The occurrence of Philanthus triangulum F. in the Scandinavian countries. (Hym. Sphecidae)

By

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In connection with the investigations of the bee-fauna in south-eastern Sweden during the summer of 1958 I also captured other aculeate hymenoptera. One of the interesting finds was *Philanthus triangulum* F. which was captured in some localities not earlier known.

To this insect has been paid great attention because of its peculiar manner of living. Ander (1942) has compiled the distribution of *Philanthus* in Sweden and Denmark. He points out the fact that this insect seems to be advancing northwards. Later, Hansson (1951) directs the attention of the beekeepers to the fact that *Philanthus* seems to be more common now than earlier.

On examining the species in my collection it was brought back to my memory that I had seen a femal captured in the summer of 1949 in the old gravel-pit near Brandalsund about 15 km south of Södertälje. In the same year *Philanthus* was captured for the first time in Finland (Valkeila 1952). As the expansion of this insect to the north is of a zoogeographical interest, I have set about studying the recent distribution of *Philanthus* in the Scandinavian countries. Thanks to extensive inquires and studies in collections I have been informed of 37 new Swedish localities. To that is to be added new finds in Denmark and Finland (see the list of localities). According to Dr. L. F. Natvig, Oslo, *Philanthus* has not been captured in Norway. On the basis of all known occurrences a new map of distribution has been drawn up.

But before I discuss this map I will mention the occurrence of *Philanthus* in some localities. The late Dr. S. Selander gave me the first notice of a locality with very large number of nests. In the summer of 1943 he discovered several hundred nests under the cement plates of a broken tennis-court. At my visit in the locality in August of the same year I saw the animated traffic of females flying to and fro the nests. In Selander's collection there are only specimens captured in the years 1945 and 1946. The existence of nests under stone slabs and even between paving-stones have been reported by C. Ander, Hårsbäck, and Lindgren (1960). Prof. O. Lundblad has communicated that at Visby, Gotland, in the summer of 1956 he counted *Philanthus* in thousands, and the males could be collected from the inflorescences

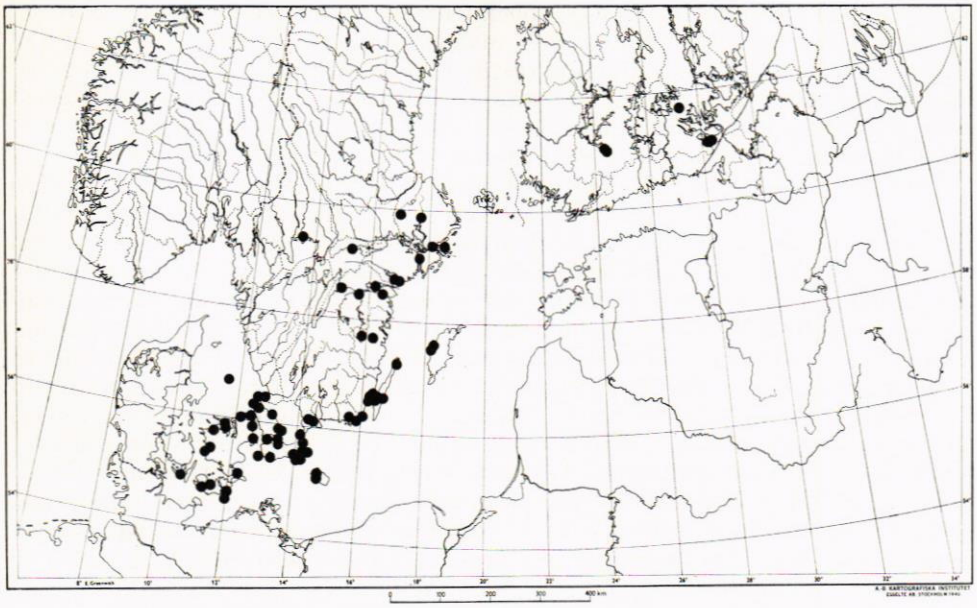

Fig. 1. The distribution of *Philanthus triangulum* F. in Fennoscandia.

of an umbelliferous plant directly into a capturing-glass. In Kristianstad I have seen a large colony of *Philanthus*. The nests were dug in a grassgrown slope and I found 80 nests. The females captured the honey bees when they visited the inflorescences of *Solidago canadense*. On the other hand the males visited the flowers of *Eryngium planum*. In consequence of the cold weather I could gather the males with my fingers.

