

Two new North European species of the genus *Chrysis* Linnaeus (Hym., Chrysididae)

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An investigation of the North European *Chrysididae* has brought up several observations on the taxonomy and nomenclature of this little studied group. Here are described two new species belonging to the group of *Chrysis ignita* (Linnaeus, 1758). Unfortunately the second species is an intermediate form between some previously described species. Because of the different views about the taxonomy of these insects, there are reasons to settle the species and subspecies, which have here been separated as independent species.

If we pass merely with a mention the generally accepted species recorded in literature from this area, namely *C. ruddii* Shuckard, *C. fulgida* Linnaeus, *C. brevitarsis* Thomson, *C. iris* Christ and *C. indigotea* Dufour & Perris, Linsenmaier has described in his second publication (1959) containing this group in the whole 6 species and 8 subspecies occurring in North Europe. This practice is remarkable in that in one area not less than 4 subspecies of one species, for example *C. ignita* (L.) and *C. longula* Abeille, might live together at the same time. In addition to that they have been separated from morphological characteristics, which it is true are not always clearly unlike each other. Especially the ♂♂ are often difficult to identify.

I can not agree to this taxonomy. I think that these 'subspecies' are independent species when they have been correctly separated and identified. A subspecies, as I see it, is a regional taxon with small and often obscure characteristics. It is not a rare occurrence in zoology, that two species or more of them are very difficult to identify. In many cases the zoologists and especially the entomologists can identify one sex, either the ♀ or the ♂ only. Nature is not a stock of a hardware store with strict forms, dimensions and colours as characteristics of each one species. Here I have separated as species the following taxons described by Linsenmaier.

Chrysis rutiliventris Abeille. In North and West Europe ought be found the ssp. *vanlithi* Linsenmaier (1959, p. 153). The species is rare in North Europe and I have not seen specimens from Central Europe named as the nominate form by Linsenmaier. In any case the size and colour of the specimens, which I have examined, as well as the puncturation of the dorsal side of the gaster are to a great degree variable. Thus the separation of a subspecies seems to be doubtful. At the present I recommend the species name only.

C. mediata Linsenmaier. The ssp. *fenniensis* Linsenmaier (1959, p. 154) should be adopted in case the whole North European population is included under this name. The size, colour and somewhat the structure (especially the puncturation of the tergite 2 of the gaster) are variable in this widespread species. The identification of the subspecies seems confused to me in consequence of the specimens named as *C. mediata* by Linsenmaier. Two ♂♂ of them (Switzerland, Valais, 900 m, —.VII.1957. Zoological Institute of the University of Lund) belong to another species. It might be *clarinicornis* Linsenmaier, except that the pronotum is blue, not bright green. However, the colour is not a definite characteristic. In case this species is *clarinicornis*, it should be named as an independent species on the ground of the morphological characteristics. On the other hand, if it is the nominate form of *C. mediata* Lins. (This, namely one ♀, I believe to have in my collection from Central Europe.), the ssp. *fenniensis* Lins. should be named as a species. At the present I recommend *C. mediata fenniensis* Lins. as the single name of the North European subspecies, not for the small specimens in the shape of *C. angustula* Schenck only.

C. ignita (Linnaeus). I can not see a taxonomical value in the variation of the colour of the North European population. The form of the tergite 3 of the ♂ and particularly the dentate margin of it is variable, too. It is unnecessary to separate 'forms' 'A' and 'B' among the North European *C. ignita*. — I have at hand a ♀ from Central Europe named as '*C. ignita* L. var. *comta* Först.' The confusion betrays unreliability of the senior Central European experts in the Chrysididae.

C. schenckiana Linsenmaier [= *ignita schenckiana* Linsenmaier, 1959, p. 156]. This species, specially the large specimens are easy to mix with the following species. There is a good reason to write the name carefully, since it might be mixed with the species *C. schenckiana* Mocsáry, 1912 (East Africa).

