

A review of the family Chrysididae (Hymenoptera) of the fauna of Tien Shan and adjacent territories

Обзор семейства Chrysididae (Hymenoptera) фауны Тянь-Шаня и сопредельных территорий

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Abstract. A critical review of the taxonomy of the family Chrysididae is given and the author's insights on the systematics of the family is discussed. The fact that this family is poorly studied in the region of Tien Shan is stated. A key to the genera of the family Chrysididae of Tien Shan and adjacent territories is provided. Two new genera and two new species: *Pseudochrysur* Yu. Tarbinsky, **gen.n.** with *Pseudochrysur zonsteini* Yu. Tarbinsky, **sp.n.** (Uzbekistan, Shurob) as a type species, and *Arnoldia* Yu. Tarbinsky, **gen.n.** with *Arnoldia seraphimi* Yu. Tarbinsky, **sp.n.** (Kyrgyzstan, Teploklyuchenka) as type species are described.

Резюме. В работе приводится критический анализ таксономии сем. Chrysididae, даны представления автора на систему семейства. Утверждается, что изученность представителей семейства на территории Тянь-Шаня невысока. Приводится определительная таблица родов сем. Chrysididae фауны Тянь-Шаня и сопредельных территорий. Описаны два новых рода и вида: *Pseudochrysur* Yu. Tarbinsky, **gen.n.**, типовой вид *Pseudochrysur zonsteini* Yu. Tarbinsky, **sp.n.** (Узбекистан, Шуроб) и *Arnoldia* Yu. Tarbinsky, **gen.n.**, типовой вид *Arnoldia seraphimi* Yu. Tarbinsky, **sp.n.** (Киргизия, Теплоключенка).

An analysis of reviews and revisions of the taxonomy and fauna of the family Chrysididae [Semenov-Tian-Shanskij, 1932, 1954, 1967; Linsenmaier, 1959a, 1959b, 1968; Kimsey, Bohart, 1990] shows an unevenness in the degree of investigation of the chrysidid wasps in the Palearctic. These wasps are well studied in the Mediterranean, Europe, Asia Minor, and Middle East. At the same time, Siberia, the Far East, Kazakhstan (excluding the Karatau Range), and Central Asia, remains poorly studied.

Central Asian Chrysididae were considered in the reviews by Radoszkowsky [1877], Mocsáry [1909], materials of different collectors were systematized by

Semenov-Tian-Shanskij [1967]. These reviews show that the Chrysididae fauna is well studied in Turkmenistan, Uzbekistan (Syr-Darja valley), Tadzhikistan (excluding the Pamirs), and in the Karatau (Kazakhstan). As for the Tien Shan fauna, Panfilov [1962] describes 13 species which occur in the Issyk-Kul Hollow. In addition, 10 species were cited by Semenov-Tian-Shanskij and Nikolskaya [1954]. The entire Inner Tien Shan, Fergana with adjacent ranges, North and Central Tien Shan remain not studied. At the same time, in a single paper by Semenov-Tian-Shanskij [1967], 179 new taxa were described.

This provides a basis for studying the chrysidid fauna of the Tien Shan and adjacent territories. Generally, the study of regional insect faunas, despite the existence of world-wide and/or Palaearctic reviews of certain families, is justified by the possibility of outlining population differences, understanding the genesis of the faunas of particular territories, working out ways of more accurately identifying species, etc.

During the last 20 years we have gradually accumulated materials on Chrysididae fauna from the Tien Shan and adjacent territories, that are now sufficient for a taxonomic and faunistic review. During this work we face some difficulties, most notably the disagreement between the most important researchers on the taxonomic structure of the family.

Kimsey and Bohart [1990] published a worldwide review of chrysidid wasps where they divided the family into four subfamilies: Chrysidinae, Loboscelidiinae, Amiseginae, and Cleptinae. Linsenmaier [1959] also cited four different subfamilies from the Palaearctic: Cleptinae, Chrysidinae, Parnopinae, and Allocoelinae. Semenov-Tian-Shanskij [1969] raised the rank of Cleptinae to family and included three subfamilies into Chrysididae: Hedychrinae, Chrysidinae, and Parnopinae.

Kimsey and Bohart [1990] subdivided the subfamily Chrysidinae into four tribes: Chrysidini, Parnopini, Allocoelini, and Elampini. Linsenmaier [1959] did not

isolate any tribes in the family. Semenov-Tian-Shanskij [1967] subdivided the family Hedychrinae into the tribes Elampini and Hedychrini, with some subtribes (Hedychridiina, Hedichrina, and Holopygina) in the latter, and the subfamily Chrysidinae into the tribes Chrysidini and Stilbini.

Linsenmaier [1959] reported for the Palearctic nine genera only: *Cleptes* Latr., *Omalus* Panz., *Holopyga* Dahlb., *Hedychrum* Latr., *Hedychridium* Ab., *Euchroeus* Latr., *Chrysis* L., *Stilbum* Sp., and *Parnopes* Latr. Semenov-Tian-Shanskij [1967] cited 28 genera from the same territory. Kimsey and Bohart [1990] in their review of the world Chrysididae fauna cited 39 genera from the Palearctic. Common genera for Semenov-Tian-Shanskij [1967] and Kimsey and Bohart [1990] are: *Cleptes*, *Stilbum*, *Spinolia*, *Chrysis*, *Hedychrum*, *Omalus*, *Haba*, *Hedychridium*, *Holopyga*, *Elampus*, *Parnopes*, *Isadelphina*. Unfortunately, the same name used does not justify the identity of the genus implied.

