonymic list of *C. ignita* (LINNAEUS). The examination of the syntypes resulted in the new synonymy with *C. uljanini*.

D i s t r i b u t i o n : Kyrgyzstan, Tajikistan, Uzbekistan.

Doubtful species

Chrysis tamerlana MOCSÁRY, 1912

Chrysis tamerlana MOCSÁRY, 1912b: 551. Holotype ♂; India: Simla Hills (Budapest).

R e m a r k s : *Chrysis tamerlana* was listed by MILKO & MAKOGONOVA (1999), yet this identification is doubtful and the specimen should be double checked.

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Zusammenfassung

Chrysis lyubae nov.sp., von Kasachstan wird beschrieben. Die Art gehört zur *Chrysis ignita* Gruppe, *C. ruddii* Untergruppe. Sie ist anhand der einmaligen Farbmuster (rosa mit violetter bis schwarzem Scheitel und Mesoscutum) sowie anhand mehrerer morphologischer Merkmale, wie die Form des apikalen Zahnes und der Körperpunktierung, zu erkennen. Eine kommentierte Checkliste der zentralasiatischen Arten der *Chrysis ignita* Gruppe mit neuen Verbreitungsdaten und sechs neuen Synonymen wird präsentiert: *Chrysis castigata* LINSENMAIER, 1959 = *Chrysis viridodentata* TARBINSKY, 2000 nov.syn.; *Chrysis csikiana* MOCSÁRY, 1912 = *Chrysis crebropilosa* TARBINSKY, 2000 nov.syn.; *Chrysis dentipes* RADOSZKOWSKI, 1877 = *Chrysis anastasiae* TARBINSKY, 2000 nov.syn.; *Chrysis inaequipunctata* BISCHOFF, 1910 = *Chrysis talassica* TARBINSKY, 2000 nov.syn.; *Chrysis regalis* MOCSÁRY, 1912 = *Chrysis korneevi* TARBINSKY, 2000 nov.syn.; *Chrysis uljanini* RADOSZKOWSKI, 1877 = *Chrysis ignita* var. *fulgidaeformis* BISCHOFF, 1930 nov.syn..

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