

The occurrence of *Megachile argentata* F. and *rotundata* F. in the Scandinavian countries. (Hym.)

By

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Some years ago B. Tjeder (1954) published a list of the insects which he had captured in the eastern part of the province of Skåne. In the list he mentioned *Megachile rotundata* F. from some localities.

The information about this occurrence of *Megachile rotundata* in southern Sweden is of a certain interest as up to now this species in the Scandinavian countries has been found only in Finland, from which country it was mentioned for the first time by Forsius (1921). In Sweden and Denmark we have the closely allied species *M. argentata* F. which is lacking in Finland.

To begin with I was doubtful whether the report of *M. rotundata* in Sweden was correct. However, the report could not be dismissed as wrong as I had had opportunity to control the specimens. It was conceivable that the species occurred on suitable localities in eastern and southeastern Sweden but had been overlooked on account of incomplete investigations.

The question about the occurrence of these two species of *Megachile* came to the fore in the summer of 1958 when I had the opportunity to make extensive investigations in southern Sweden by means of a grant of the Swedish Natural Science Research Council, inter alia in the districts from which Tjeder (l.c.) mentioned *M. rotundata*. In spite of unfavourable climatic conditions I was successful in finding several specimens of *M. argentata*, but no individuals of *M. rotundata* were captured.

After my return home I have had an opportunity of examining the specimens captured by Tjeder. All these individuals belong to *M. argentata*. I have also investigated the individuals belonging to the entomological collections of the Museum of Natural History of Stockholm, the Zoological Institute of Lund and the Zoological Museum of Copenhagen. All the individuals of these collections belong to *M. argentata*.

As it was possible that some individuals belonged to *M. pilidens* Alfken (Alfken 1923), a species closely allied to *M. argentata*, I have set about examining males and females of *M. pilidens* from Dr. P. Blüthgen. But a comparison between these individuals and those of *M. argentata* showed that all individuals captured in Sweden and Denmark belonged to *M. argentata*. For a comparison with *M. rotundata* I have received materials of this species from Finland (coll. R. Elfving and E. Valkeila) and also used my own collections from Spain and the French Riviera.