The genus *Elampus* in the system of Kimsey and Bohart [1990] completely corresponds to the genus *Notosus* sensu Semenov, while the genus *Elampus* sensu Semenov is identical to the genus *Pseudomalus* sensu Kimsey et Bohart [1990].

Linsenmaier [1959] included into his genus *Omalus*, as subgenera, the following genera sensu Semenov: *Omalus*, *Elampus*, *Chryselampus*, *Notosus* and the following genera sensu Kimsey et Bohart [1990]: *Omalus*, *Elampus*, *Philoctetes*, *Pseudomalus*, and *Holophris*.

In their genus *Hedychridium*, Kimsey et Bohart [1990] unified 11 Semenov's genera: *Euchrum*, *Zarudnidium*, *Cyrteuchrum*, *Cyrteuchridium*, *Irenula*, *Homa-leuchrum*, *Zarudnium*, *Claudiola*, *Colpopiga*, *Actineuchrum*, *Euchrydium*. They considered these genera by Semenov as no more than species groups. This opinion is rather disputable, especially if there is a character presented in a clear group of species without any variety. For example, the genus *Euchrum* Semenov, 1954 is distinguished from the species of *Hedychridium* by strongly widened bases, and a distinct keel on its underside.

Semenov-Tian-Shanskij [1967] has clearly outlined the characters of his genus *Hedychridium*: absence of the keel on the fore femora that are not extended at the base, a long proboscis (but this character is not very stable), an evenly curved basal vein, presence of one perpendicular spine in the middle part of the middle and hind claws, and absence of the carina between the eyes. According Linsenmaier [1959], the main and single character of the genus is the presence of a spine in the middle part of middle and hind claws. Kimsey and Bohart [1990], in addition to these main characters, gave some additional characters of the genus *Hedychridium* such as presence of a plane scapal basin with dense silver piling and sparse rugosity, an absence of omaulus and scabral carina on the mesopleuron, and some other characters which, in my view, are rather variable and difficult to detect.

The genus *Chrysis* L. is one of the most speciose of the whole family. A great diversity of characters

reflects this richness, making it difficult to choose the main characters of the genus. Neither in any review, nor in any key or other paper of any researcher is there any clear characterization of this genus. The only really common characters are: simple claws on the legs and the radial vein reaching the hind wing margin. Nevertheless, these characters are found also in some other genera of the tribe Chrysidini. Linsenmaier [1959] included in *Chrysis* all such taxa but *Stilbum*, and further division was carried out on the levels of subgenera and species groups. Kimsey and Bohart [1990], besides splitting the genus *Chrysis*, isolated in the world fauna 24 genera, mostly in the tribe Chrysidini. Sometimes they separated genera on the basis of the structure of the hind margin of the abdominal tergite III (*Trichrysis*, *Pentachrysis*, *Chrysura*). But this characteristic should be supported by other stable characters of the head, thorax, wings, etc. Despite the separation of some good genera from the tribe Chrysidini, it is really difficult to give an exact diagnosis for the remaining genus *Chrysis*. So, Kimsey and Bohart [1990] gave a poor diagnosis of this genus in their key to genera. In the text they presented only those generic characters which are cited in species group diagnoses of the genus.

Apparently, Linsenmaier and Semenov-Tian-Shanskij also faced the same problem. As a consequence, they have not divided the tribe Chrysidini into separate genera, and considered those genera that were separated later by Kimsey and Bohart as subgenera or species-groups. Semenov-Tian-Shanskij [1967] reported as subgenera the following taxa: *Holochrysis* Rye., *Chrysidea* Bisch., *Gonochrysis* Licht., *Cephalochrysis* sem., *Allochrysis* Sem., *Gonodontochrysis* Sem., *Dichrysis* Licht., *Trichrysis* Licht., *Spintharina* Sem., *Hexachrysis* Licht., *Teratochrysis* Sem., *Chrysis* L. Linsenmaier separated in genus *Chrysis* following subgenera: *Chrisogona* Forster, *Chrysis* L., *Praestochrysis* Linsen., *Pentachrysis* Licht., *Pseudotetrachrysis* Bisch., *Octochrysis* Mocs., *Eurychrysis* Bisch., *Platycelesia* Dahlb., *Trichrysis* Licht., *Chrysidea* Bisch., *Spintharina* Sem., *Cornuchrysis* Balt., *Pyria* Lepel. These taxa were separated by these authors on a basis of the III abdominal tergite structure. *Holochrysis* was synonymous with *Chrysura* by Kimsey and Bohart [1990] and this was completely justified. *Pentachrysis*, *Trichrysis*, *Chrysidea*, *Spintharina*, and *Praestochrysis* were rehabilitated as separate genera. All others were reduced to synonyms to the genus *Chrysis*.