C. impressa Schenck [= *ignita impressa* Schenck: Linsenmaier, 1959, p. 156]. This species is often very difficult to identify. Especially the large and robust specimens often look like *C. ignita* (L.) and the ♂♂ are often difficult to separate from *C. mediadentata* Linsenmaier.

C. mediadentata Linsenmaier [= *ignita mediadentata* Linsenmaier, 1959, p. 157]. Excluding the before-mentioned, particularly the ♂♂ of *C. subcoarctata* Lins. might be mixed with this species.

C. pseudobrevitarsis Linsenmaier. The ♀ is not difficult to identify, the ♂ on the contrary might often be mixed with other species, for example *C. longula* Ab. and *C. ignita* (L.). — However, I have at hand a Macedonian ♀ named as '*C. ignita* L. var. *comta* Först.' by a Central European expert.

C. angustula Schenck. Linsenmaier (1959, p. 159) has separated a ssp. *angustula gracilis* Schenck [= *Chrysis gracilis* Schenck, 1856, p. 30], but I think it is a synonym. The size, the puncturation of the dorsal side of the gaster (particularly of the tergite 2) and the colour are very variable in this common species. I have not seen a reason for an infraspecific division in the large North European material.

C. longula Abeille. I have not seen the types of the ssp. *longula sublongula* Linsenmaier (1959, p. 159). Thus I can not judge the position of this taxon. In any case, about twenty examined North European specimens named as *sublongula* by Linsenmaier are only small specimens of *C. longula* Ab., with

the exception of one incorrectly identified ♂ of *C. subcoriacea* Lins. I have found here only a gradual variation. Thus I have considered it unnecessary to separate a subspecies from North Europe.

C. subcoriacea Linsenmaier [= *longula subcoriacea* Linsenmaier, 1959, p. 160]. This is an independent species, but sometimes not easy to identify. Some specimens of *C. longula* Ab. having a dense and dull puncturation between the large punctures in the tergites 2 and 3 might easily be mixed with *subcoriacea*. Linsenmaier has identified a rare Finnish variety, one ♀ in the Zoological Museum of the University of Helsinki, as '*C. longula* Ab. var. *aeneopaca* Lins.' [= *longula aeneopaca* Linsenmaier, 1959, p. 160]. This specimen having unusually smooth and slightly punctured tergites 2 and 3 of the gaster, is difficult to identify. Therefore I thought at first, it might be a variety of *C. longula* Ab. I have not seen the type of *aeneopaca* Lins. and can not judge the position of that taxon. However, it is unnecessary to name the rare North European variety as a subspecies, particularly since the before-mentioned specimen possibly is not identical with the type.

It is my purpose on a future occasion to give a key for the North European *Chrysididae*. However, rich material and much trouble is needed for the identification of the species in the group of *Chrysis ignita* (L.).

Noskiewicz and Lorencowa (1963) have described the retracted segments of the gaster in several species of this group. Unfortunately I have had not enough time to study the retracted segments of some species, which they have not described for these parts. In any case the retracted segments seem to be much like each other in closely related species.

Chrysis corusca n. sp., ♀.

♀. Size and shape much like *C. angustula* Schenck with the following differences: Head little shorter than in the middlesized and small specimens of *C. angustula*; the tergites 2 and 3 of the gaster with strong and deep punctures.

The length of the vertex little shorter than the breadth seen from above, when it is measured as the shortest distance of the compound eyes; the ratio length: breadth=20:21—22. The toothless mandibles and the antennae similar to *C. angustula*. Pronotum with a middle groove reaching to the half way from the anterior edge (distinct over the half way or near the posterior end in *C. angustula*). The tergite 2 at the base with as strong punctures as the tergite 1 or nearly similar to it; the punctures weakening gradually to the posterior end and resembling much the punctures of this tergite of *C. impressa* Schenck. The tergite 3 superficially punctured and before the end margin less saddleshaped as in *C. angustula*. The dorsal side of the gaster is unusually shining, the teeth of the end margin more sharp than in *C. angustula*. The structure of the legs and the length of the tarsi without differences from the normal type in the group of *C. ignita*. Length of the body: 7.5—8 mm.