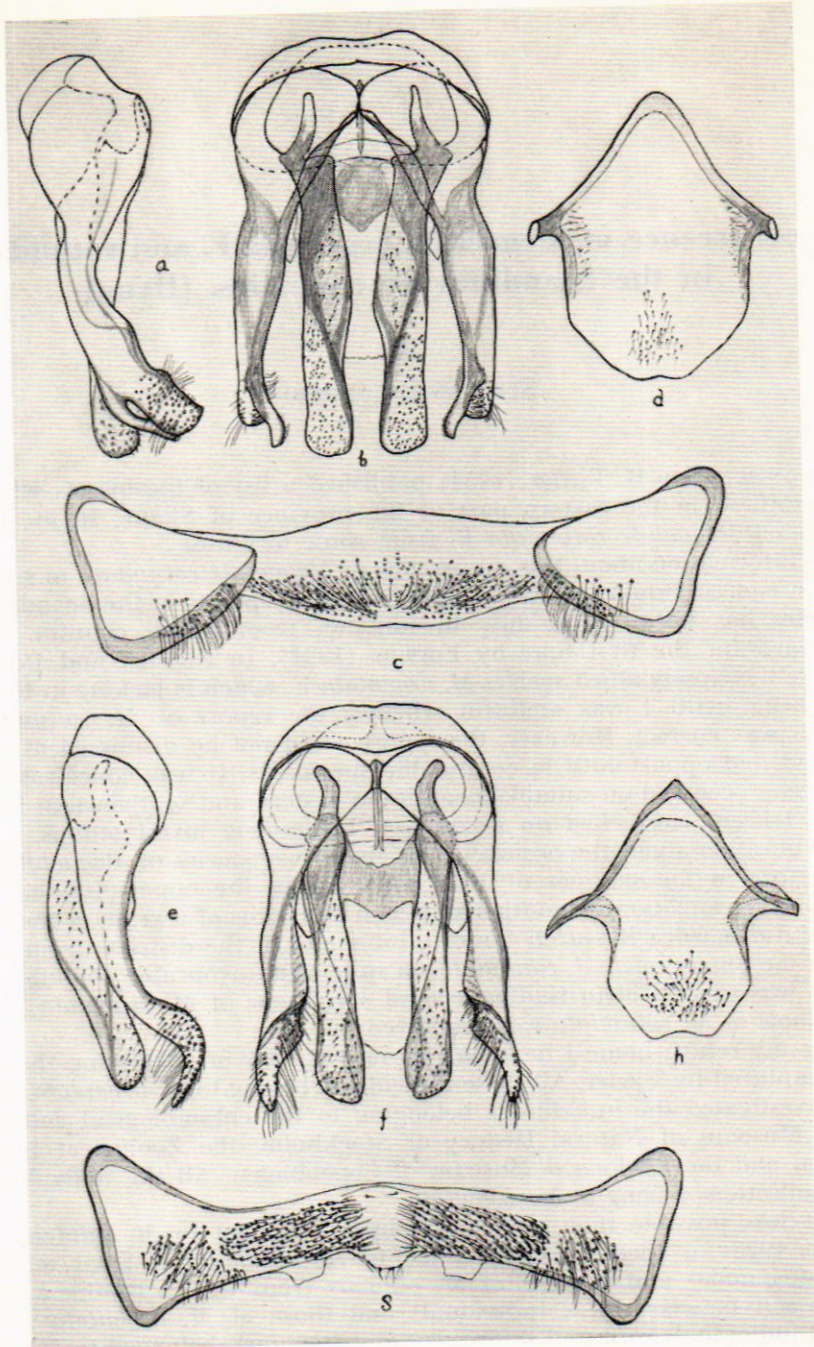


Fig. 1. *Megachile argentata* F.: The male genitalia, a. side and b. dorsal view, c. 6th sternite, and d. 8th sternite. *Megachile rotundata* F.: the male genitalia, e. side and f. dorsal view, g. 6th sternite, and h. 8th sternite. Auctor del.

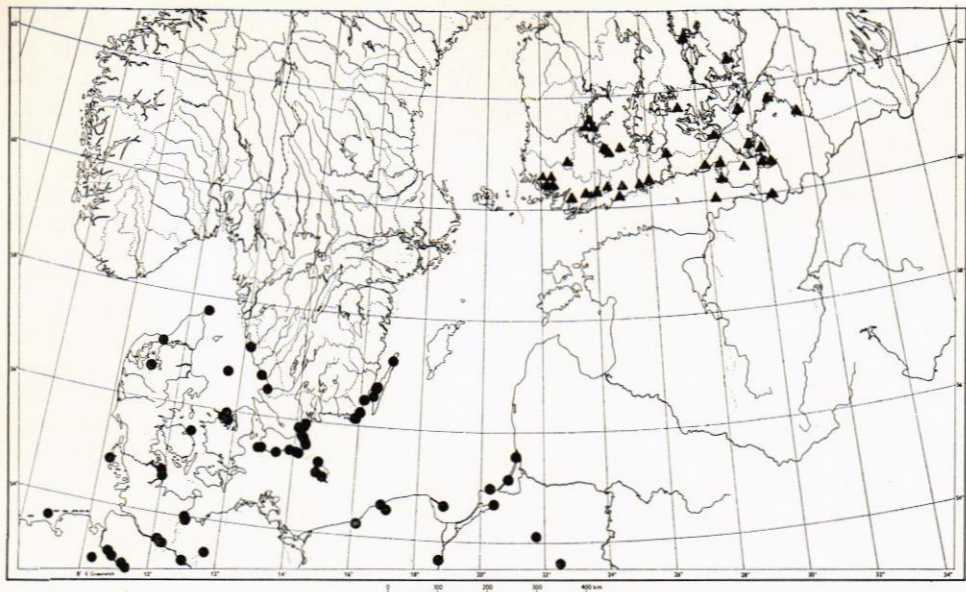


Fig. 2. The distribution of *Megachile argentea* F. (●) and *Megachile rotundata* F. (▲) in Fennoscandia.