It seems that the system by Semenov-Tian-Shanskij is rather rational. The tribe Chrysidini includes one genus *Chrysis* with a bulk of subgenera. Into the tribe Stilbini he included two genera: *Spinolia* and *Stilbum*, the latter consisting of subgenera *Spinolia* s.str., *Pseudochrysis*, and *Euchroeus*. They are all characterized by presence of teeth on the ventral side of *mesopleuron* and by the III tergite convexity, as well as by a short medial vein not reaching the fore wing border. Certainly, *Spinolia* and *Pseudochrysis* are good genera. However after the separation of a number of genera from the comprehensive genus *Chrysis*, it is difficult to give

a good diagnosis for it since it combines the characters of the separated genera.

This can be exemplified by the case of the *Ch. hexachrysis*-species group with species having 6 teeth on the hind margin of the abdominal tergite III arranged in one row, and the *Ch. inaequalis*-species group, with species having two teeth on *mesopleuron* and a saddle-shaped abdominal tergite III with a strong rolling, and 4 sharp spines of a different size on its anal margin. *Hexachrysis* was separated by Lichtenstein [1876] into a separate genus, but *inaequalis* shows characters of the tribe Stilbini. Moreover, in the genus *Chrysis* there are several species groups which have no teeth on the anal margin of the abdomen (*Ch. cuprata*, *Ch. millinaris*, and, partly, *Ch. succincta*).

Apparently, only simple leg claws, a long radial vein reaching the fore wing margin, and the scapal basin structure can be taken as the main characters characteristic for the genus *Chrysis*, since the genus *Chrysura* was separated on the basis of a flat and wide scapal basin, which is fully punctured, without corrugation, smooth areas, or a vertical line, and not outlined by a frontal keel. At the same time, the genera *Trichrysis* and *Chrysidea* have the traits characteristic for genus *Chrysis* — the radial vein reaching the hind wing margin and simple leg claws. However, *Chrysidea* has only one specific character — the absence of the discoidal cell.

We could not find any specific character of the genus *Chrysis*, characteristic only for this genus. This explains the difficulty of preparing a diagnosis of of the genus diagnosis. Apparently, it should include only an entire complex of characters.

The cladogram of the tribe Chrysidini prepared by Kimsey and Bohart [1990, P. 278, Fig. 90] shows no character specific for the genus *Chrysis*. This corroborates once more a difficulty with this genus diagnosis. Most probably this is why the authors included into the tribe Chrysidini all genera with a single common character - simple leg claws. Only the tribe Parnopini, the species of which also have such claws, was separated on an additional basis of some other characters.

On this stage of elaboration of the system of the family Chrysididae, we came to the conclusion that the former subfamily Cleptinae should be raised to a separate family. The tribe Parnopini should be considered as the subfamily Parnopinae within the family Chrysididae. For the genus *Chrysis* it would be better to accept Kimsey and Bohart's [1990] system and not to separate subgenera but only species groups.

FAM. CHRYSIDIDAE

Subfam. Chrysidinae

Tribe Elampini

Genera: *Elampus*, *Haba*, *Hedychridium*, *Hedychrum*, *Holopyga*, *Omalus*, *Philoctetes*, *Pseudomalus*

Tribe Chrysidini

Genera: *Brugmoia*, *Chrysis*, *Chrysura*, *Pentachrysis*, *Pseudospinolia*, *Spinolia*, *Stilbum*, *Trichrysis*, *Chrysidea*, *Arnoldia*, *Pseudochrysurina*

Subfam. Parnopinae

Tribe Parnopini

Genus *Parnopes*

As a result of such a comparative analysis of the reviews on chrysidid systematics by Semenov-Tian-Shanskij [1967], Linsenmaier [1969], and of the world fauna by Kimsey and Bohart [1990], and by the review of my own rather comprehensive collections, 20 genera of the family Chrysididae are accepted for the fauna of Tien Shan and adjacent territories. Their short diagnoses are presented in a proposed key to genera. Two new genera are described, based on a new species.