The colour in the type specimens: The dorsal side of the head (including the face) and thorax deep blue with green stripes at the rands of the pronotum. The sides and ventral side largely deep green — dark turquoise with green colour and a golden shine as large spots in the pronotum, propleura, episternum 2 and the ventral side of the coxae. The dorsal side of the gaster

red — yellowish red with an intensive golden shine. The shining areas of the sternits (i.e. sternits excluding spot-shaped black areas at the sides) green or red with a golden shine.

The holotype and 2 paratypes are found from one place: Sweden, Nrk. Åsbro Lerbäck, 3 ♀♀ in 1968 (G. Hallin), Swedish Museum of Natural History, Stockholm.

Chrysis scintillans n. sp., ♀, ♂.

♀. Much like *C. mediata fenniensis* Linsenmaier with the following differences: The tergits 2 and 3 of the gaster with somewhat more strong and sparse punctures, the tergite 3 almost constantly saddle-shaped before the end margin and much like this part of *C. impressa* Schenck but more rounded at the edges and with more slight punctures. Instead of that, it seems to be easily distinguishable from *C. mediata mediata* Linsenmaier.

The form of the head, toothless mandibles, antennae, thorax and legs similar to the ♀ of *C. mediata fenniensis* Lins. The tergite 2 as broad or less broad as the tergite 1 (In *C. mediata fenniensis* the tergite 2 is usually distinct the broadest part of the gaster.), and at the base with almost as strong and deep punctures as the tergite 1. The punctures are obvious more slight and sparse at the half way and superficial at the posterior end of the tergite, much like *C. impressa* Schck. The length of the body: 7—9.5 mm.

The colour: Head and thorax dark blue — dark green with deep green — bright green stripes and spots often shining like gold, or about in a fifth part of the specimens copper-coloured spots in the following parts: the rands of the pronotum, large spots at the sides, the ventral side to a large degree and the ventral side of the coxae, which often are shining deep red — deep Magenta. The dorsal side of the gaster deep red — deep Magenta, usually with a less intensive shine. The shining parts of the sternits usually deep green or green, in about a fifth part of the specimens deep red, with a more or less intensive golden shine.

♂. More difficult to separate from *C. mediata fenniensis* as the ♀, and the identification in a part of the paratypes uncertain. It might be mixed with *C. impressa*, too. The tergite 2 with more strong and rough punctures than in *C. mediata fenniensis*, but variable in the both species. The length of the body: 6.5—8.5 mm.

The colour is usually more dark and less varicoloured than in the ♀. Head and thorax: the dorsal side dark green — blackish blue, the ventral side dark green — dark turquoise, and in a fifth of the ♂♂ deep green with a golden or deep red shine. The gaster similar to the ♀ with the exception, that the tergite 2 in the middle with a deep blue — dark blue shine.

Holotype: Finland, EH (=Ta). Vanaja, ♀ 23.VII.1962 (E. Valkeila), Zoological Museum of the University of Helsinki. The other specimens given in subsequent text are paratypes.

Distribution on the ground of the type material:

Sweden, Sm. Nottebäck Klavreström, ♀—VI.1936 (C. B. Gaunitz). — Gstr. Hille, ♀ 29.VI.1948, ♀ 22.VI.1960, ♀ 23.VII.1960 (Kj. Fahlander), Zoological Institute of the University of Lund. — Nrk. Åsbro, ♀ 16.VI.1968 (G. Hallin). — Jmt. Undersåker, 1000 m, ♀ 16.VII.1948 (C. B. Gaunitz), Swedish Museum of Natural History, Stockholm. — Dlr. St. Tuna, Norr Romme, ♀ 3.VII.1936 (Eric Dahl), coll. Tjeder.

