Further notes on a swarm-forming species, *Torymus phillyreae* (Hymenoptera: Torymidae) with new synonymy

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Abstract: New information is presented which suggests that *Torymus phillyreae* is dimorphic, with alternate hosts on different host-plants. *Torymus schioedtei* and *T. tripudians* are synonymised with *T. phillyreae* and the type-material of all three is discussed.

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Introduction

In my paper on swarming in Chalcidoidea (Graham, 1993) I described *Torymus tripudians* as a new species and gave an account of its extraordinary swarming propensity. Since then further information has come to hand which complicates the matter but reveals a most interesting biological situation.

Recently I examined the type-material (in Naturhistorisches Museum, Vienna and Forstinstitut, Vienna) of several *Torymus* species described by Ruschka in 1921 and not accessible to me before. Amongst these were the syntypes of *T. phillyreae* Ruschka (1921), the original material which had been reared by Wachtl from a host belonging to Diptera Cecidomyiidae, on *Phillyrea* (possibly *P. latifolia* L.) collected at Miramare, near Trieste. I recognized the syntypes as being conspecific with my *T. tripudians* and confirmed this after comparing the respective type specimens. *Phillyrea* is not recorded from the area on Mont Ventoux (France, Vaucluse) where *T. tripudians* was found in such incredible numbers, though it occurs on the lower, south-facing slopes about 7 km west of Combe Brune, between 300 m and 600 m.

The story does not end here. Some time ago my friend Mr. M. J. Gijswijt ('s-Graveland) kindly loaned his series of a *Torymus* which he had found in Spain, having reared some specimens from galls formed by a species of Cecidomyiidae (Diptera) on *Artemisia* and swept others from these plants. They agree with nominotypical *T. phillyreae* in most respects, differing only in females, which have ovipositor sheaths on average longer (1.85-2.15 times the length of the hind tibia, as against 1.5-1.95 in *T. phillyreae*) and hind coxae bare dorsally in the basal half (they are usually provided with some setae in *T. phillyreae*). I believe that they may represent a dimorphic form of female *T. phillyreae*, though this cannot be proved at present. Such forms of the female were first discovered by Eady in *T. auratus* (Geoffroy) and mentioned in his revision (1959). The writer has reasons for considering that they occur in other species as well. Incidentally, there appears to be little *Artemisia* at the swarm-sites on Ventoux, though *A. alba* Turra occurs on the crests to the west of the summit. While both *Phillyrea (latifolia)* and *Artemisia* are found on Ventoux, they hardly seem abundant enough to support the great numbers of the *Torymus* encountered there.

I may mention that on September 9th 1993, Mrs. Jeanne Gijswijt, Dr. Hans van den Assem and I walked to the site in Combe Brune, Mont Ventoux, where one of the largest swarms had previously been observed. Although the

weather was dull and chilly we found a swarm of several thousand *Torymus phillyreae* in exactly the same place as in previous years. The swarm extended from about eye-level to a height of 6 metres (as observed by Hans with his binoculars), all gathered on leaves of *Fagus*.

Theo Gijswijt also loaned material taken by him in Spain (Province of Avila, Sierra de Gredos) at an altitude of 1500 m, and by Drs A. C. and W. N. Ellis at Gavarnie (France, Hautes Pyrénées) between 1250 and 1360 m. I find that I took a female on 1.viii.1973 at 1650 m on the slope of Puy de Sancy (France, Puy de Dôme). This material is all referable to the nominotypical form of *T. phillyreae*. The species is essentially southern European and the locality in Puy de Dôme is the farthest north of recorded sites. *Phillyrea* does not extend so far north, though some *Artemisia* species are known from the Department of Puy de Dôme.

An additional problem was evident when I was able recently to re-examine the holotype of *Callimome schioedtei* Hoffmeyer, as explained below.

Torymus phillyreae Ruschka

Torymus phillyreae Ruschka, 1921: 340-341, ♂ ♀.
Callimome schiödtei Hoffmeyer, 1930a: 115, ♀; 1930b: 243, ♀, **syn. n.**
Torymus tripudians Graham, 1993: 19-21, ♂ ♀ , **syn. n.**

Type material

Torymus phillyreae Ruschka. Described from 10 ♂♂ and 6 ♀♀ from Wachtl's collection. In Naturhistorisches Museum, Vienna I found only 1 ♂ and 1 ♀, on minutien pins, mounted on a pith block and labelled (1) e Diplosis phillyr. Miramare ex coll. Wachtl (2) Torymus phillyreae Ruschka, Type (3) TYPE (red label) (4) accession label, nr. 321. The ♀ is here designated LECTOTYPE and I have so labelled it. The ♂ is designated as a paralectotype.

Additional syntypes were found in Forstinstitut, Vienna, as follows: (1) 1 ♂, 1 ♀, on pith block , labelled 'Miramare Istria; 3; Torymus phillyreae Ruschka, Type'; a pale blue label. (2) 1 ♂, 1 ♀, same labels as (1) except that the second label reads '1' instead of '3'. (3) 1 ♀, remounted on a card by Dr. Bouček, bearing the following labels in his handwriting: Miramare bei Triest ex Braueriella phillyreae – Wachtl; ♀ Torymus phillyreae Rusch. det. Z. Bouček, 1978'. All these specimens in Forstinstitut are here designated paralectotypes.

Callimome schioedtei Hoffmeyer. Holotype ♀ in Universitets Zoologiske Museum, Copenhagen, mounted on a card-point and labelled 'Roma Schiödte; Callimome schiödtei Hoffmeyer Type'.

The holotype was taken by J. C. Schiödte when he visited Rome and its environs during his European tour of 1845 (probably in the summer, as his extensive travels began in the spring of that year (Henriksen, 1928: 230). It is identical in all respects with the lectotype of *T. phillyreae* except for its greater size and the condition of its ovipositor. The ovipositor proper (second valvulae) is present but somewhat shorter than the gaster and bent upwards (though not broken) at a short distance beyond the tip of the latter. The ovipoisitor sheaths (-third valvulae) are absent; probably they were never present, as it is difficult to see how they could have been broken off when the ovipositor itself is intact. My impression is that the ovipositor itself is distorted and abnormal; *C. schioedtei* is thus based upon a teratological female of *T. phillyreae*.

Clearly there is much to learn about this species. If it can be reared extensively and its biology elucidated, it should provide a most interesting subject for study.

A representative series of *T. phillyreae* will be deposited in Nationaal Natuurhistorisch Museum, Leiden.

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