A KEY TO GENERA OF THE FAMILY CHRYSIDIDAE (HYMENOPTERA) FROM THE TIEN SHAN AND ADJACENT TERRITORIES

- 1(2). Tegula large, covers bases of both wings. Last abdominal tergite with two subapical pits and a knob; with numerous small regular apical teeth. Abdomen usually fulvous in colour, in males consists of 4 segments. Tegulae roughly punctured. Scutellum with a projection. Proboscis very long. Antennae thick **1. *Parnopes* Latreille, 1796**
- 2(1). Tegula small, not covering the bases of wings. Last abdominal tergite different. In males abdomen consists of 3 segments.
- 3(24). Claws in middle and hind legs always simple.
- 4(19). Medial vein not reaching hind margin of wing. Large wasps.
- 5(10). Mesopleuron ventrally with teeth, a node at pit row on abdominal tergite III present.
- 6(7). Mesopleuron ventrally with three teeth. Hind margin of abdominal tergite III with 4 teeth. Metanotum with a spoon-like process. Malar space long, frons narrow **2. *Stilbum* Spinola, 1806**
- 7(6). Mesopleuron ventrally with two teeth.
- 8(9). Anal margin of abdominal tergite III with 5 teeth, the middle one small. Metanotum distinct, evenly convex, without proboscis. Malar space not long, frons broad, its sides are parallel or diverging. Frontal keel distinct, M-shaped. Middle ocellus poorly outlined **3. *Pentachrysis* Lichtenstein, 1876**
- 9(8). Anal margin of abdominal tergite III with numerous irregular teeth, saw-like. Metanotum usually with very small convexity **4. *Brugmoia* Radoszkovskii, 1877**
- 10(5). Mesopleuron without teeth laterally. Knob above the apical pit row in abdominal tergite III absent.
- 11 (18). Discoidal cell well outlined.
- 12 (13). Anal margin of abdominal tergite III with numerous small teeth. Frons without frontal carina, concave, almost completely corrugated. Mesopleuron with an U-shaped process **5. *Spinolia* Dahlbom, 1854**
- 13 (12). Anal margin of abdominal tergite III without small teeth, simple, curved widely or sinuated backwards.
- 14 (15). Transverse frontal carina present. Mesopleuron with weak U-shaped proboscis **6. *Pseudospinolia* Linsenmaier, 1951**
- 15 (14). Transverse frontal carina absent.
- 16 (17). Mesopleuron with a weak scrobal sulcus. Middle area of the frons transversally corrugated. Pit row slightly depressed. Lateral sides of abdominal tergite III without knobs or bulbs **7. *Arnoldia* Yu. Tarbinsky, gen.n.**

- 17(16). Mesopleuron is strongly divided by scrobal sulcus into two parts. Pit row not depressed, pits small, shallow, poorly visible. Lateral sides of abdominal tergite III with a small distinct ledge, and a pit row behind it. Frons evenly punctured as in genus *Chrysura*, corrugation lacking ...
..... **8. Pseudochrysura Yu. Tarbinsky, gen. nov.**
- 18(11). Discoidal cell absent or weakly outlined. Abdominal tergite III with one tooth or knob on each side of anal margin, and a sinuous line between them. Usually small wasps, with green or blue body coloration
..... **9. Chrysidea Bischoff, 1913**
- 19(4). Radial vein reaching hind margin of wings. Wasps are differing sizes.
- 20(21). Frons wide, flattened, completely punctured, without corrugation or smooth areas. Transverse frontal carina absent. Anal margin of abdominal tergite III without teeth, even, oval. In many species pit row not deepen. Malar space and first antennal segment long
..... **10. Chrysura Dalbom, 1845**
- 21(20). Central part of frons smooth, with a weak corrugation and vertical line, concave usually. Anal margin of abdominal tergite III with 0–6 teeth, wavy. Transverse frontal carina present or absent. Malar space and antennal unit I different in size.
- 22(23) Distant margin of abdominal tergite III is three toothed. The middle tooth is small, and terminates longitudinal carina of the middle. Transverse frontal carina short, weak, usually V-shaped. Frons concave, with transverse corrugation at the middle
..... **11. Trichrysis Lichtenstein, 1876**
- 23(22) Teeth on distant margin of abdominal tergite III lacking or their number is not three
..... **12. Chrysis Linnaeus, 1761**
- 24(3) Claws in hind and intermediate legs dentate, pectinate, or fork-shaped, with additional tooth in the middle or near the base.
- 25(28) Claws in hind and intermediate legs fork-shaped.
- 26(27) Basal vein of fore wings almost completely straight or weakly curved. Lateral sides of abdominal tergite III with a dent or a protuberance. Stria between hind ocelli absent
..... **13. Hedychrum Latreille, 1802**
- 27(26) Basal vein of fore wings geniculate. Discoidal cell always pubescent. Stria between hind ocelli distinct. Dents on lateral sides of abdominal tergite III absent. Claws of intermediate and hind legs, but the fork-shaped, additionally with an oblique dent at the base
..... **14. Haba Semenov, 1954**
- 28(25) Claws of intermediate and hind legs dentate, pectinate, or with additional dent at the middle or at the base.
- 29(30) Claws of intermediate and hind legs with the only additional dent at the middle or at the base. Basal vein geniculate. Stria between hind ocelli present. Sometimes fore tibia with a longitudinal keel underside and strongly widen at base
..... **15. Hedychridium Abeille, 1878**
- 30(29) Claws of intermediate and hind legs dentate or pectinate.
- 31(38) Discoidal cells of wings lacking. Distal margin of abdominal tergite III depressed or structured.
- 32(33) Abdominal tergite III with apical membrane. Metanotum pointed and dorsally flattened. Female malar space always with elevated hairs
..... **16. Elampus Spinola, 1806**
- 33(32) Abdominal tergite III without apical membrane.
- 34(35) Mesonotum, excepting lateral sides, not punctured or with small sparse punctures. Malar space divided by malar sulcus into two sections. Metanotum finely rounded
..... **17. Omalus Panzer, 1801**
- 35(34) Mesonotum always punctured.
- 36(37) Distal part of mesonotum strongly punctured with large punctures. The rest surface punctured with different in size punctures. Metanotum widely rounded. Malar space divided by malar sulcus into two sections
..... **18. Pseudomalus Ashmed, 1902**
- 37(36) Mesonotum punctured only along the notauli, rarely puncturation is irregular. Malar space not divided into two sections by malar sulcus. Apex of abdomen lacking transparent margin. Metanotum conic or with process
..... **19. Philoctetes Abeille, 1879**
- 38(31) Discoidal cells of wings present ad always pubescent. Apex of abdomen simple, without additional structures. Claws of intermediate and hind legs with several dents. Basal vein of fore wings geniculate and forming almost completely right angle. Stria between hind ocelli present
..... **20. Holopyga Dahlbom, 1845**