The species belonging to the group of *M. argentea* are difficult to determine in spite of good analytical tables. Certainly Friese (1899 and 1911) has dealt with these species, but contradictory specifications in the analytical tables and in the more detailed descriptions of the species complicate determinations.

The males of *M. argentea* and *M. rotundata* are very easy to distinguish in consequence of the clearly different shape of the male genitalia (Fig. 1). On the other hand there can be trouble with the determination of the females, but Blüthgen (1919) has given some good information concerning this question.

However, it would be desirable to receive an exact revision of all the European species belonging to the group of *M. argentea* and also including the species of the eastern Europe. As it is, the taxonomy of these species is an intricate problem.

In order to get a survey of the occurrence of these two species in the Scandinavian fauna I have drawn up a map of distribution. As the species have different ranges in Scandinavia it is possible to use one map (Fig. 2). Besides I have included their distribution on the continent as far as the map has admitted and required information of localities could be obtained (Alfken 1912, 1913 a, 1913 b, 1915; Baer 1904; Blüthgen 1919; Möschler 1938; Wagner 1937, 1938). The Swedish localities of *M. argentea* are brought together in a separate list. In Denmark *M. argentea* is more common than the map shows. Jørgensen (1921) says that it is known from all parts of the country and is very common in some places.

Concerning the distribution of *M. rotundata* in Finland the map is drawn

up after the list of localities which was made up by Niemelä (1936). This list of localities is completed by new finds communicated by R. Elfving (Kuopio), T. Grönblad (Tammerfors), W. Hellén (Helsingfors), and E. Valkeila (Hämeenlinna). Prof. V. Popov (Leningrad), Prof. J. Noskiewicz (Wrocław), and Dr. P. Blüthgen (Naumburg a.S.) have given valuable information. To all these gentlemen my thanks are due.

M. argentata is distributed over the whole of Europe including England (Saunders 1884), North and Middle Asia and the North of Africa. In Sweden it occurs almost solely on really sandy ground and dunes in the south part of the country. Its occurrence in Denmark is similar. But it occurs also in suitable inland localities (Jansson 1922). The nest is built in sand with sparse vegetation. On some Swedish seashore-localities I have seen it flying in very strong wind. Together with *M. argentata* I have captured the parasites *Coelioxys mandibularis* Nyl. and *Dioxys tridentata* Nyl. Both males and females have been taken visiting the following flowering plants: *Geranium silvaticum*, *Lotus corniculatus*, *Thymus serpyllum* and *Trifolium repens*.

M. rotundata occurs in the South and Middle Europe, Asia Minor and the North of Africa. But recent investigations have shown that in eastern Europe it goes up to Finland, and the Finnish localities are in direct connection with the occurrences in USSR and Poland. *M. rotundata* is not in the same manner committed to sandy ground as *M. argentata*, though it is found on such localities too. Concerning its manner of living in Finland Niemelä (1936) says: "Nistet bei uns in Stockwänden in den dort befindlichen Gängen von Käferlarven, mitunter habe ich die Art sogar im sandigen Boden nisten gesehen."

Megachile argentata F.