Ander (1942) points out that the size of *Philanthus* communicated by Aurivillius (1901) is only valid for the males. So he gives the size of males as well as females. Besides he gives the breadth of the head and the length of the wings. I have had the opportunity of measuring a great number of *Philanthus* from two different localities. The measuring have given the following results:

Besides I have measured all other individuals which I have seen. The measurings agree with the above values.

Ander (l.c.) also calls attention to the yellow markings of the thorax and

	Nyköping (coll. E. Kjellander)		Visby (coll. O. Lundblad)	
	♂ (82)	♀ (22)	♂ (21)	♀ (18)
Total length	9.0—13.5 mm	13.8—16.0 mm	9.0—13.3 mm	13.9—16.0 mm
Width of the head ..	3.0— 4.4 „	4.3— 5.3 „	3.3— 4.2 „	4.4— 5.2 „
Length of the right forewing	8.0—11.2 „	10.0—12.5 „	8.2—11.0 „	10.1—12.4 „
Length of the left forewing	8.0—11.2 „	10.0—12.5 „	8.2—11.0 „	10.1—12.4 „

abdomen. The majority of the specimens have a normal colour pattern. However, the males show a darker making than the females. Some of the females show a marked reduction of the black marking on the tergites 2—4. But I have not seen as light coloured specimens with yellow or almost yellow tergites as the specimens from Cros de Cagnes (The French Riviera) and Marbella and San Diego (Guardiaro) in Southern Spain.

Now we pass to the map of distribution. A comparison between this map and Ander's map (1942) shows that there is an important increase of number of localities in Sweden as well as in Denmark. The northernmost localities in Sweden are Hårsbäck and Upsala, both situated in the province of Upland. The Finnish localities are situated farther to the north. Concerning the distribution in Denmark, Faester (in a letter) has drawn attention to the fact that *Philanthus* has not yet been found in Jutland and in the Island of Fyen. The same conditions prevail in Western Sweden and in the South Swedish Upland and in Norway. I have been in touch with several bee-cultivators, but not a single one has seen or heard of an occurrence of *Philanthus* in these territories. This is scarcely due to lack of suitable localities for building nests or to unfavourable climatic conditions. *Philanthus* occurs even in Great Britain with its maritime climate (Yarrow 1943 p. 67). The Danish localities are in direct connection with the occurrences in North Germany (Wagner 1937).

The largest occurrences in Sweden are in all probability the two ones which Tjeder (1951, 1954) found at Kivik and Löderup in south-eastern Scania. In the last-mentioned locality he calculated that there were about 2000 nests.

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Philanthus triangulum F.

List of habitat

Sweden

Skåne: Degeberga 26/7 1938 (♀); 13/7 1940 (♀). S. Selander. Sandhammaren 21/7 1939 (♂), 15/7 1940 (♀). S. Selander. Falsterbo 28/7 1939 (♂). S. Selander. Gladsax: Tjörnedala 14/7 1940 (♀♀). S. Selander. Rinkaby 15/7 1940 (♀ 3 ♂). K. J. Hedquist. Östarp 2/9 1946 (♀). Kj. Ehnbom. Lomma 3/7 1949 (♂), 22/7 1950 (3 ♀). S. Berdén. Trelleborg, sand-shore ?/7 1950 (♂ ♂). Kj. Ander. Kullaberg 12—18/8 1952 (5 ♀). P. Persson. S. Sandby 4/8 1955 (♀). A. Jansson. Simrishamn 30/7 1957 (♂♀♀), 7/7 1958 (♀), 8/7 1958 (♀), (a little colony at the coffe-tavern on the sea-shore). S. Erlandsson. Kristianstad 4/8 1958 ♀, 5/8 1958 (4 ♂ 4 ♀) a large colony. S. Erlandsson. Bosjökloster ♂ ♂ R. Dahl. Vitemölla, Mälarhusen, Löderup,