ОПРЕДЕЛИТЕЛЬ РОДОВ СЕМЕЙСТВА *CHRYSIDIDAE* Тянь-
Шаня и сопредельных территорий

- 1(2) Тегула большая, прикрывающая основания обоих крыльев. Последний абдоминальный тергит с двумя субапикальными ямками и утолщением, с многочисленными маленькими регулярно сидящими зубчиками. Брюшко часто рыжее, у самца из 4 сегментов. Тегулы грубо пунктированы. Щитик с выростом. Язык очень длинный. Усики толстые
..... **Parnopes Latreille, 1796**
- 2(1) Тегула маленькая, не прикрывающая оснований обоих крыльев. Последний абдоминальный тергит имеет иное строение. Брюшко самцов состоит из трёх тергитов.
- 3(24) Коготки лапок средних и задних ножек всегда простые.
- 4(19) Медиальная жилка не достигает заднего края крыла. Размеры крупные.
- 5(10) Мезоплеврон снизу зубчатый, утолщение на третьем тергите над апикальным рядом ямок имеется.
- 6(7) Мезоплеврон снизу с тремя зубцами. Анальный край третьего тергита брюшка с 4 зубцами. Метанотум с желобчатым выростом в виде ложки. Щёки длинные, лоб узкий
..... **Stilbum Spinola, 1806**
- 7(6) Мезоплеврон снизу с двумя зубцами.
- 8(9) Третий тергит брюшка на анальном крае имеет пять зубцов, средний из которых маленький. Метанотум равномерно выпуклый, без выростов. Щёки недлинные, лоб широкий, стороны лица под глазами параллельны или расходящиеся. Лобный валик хорошо выражен, М-образный. Средний глазок слабо очерчен
..... **Pentachrysis Lichtenstein, 1876**
- 9(8) Третий тергит брюшка на анальном крае имеет многочисленные не совсем правильные шипы, пильчатый. Метанотум чаще с маленькой выпуклостью
..... **Brugmoia Radoszkovskii, 1877**
- 10(5) Мезоплеврон снизу без зубцов. Утолщение над апикальным рядом ямок отсутствует.
- 11(18) Дискоидальная ячейка хорошо очерчена.
- 12(13) Анальный край брюшка с многочисленными мелкими зубцами. Лицо без лобного валика, вогнутое, почти всё поперечно штриховано. Мезоплеврон с U-образным выростом
..... **Spinolia Dahlbom, 1854**
- 13(12) Анальный край брюшка без многочисленных мелких зубцов, простой, широко изогнутый или сужающийся к заднему краю.
- 14(15) Лобный валик имеется. Мезоплеврон с неясным U-образным выростом
..... **Pseudospinolia Linsenmaier, 1951**