List of habitat

Sweden

Skåne: Kåseberga 5/7 1829 (♀) C. G. Thomson. 16/7 1940 (♂). S. Selander. Bedinge 28/7 1935 (♀♂). S. Selander. Degeberga 26/7 1938 (♂). S. Selander. Sandhammaren 21/7 1939 (♀♂). S. Selander. 5/8 1950 (♀). B. Tjeder. 22/7 1958 (♀♂). S. Erlandsson. Falsterbo 29/6 1939 (♀), 7/7 1939 (♀), 15/7 1939 (♀), 20/6 1940 (♀♂), 26/6 1940 (♀). S. Selander. Ljunghusen 12/6 1940 (♀). S. Selander. Vik 25/6 1940 (♂). S. Selander. Kåseberga 16/7 1940 (♂). S. Selander. Yngsjö, seashore 16/7 1945 (♀) G. Wängsjö. Haväng 30/6 1947 (♀). S. Selander. Vitemölla 21/6 1948 (♀). B. Tjeder. 22/8 1954 (♀♂). O. Lundblad. 28/7 1958 (♀♂), 30/7 1958 (♀♂). S. Erlandsson. Löderup, seashore 18/7 1950 (♀), 27/7 1950 (♀♂). B. Tjeder, 19/7 1958 (♀♂). S. Erlandsson. Borrby: Målarhusen 28/7 1950 (♀). B. Tjeder. Ystad, seashore 24/7 1958 (♂). S. Erlandsson. Simrishamn 26/7 1958 (♂). S. Erlandsson. Åhus, seashore 4/8 1958 (♀). S. Erlandsson. — Blekinge: Sibbaboda 7/8 1958 (♂). S. Erlandsson. Torhamn: Sandhamn 8/8 1958 (♀). S. Erlandsson. — Halland: Varberg (♀). Chr. Aurivillius. Skummeslöv 28/7 1930 (♀), 22/7 1935 (♂). 5/7 1938 (♀), 26/6 1938 (♀). S. Selander. Steninge bruk 8/8 1956 (♀♂) S. Erlandsson. — Småland. Söderåkra: Stuvnäset 14/7 1927 (♂). G. Wängsjö. — Öland: Hornsjön 26/6 1920 (♀), 1/7 1920 (♀♂). A. Jansson. Glömminge 13/7 1932 (♀). G. Hedgren. Algutsrum 3/7 1941 (♂). H. Lohmander. Mörbylånga 16/6 1950 (♂). Fr. Ossiannilsson, 23/7 1952 (♀♂). E. Kjellander.

References

- ALFKEN, J. D. 1912. Die Bienenfauna von Westpreussen. Ber. d. Westpreuss. Bot.-Zool. Ver. **34**. Danzig.
- 1913. Die Bienenfauna von Bremen. Abh. Nat. Ver. Bremen **22**.
- 1913. Die Bienenfauna von Ostpreussen. Schr. Phys.-Ökon. Ges. Königsberg in Pr. **53**.
- 1915. Beitrag zur Bienenfauna von Ostfriesland. Festschr. d. Naturf. Ges. zu Emden.
- 1923. Zur Kenntnis einiger Arten der *Megachila argentata*-Gruppe. Mus. im. Dziedszyckich Rozp. iwiedo. **19**. Lwow.
- BAER, W. 1904. Zur Apidenfauna der preussische Oberlausitz. Abh. Naturf. Ges. Görlitz. **24**.
- BLÜTHGEN, P. 1919. Die Bienenfauna Pommerns. Stett. Entom. Zeitschr. **80**.
- FORSIUS, R. 1921. Nya eller sällsynta bin. Not. Entom. **I**. Helsingfors.
- FRIESE, H. 1899. Die Bienen Europas. **5**. Innsbruck.
- 1911. *Apidae* I. *Megachilinae*. Das Tierreich. Berlin.
- JANSSON, A. 1922. Faunistiska och biologiska studier över insektlivet vid Hornsjön på norra Öland. K.V.A. Ark. f. zool. **14** N:o 23. Uppsala.
- JØRGENSEN, L. 1921. Bier. Danmarks Fauna 25. København.
- MÖSCHLER, A. 1938. Ein Beitrag zur Bienenfauna in Ostpreussen insbesondere der Kurischen Nehrung. Schr. Phys.-Ökon. Ges. Königsberg in Pr. **70**.
- NIEMELÄ, P. 1936. Mitteilungen über die Apiden Finnlands. 1. Die Gattung *Megachile* Latr. Ann. Ent. Fenn. **2**. Helsinki.
- SAUNDERS, E. 1884. Synopsis of British Hymenoptera. *Anthophila*, part II., *Apidae*. Trans. Ent. Soc. London.
- TJEDER, B. 1954. Östskånska insekter 2. Opus. Enom. **29**. Lund.
- WAGNER, A. C. W. 1937. Die Stechimmen (Aculeaten) und Goldwespen (Chrysididen s.l.) des westlichen Norddeutschland. Verh. d. Ver. f. naturwiss. Heimatforschung zu Hamburg. **26**.
- 1938. Verbreitungsgrenzen und Verbreitungswege der Stechimmen (Aculeaten) in westlichen Norddeutschland. Ibid. **27**.