Finland, A (=A1). Eckerö Torp, 2 ♀♀ 16. and ♀ 19.VII.1967 (J. Perkiömäki); Geta, ♀

15.VII.1957 (J. Perkiömäki); Jomala, ♀ 14.VII.1966 (J. Perkiömäki); Lemland Flaka, ♂ 6. and ♂ 8.VII.1962 (J. Perkiömäki). — V (=Ab). Karjalohja, ♀ 16.VII.1954 (J. Perkiömäki); Karuna, 1 ♂ (A. Merisuo); Turku, 1 ♀ (A. K. Merisuo); Rymättylä, ♀ 12, 2 ♀♀ 15, ♀ 21. and ♂ 24.VII.1967, ♀ 11. and 3 ♀♀ 27.VIII.1967, ♀ 17.VI.1968, ♂ 4.VII.1968, ♀ 22. VIII.1968 (A. K. Merisuo), ♀ and ♂ 3.VII.1967 (J. Perkiömäki), 2 ♀♀ 19. and ♀ 25.VIII. 1967 (E. Valkeila); Särkisalo, 1 ♂ (P. Niemelä — Zoological Museum of the University of Turku). — U (=N). Helsinki, ♀ 27.VI.1964 (J. Perkiömäki), Helsinki, isle Villinki, ♂ 8.VII. 1962 (O. Ranin — coll. Valkeila). — EH (=Ta). Ypäjä, ♀ 9.VIII.1958 (J. Kantee — Natural History Museum of Forssa); Somero, ♀ 19. and ♀ 23.VI.1946 (A. K. Merisuo); Janakkala, ♂ 24.VI.1967, ♂ 2.VII.1967 (E. Valkeila); Vanaja, 1 ♀ bred from a nest of *Ancistrocerus trifasciatus* (Müll.) in 1951, 2 ♂♂ 2.VII.1954, ♂ 17.VI.1960, 3 ♀♀ 23.VII. 1962, one of them the holotype, ♂ and 2 ♀♀ 22.VI.1965, ♀ 16.VIII.1965, ♂ 11.VI.1966 (E. Valkeila); Hämeenlinna, ♂ 7.VI.1949, ♂ 6.VI.1954, ♀ 18.VII.1957, ♀ 17.VII.1965, ♂ 7.VI.1969 (E. Valkeila); Hattula, ♀ 10.VIII.1957, ♀ 19.VIII.1965, ♂ 18.VI.1969 (E. Valkeila); Tyrväntö, ♀ 21.VI.1969 (E. Valkeila); Pälkäne, ♀ 19.VI.1960 (E. Valkeila); Lammi, ♀ 29.VII.1957 (T. Kontuniemi). — PS (=Sb). Vehmersalmi, 2 ♀♀ 7.VII.1942 (D. Hemdal — Zoological Museum of the University of Helsinki).

USSR, the district of Leningrad. 'Viipuri' (Viborg), 2 ♀♀ and 1 ♂ (V. A. Löfgren — coll. Merisuo); Terijoki, ♀ 14.VII.1932 (V. A. Löfgren); Rautu, 1 ♀ (K. Ehnberg — Zoological Museum of the University of Helsinki); Metsäpirtti, 2 ♂♂ 12.VII.1934 (A. K. Merisuo), ♂ 18.VI.1930 (V. A. Löfgren); Gižino (Labelled with the Finnish name 'Kuujärvi'), ♀ 15.VII.1943 (W. Hellén — Zoological Museum of the University of Helsinki).

References: Linsenmaier, W. 1951. Die europäischen Chrysididen (Hymenoptera). Mitt. Schweiz. Entomol. Ges. 24: 1—110. — 1959, Revision der Familie Chrysididae (Hymenoptera). Ibid. 32: 1—232. — Noskiewicz, J. und Joanna Lorencowa. 1963, Die verdeckten Segmente der Gruppe *Chrysis ignita* L. (Hymenoptera, Chrysididae). Bull. Entomol. Pologne 33: 119—160.