- 15(14) Лобный валик отсутствует.
- 16(17) Мезоплеврон со слабым скробальным сулькусом. Лицо в середине поперечно штриховано. Ямочная линия слабо углублена. Боковые стороны 3 тергита без бугров и уступов **Arnoldia gen.n.**
- 17(16) Мезоплеврон резко и глубоко разделён скробальным сулькусом на две части. Ямочная линия не углублена, ямочки на ней мелкие, едва заметные. Боковые стороны третьего тергита имеют небольшой, но хорошо выраженный уступ, от которого начинается линия ямок. Лицо без поперечной штриховки, всё ровно пунктировано как у рода *Chrysura* **Pseudochrysura gen.n.**
- 18(11) Дислоидальная ячейка отсутствует или слабо очерчена. Третий тергит брюшка имеет на анальном крае по бокам по одному зубцу или бугру, пространство между которыми волнистое. Обычно размеры мелкие, цвет тела зелёный или синий **Chrysidea Bischoff, 1913**
- 19(4) Радиальная жилка достигает заднего края крыла. Размеры разные.
- 20(21) Лицо широкое, плоское, всё равномерно пунктировано, без штриховки, без гладких участков, без вертикальной полосы. Лобный валик отсутствует. Анальный край брюшка без зубцов, ровный, овальный. Ямочная линия у многих видов не углублена. Щёки и первый членник жгутика усиков длинные **Chrysura Dahlbom, 1845**
- 21(20) Лицо в середине гладкое, со штриховкой, вертикальной полосой или чертой, чаще углублённое, чем плоское. Анальный край брюшка имеет 0–6 зубцов, фигурный или волнистый. Лобный валик имеется или отсутствует. Размеры щёк и первого членника усиков разные.
- 22(23) Третий тергит брюшка имеет три зубца, средний из которых маленький и является завершением продольного валика. Лобный валик короткий, слабый, часто V-образный. Лицо вогнуто, всегда в центре поперечно штриховано **Trichrysis Lichtenshtein, 1876**
- 23(22) Третий тергит брюшка имеет иное количество зубцов, без зубцов, фигурный или волнистый **Chrysis Linnaeus, 1761**
- 24(3) Коготки лапок средних и задних ножек зубчатые, гребенчатые или вильчатые, с дополнительным зубцом посередине или ближе к основанию.
- 25(28) Коготки лапок средних и задних ножек вильчатые.
- 26(27) Базальная жилка передних крыльев почти прямая или слабо изогнута. Боковые стороны третьего тергита с большим или маленьким зубчиком или бугорком. Бороздка между задними глазками отсутствует **Hedychrum Latreille, 1802**
- 27(26) Базальная жилка передних крыльев коленчато изогнута. Дислоидальная ячейка всегда опушённая. Бороздка между задними глазками имеется. Зубчики по бокам третьего тергита брюшка отсутствуют. Коготки на средних и задних лапках помимо вильчатости имеют при основании наклонный зубчик **Haba Semenov, 1954**
- 28(25) Коготки средних и задних ножек иные (зубчатые, гребенчатые, с одним дополнительным зубцом посередине или при основании).
- 29(30) Коготки лапок средних и задних ножек с одним дополнительным зубцом посередине или у основания. Базальная жилка коленчато изогнута. Бороздка между задними глазками имеется. Иногда передние бедра снизу с продольным килем и к основанию сильно расширены **Hedychridium Abeille, 1878**
- 30(29) Коготки средних и задних ножек зубчатые или гребенчатые.
- 31(38) Крылья без дислоидальной ячейки. Анальный край брюшка часто с выемкой или с дополнительными структурами.
- 32(33) Третий тергит брюшка с апикальной плёнкой или мембраной разной конфигурации. Метанотум заострён и дорсально уплощён. Щёки самок всегда с отстоящими волосками **Elampus Spinola, 1806**
- 33(32) Анальный край брюшка без апикальной плёночной структуры.
- 34(35) Мезонотум не пунктирован или с мелкими редкими точками, за исключением боковых сторон. Щёки разделены на две секции щёчным гребнем. Метанотум гладко округлён **Omalus Panzer, 1801**
- 35(34) Мезонотум всегда пунктирован.
- 36(37) Мезонотум пунктирован в задней части крупными точками. Остальная его поверхность пунктирована разными по размеру точками. Метанотум широко округлый. Щёки разделены на две секции щёчным гребнем **Pseudomalus Ashmed, 1902**
- 37(36) Мезонотум пунктирован только вдоль нотаулей, реже неправильно пунктирован. Щёки не разделены щёчным гребнем на две секции. Анальный край брюшка без прозрачной каймы. Метанотум частично с выростом или конический **Philoctetes Abeille, 1879**
- 38(31) Крылья с дислоидальной ячейкой. Анальный край брюшка без вырезки и без дополнительных структур. Коготки средних и задних ножек с несколькими зубцами. Дислоидальная ячейка всегда опушённая. Базальная жилка передних крыльев почти прямоугольно коленчато изогнута. Бороздка между задними глазками имеется **Holopyga Dahlbom, 1845**