Kåseberga (Tjeder 1954 p. 67). — Blekinge: Jämjö 3/8 1943 (35 ♀♀). Kj. Ander. Torskors 27/7 1947 (♀). S. Berdén. Sibbaboda 8/8 1958 (♂♀), (*Calluna vulgaris*). S. Erlandsson. — Småland: Hjorted 24/6 1957 (♀ gravel-pit). S. Erlandsson. Hagby 9/8 1958 (♂♀). S. Erlandsson. Sandy ground near the church, both individuals captured on *Jasione montana*. — Öland: Böda: Melböda 19/7 1943 (♀). S. Erlandsson. Vickleby: Bo 29/7 1945 (3 ♂ 3 ♀), 3/7 1945 (♂♀♀), 1/8 1945 (♂), 7/8 1945 (♂♂♀), 2/9 1946 (2 ♂ 2 ♀). S. Selander. Gårdby 21/8 1949 (♀). N. Bruce. Mörbylånga 23/7 1952 (22 ♀ 82 ♂), 27/7 1952 (♀ 3 ♂). E. Kjellander. — Gotland: Visby 14/8 1955 (♀♀) K. J. Hedquist. 24/7 1956 (18 ♀ 21 ♂) O. Lundblad. Tofta 8/7 1956 (♂). O. Lundblad. — Östergötland: Linköping and Söderköping (com. Kj. Fahlander). Motala "Slaggbacken" at Motala verkstad 1959. Å. Karlsson. — Södermanland: Ytter-Järna, Brandalsund, the old part of the gravel-pit 24/7 1949 (♀). M. Carlsson. — Upland: Upsala, the botanical garden 16/9 1951. B. Kullenberg. (In August and the beginning of September 1952 quite numerous on *Solidago*, later not refound.) Värmdö, sandy ground near the church 11/8 1955 (♂). M. Borg. Hårsbäck 1958—1959 C. Ander. The nests were builded under stone slabs beside the entrance to a garage. — Närke: Adolfsberg 6/9 1951 ♀♀. A. Jansson.

Denmark

Falster: Bøtø Plantage 21/7 1947 (♀♀), July 1947 (♂ 6 ♀). Gedser, sand-ground near the ferry-station 28/6 1960 (♀). S. Erlandsson. — Lolland: Brundrag 28/8 1950 (2 ♀). R. Winckler. — Møen: Ulfshale 31/8 1944 (♀), 2/9 1944 (♀). J. G. Worm-Hansen. — Sjælland: Hornbæk Plantage 10/7 1940 (♀), 18/8 1952 (2 ♀). H. Anthon. Rungsted (♀). S. Rasmussen. Tisvilde Hegn 28/7 1941 (♂). Havnsø 26/6 1940 (2 ♂ 2 ♀). E. V. Rasmussen. Kongsør 30/7 1942 (2 ♂). K. Fæster. Slagelse 20/8 1950 (6 ♀). P. K. Nielsen. Korsør 20/8 1950 (♀). K. Haurslev. Ærø, Martal July 1945 (2 ♀) H. Lemche. — Anholt 25/6 1954 (♀). O. Hørring.

Finland

Ta.: Hämeenlinna (=Tavastehus) 16/7 1949 (♀). E. Valkeila. Hattula 6/8, 9/8 and 14/8 1951 (12 ♂♂). E. Valkeila. — Sa.: Mikkeli (=St. Michel) 23/8 1952 (♂). R. Elfving. Lappee and Laurisala 6—7/7 1956 (some ♀♀ and several ♂♂). E. Valkeila. Lappenranta (=Villmanstrand) 7/7 1956 (♂). E. Valkeila.

References

ANDER, K. 1942. Ett par sällsynta gaddsteklar. Opusc. Entom. **7.**

FAHLANDER, K. 1957. Sphecider ur Daniel Gaunitz' samling. Opusc. Entom. **22.**

HANSSON, Å. 1951. Bivargen blir vanligare. Nord. Bitidskr. **3.**

JANSSON, A. 1956. Stekeln som fångar tambin åt avföda och släktingar som jagar flugor. Örebro läns naturskyddsför. årsbok 1955.

LINDGREN, L. A. H. 1960. Några nya fynd av bivargen. Nord. Tidskr. **12.**

TJEDER, B. 1951. Med Kiviks sand i skorna. Sveriges Natur.

— 1954. Östskånska insekter 1. Opusc. Entom. **19.**

VALKEILA, E. 1952. Drei seltene Wespenfunde. Ann. Entomol. Fennici, **18.**

WAGNER, A. C. W. 1937. Die Stechimmen (Acuteaten) und Goldwespen (Chrysididen s.l.) des westlichen Norddeutschland. Verh. d. Ver. f. naturwiss. Heimatsforschung zu Hamburg. **26.**

YARROW, I. H. H. 1945. Collecting Bees and Wasps. Hymenopterist's handbook. The Amateur Entomologist. Vol. **7.** No. 40.