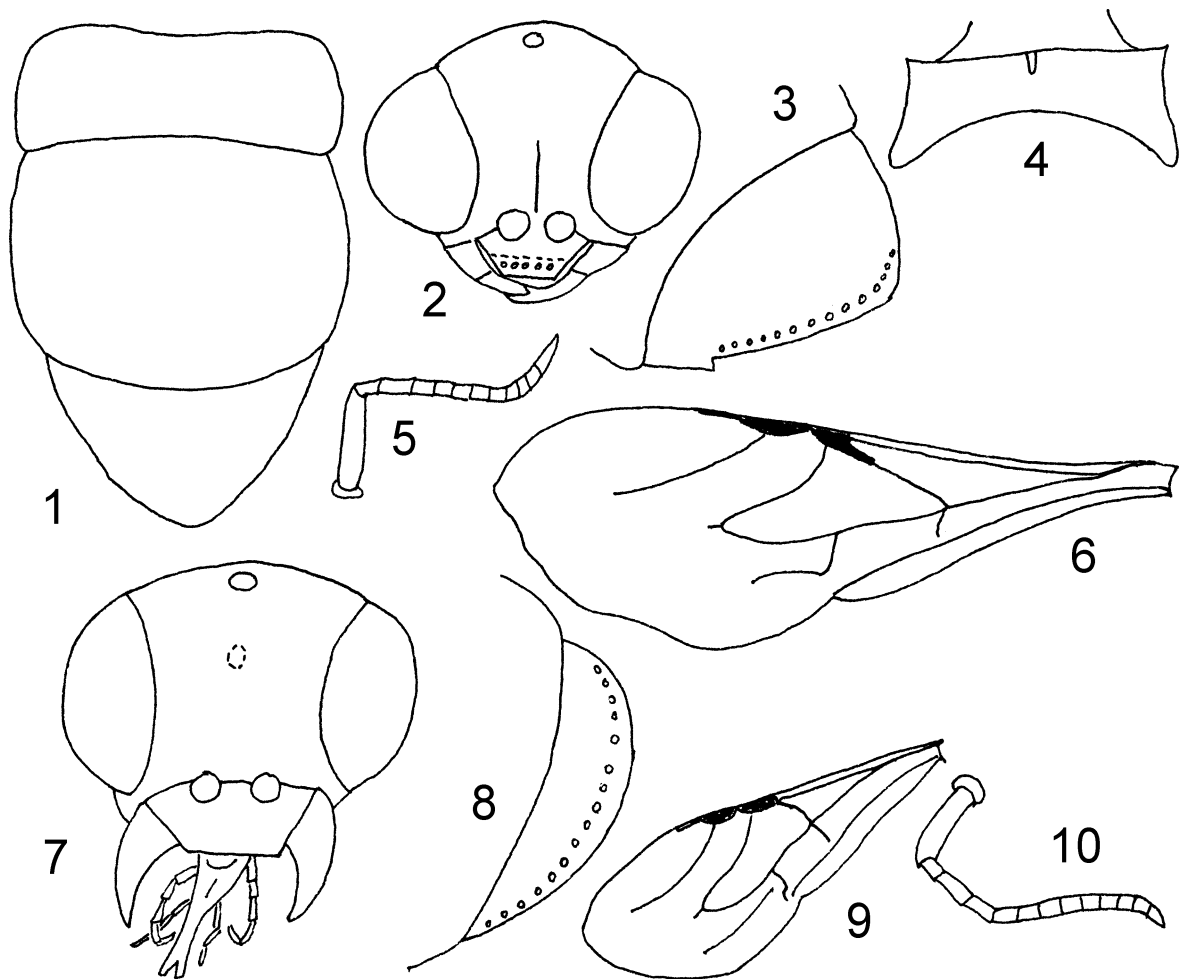
Pseudochrysura Yu. Tarbinsky, **gen.n.**

Figs 1–6.

Type species: *Pseudochrysura zonsteini* Yu. Tarbinsky, sp.n.

Description. Claws simple. Discoidal cell distinct. Radial vein of the fore wing does not reach the hind margin in the interval of 1/3 of its length. Frontal impression almost completely flat, with a longitudinal vertical line. Transverse frontal carina absent, antennae short. Mesopleuron strongly divided into two parts by scrobal sulcus. Lower part of mesopleuron almost triangular with vertical carina in the middle. Malar sulcus absent. Abdomen with an elongate III tergite, tapering towards apex. Pit row not depressed, with shallow pits. Lateral sides of abdominal tergite III with a sharp ledge, which begins the pit row. Scapal basin evenly and densely punctured, without corrugation. The body evenly and densely punctured, but the abdominal tergites II and III looks coriaceous.

Описание. Коготки простые. Дислоидальная ячейка хорошо очерчена. Радиальная жилка более чем на 1/3 своей длины не достигает заднего края переднего крыла. Лицевая впадина почти плоская, плавно переходящая в лоб, с продольной вертикальной чертой. Лобный валик отсутствует, усики короткие. Мезоплеврон резко разделён на две части скробальным сулькусом. Нижняя часть мезоплеврона, отделённая скробальным сулькусом, почти треугольная и в середине имеет вертикальный валик. Щёчный валик отсутствует. Брюшко с длинным третьим тергитом, сужающимся к анальному краю. Ямочная линия не углублена, ямочки мелкие. Боковые стороны 3 тергита с резким уступом, от которого начинается ямочная линия. Лобная впадина равномерно плотно пунктирована,



Figs 1–10. *Pseudochrysurina zonsteini* sp.n. (1–6) and *Arnoldia seraphimi* sp.n. (7–10): 1 — abdomen; 2, 7 — head; 3, 8 — anal part of abdomen; 4 — pronotum; 5, 10 — antennae; 6, 9 — fore wing.

Рис. 1–10. *Pseudochrysurina zonsteini* sp.n. (1–6) и *Arnoldia seraphimi* sp.n. (7–10): 1 — брюшко; 2, 7 — голова; 3, 8 — анальный край брюшка; 4 — пронотум; 5, 10 — усик; 6, 9 — переднее крыло.

без штриховки. Всё тело тоже равномерно плотно пунктировано, но тергиты 2 и 3 кожистые.

Pseudochrysurina zonsteini Yu. Tarbinsky, sp.n.

Figs 1–6.

Material. Holotype, ♀, Uzbekistan, Shurob vicinity, Dyubere-Olend Mts., 25.V 1997, S.L. Zonstein leg.

Description. Female. Body length 6.5 mm. Surface entirely dark green with scattered small brown spots. Scapus, pedicellum, and a basal half of the first antennal segment green, other segments and tarsi dark brown. Abdominal sternite II with two black roundish spots disposed at the middle part of sternite and separated from each other.

Head triangular, eyes large. Malar sulcus absent. Malar space less than 1 MOD. Scapal basin 3.5 MOD. Clypeus slightly convex, straight frontally. Scapal basin gradually but not deeply declined towards vertical middle line. Scrobal carina absent. Frontal basin gradually transformed into frons. Its width in the narrowest part equal to eye diameter. Transverse frontal carina absent. First antennal segment is 1/3 times longer than the second, the latter equal to the third. Proboscis is twice shorter than scapus.

Pronotum short, with rounded hind corners. Mesonotum with almost invisible notauli, looks monolithic. Middle plate of mesonotum widened towards the fore part. Scutellum long, flat. Postscutellum short, slightly convex. Propodial angles blunt. Mesopleuron deeply divided by scrobal sulcus, the lower part small, almost triangular, with a vertical carina at the middle. Carina separates the lower part from the flat fore part sloping towards the abdomen.

Abdomen slightly convex. Third tergite long, ovals pointed to apex. Pit row flat, pits shallow, sparse. Lateral sides of the third tergite with a sharp ledge at fore one third, pit row begins from it.

Body evenly and very densely punctured with small punctures. Frontal impression punctured with small punctures. Abdomen, and especially tergites II and III densely punctured, almost coriaceous. Sternites coriaceous.

Head and thorax covered with short sparse white hairs. Abdomen lacks hairs entirely.

Male unknown.

Etymology. The species is dedicated to entomologist Sergei Lvovich Zonstein, who kindly presented me material for description.

Arnoldia Yu. Tarbinsky, **gen.n.**

Figs 7–10.

Type species: *Arnoldia seraphimi* Yu. Tarbinsky, sp.n.

Description. Claws simple. Transverse frontal carina absent, scapal basin depressed, scapus very short. Proboscis long. In fore wings basal veins almost straight, medial ones not reaching the distal margin leaving a whole space in interval of 1/4 of its length. Mesopleuron convex, not marginate, with weak scrobal sulcus. Apical margin of abdominal tergite III oval, without teeth, pit row slightly depressed, pits shallow. Abdomen entirely punctured with even and dense punctures.

Onucanue. Коготки простые. Лобный валик отсутствует, лицевая впадина углублённая, скапус очень короткий. Хоботок длинный. Базальная жилка передних крыльев почти прямая. Медиальная жилка на 1/4 своей длины не достигает заднего края крыла. Мезоплеврон выпуклый, книзу покатый, не очерчен валиками, со слабым скробальным сулькусом. Анальный край брюшка овальный, без зубцов, ямочная линия слабо углублена с мелкими ямочками. Брюшко всё равномерно плотно точечно пунктировано.

Arnoldia seraphimi Yu. Tarbinsky, **sp.n.**

Figs 7–10.

Material. Holotype, ♀, Kyrgyzstan, Terskei Ala-Too Range, near Teploklyuchenka (Kyzyl-Suu), 19.VI.1995, S. Ovchinnikov leg. Paratypes: 1♀, Kichik-Alai Mt. Range, terrain Karagoi, 11.VII.1997, A. Puchkov leg.; 1♂, Fergansky Mt. Range, terrain Karaungur, 22.IV.1966, V. Krylova leg.; 1♀, 1♂, Uzbekistan, Chatkal Mt. Range, Syuren-Ata Mt., 15.VI.1997, S. Zonstein leg.

Description. Length — 6.5–8.5 mm. Scapal basin, frons, clypeus, scapus and pedicellum blue-green. Vertex and occiput dark violet, antennae black. Pronotum, mesopleuron, pronotal corners blue-green, scutum and scutellum blue-green with dark middle parts. Middle plate of mesonotum black, lateral plates blue-green with violet sides. Legs blue-green, except for brown tarsi. All abdominal tergites red-goldish, sternites red. Two small black quadrate spots on sternite III widely separated and set in its fore lateral angles. Tegulae blue-green.

Head roundish, transverse frontal carina absent, frontal impression not deep, frons broader than the diameter of eye, malar space slightly less than 1 MOD, scapal basin 3 MOD. Clypeus large, convex, straight distally; proboscis long, equal or slightly longer in length than the scapus. Short malar sulcus begins from the middle part of eye. Occiput without corners, scapus almost reaches the frons, first antennal segment twice longer than the second one, the latter equal to the third segment.

Pronotum short, mesonotum with a rectangular middle plate. Scutellum and postscutellum slightly convex. Propodeal corners distinct, with conical apices turned towards the

abdomen. Mesopleuron slightly convex, lower part without marginal carinae and spines.

Abdomen parallel-sided. Apical edge of tergite III evenly rounded, lacking teeth, with dark narrow margination. Tergite III short, pit row almost not depressed, pits small, noticeably separated from each other.

Wings hyaline, basal vein straight, discoidal cell well expressed.

Frons, vertex and occiput covered with dense, short, elevated white hairs. Similar but sparser pubescence entirely covers the surface of the thorax. Abdomen with sparse elevated hairs only on lateral sides of tergite I; all sternites covered with very dense and small hairs.

Etymology. The species is dedicated to my father, Serafim Tarbinsky, originator of entomological research in Kyrgyzstan.

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