

The family Ibaliiidae (Hymenoptera, Cynipoidea) in Norway

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The cynipoid family Ibaliiidae is revised for Norway. Eight specimens were traced, all belonging to *Ibalia rufipes* Cresson, 1879. Records are present from Rollag municipality in Buskerud, Ullensaker, Sørums, and Skedsmo in Akershus, and most probably Oslo. The biology and distribution of the family in Northern Europe are briefly discussed.

Keywords: Ibaliiidae, Cynipoidea, *Ibalia rufipes*, *Ibalia drewseni*, Siricidae, Norway.

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Introduction

The superfamily Cynipoidea embraces the three families Cynipidae, Figitidae and Ibaliiidae in Europe. The latter is the smallest with only three European species, all associated with wood wasps (Siricidae). Liu & Nordlander (1994) revised the family worldwide, and listed 18 valid species. Three species occur in Europe, and all these are recorded from Finland (Martikainen & Viitasaari 1996, Table 1). Some authors have reported *Ibalia rufipes* Cresson, 1879 from Norway, but without indicating any exact locality (e.g. Spradbery 1970, 1974, Spradbery & Kirk 1978, Liu & Nordlander 1994).

This contribution deals with the known distribution of the family Ibaliiidae in Norway.

The records

Ibalia rufipes Cresson, 1879

Ibalia drewseni Borries, 1891

Material examined. Akershus (AK): Skedsmo: L[ille]str[ømmen] (EIS 29), 1♀, [no date], leg. Anonymous; Ullensaker: Sessvollmoen W 205 m a.s.l. (EIS 37), UTM 32V PM 1777 8051, 1♀,

11–26 June 2007, malaise-trap in sandy pine-forest, leg. Lars Ove Hansen; Sørums: Egner (EIS 37), 2♀♀1♂, 25 May 1993, leg. Ove Sørlibråten. Buskerud West (BV): Rollag: Tråen saga (EIS 35), 1♀, June 1994, 2♀♀, July 1994, malaise-trap / saw mill, leg. Bjørn A. Sagvolden. All material is deposited in the collections at the Natural History Museum, University of Oslo.

Spradbery 1970, 1974, Spradbery & Kirk (1978) reported *I. rufipes* from «Nordmarken», but without any exact locality. In all these studies bolts of pine (*Pinus silvestris*) and spruce (*Picea abies*) infested with siricids were collected for hatching studies. There may have been several studies, because Spradbery (1970) gives a locality 130 m a.s.l., while Spradbery & Kirk (1978) denote 380 m a.s.l. It is likely to believe that these localities are situated in Oslo municipality. The denotation «Norway» given by Liu & Nordlander (1994) refers to these studies. No effort has been done to trace this material.

Identification

The genus *Ibalia* is easily recognizable by its size and the strongly lateral compression of the body. No other cynipid species reaches this size in

TABLE 1. Ibalid-species recorded in Fennoscandia with host species of wood-wasps and host trees.

Ibalid spp.	Distribution	Host siricid spp.	Host tree spp.	References
<i>I. (I.) rufipes</i>	NO,SE, DK, SF	<i>Sirix</i> , <i>Urocerus</i> , <i>Xeris</i>	Conifers: <i>Picea</i> , <i>Pinus</i> , <i>Abies</i> , <i>Larix</i>	Spradbery 1970, Spradbery & Kirk 1978, Liu & Nordlander 1994
<i>I. (I.) leucospoidea</i>	SE, SF	<i>Sirix</i> , <i>Urocerus</i> , <i>Xeris</i>	Conifers: <i>Picea</i> , <i>Pinus</i> , <i>Abies</i> etc.	Spradbery 1970, Spradbery & Kirk 1978, Liu & Nordlander 1994, Martikainen & Viitasaari 1996
<i>I. (Tremibalia) jakowlewi</i>	SF	<i>Tremex fuscicornis</i>	Broad-leaved trees: <i>Betulus</i> .	Liu & Nordlander 1994, Martikainen & Viitasaari 1996

Northern Europe. *I. rufipes* can be separated from other European species of *Ibalia* by the reddish-brown color of the two first pair of legs (Liu & Nordlander 1994, Martikainen & Viitasaari 1996). The last pair has usually a reddish-brown femur, while the rest is mainly black, except for parts of the tarsus. Gaster is usually black dorsally, and reddish ventrally with a larger amber-colored translucent area. Length: ♀ 11–14 mm ♂ 7–11 mm.

A key to the world species of Ibalidae is presented by Liu & Nordlander (1994). However, a simpler key to the three European species is given by Martikainen & Viitasaari (1996). A photo of a ♀ *I. rufipes* from Rollag is presented in lateral view in Fig. 1.

Biology and distribution

All European species of *Ibalia* utilize siricids as hosts. The ibalid females locate their hosts by responding to odors emanating from siricid oviposition holes (Madden 1968, Spradbery 1974). The host indicator is a fungi of the genus *Amylostereum* (Russulales, Stereaceae), which is introduced into the host tree by the siricid during the oviposition. The hosts consist of early-stage larvae or embryos, but not newly laid eggs. The parasitoid introduces the ovipositor into the siricid oviposition hole and injects a single egg into the host. Parasitized host larvae make shorter tunnels than healthy ones, and the tunnels are directed to the surface of the wood. The complete

development may take up to five years (Spradbery 1970).

The distribution of *I. rufipes* goes throughout the Palaearctic, from the British Isles, France, Germany and Sweden, through Russia and Turkey, eastwards to China and Japan, and further into the Nearctic where it is widely distributed in USA and Canada (Spradbery 1970, Liu & Nordlander 1992).

The different species of *Ibalia* are sometimes divided into separate subspecies, and the Northern European population of *I. rufipes* is usually regarded as subspecies *I. rufipes drewseni* Borries, 1891. This is by some authors regarded as a separate species: *I. drewseni*, originally described from Denmark (Borries 1891).

Discussion

Parasitic wasps involved in host/parasite/symbiont systems may be hard to collect, but they may seem rarer than they actually are. Both siricids and ibalids are rarely collected in malaise-traps. They can be obtained near newly cut wood, or hatched from bolts (Spradbery 1970, Spradbery & Kirk 1978). Controlled hatching may be a good method to obtain material. Saw-mills can also be good places for collecting. All the specimens from Rollag were taken at a saw-mill.

Even though only one species of *Ibalia* is reported from Norway, we may expect all three species. They are all reported from Finland (Table 1), and may occur in Norway as well.



FIGURE 1. *Ibalia rufipes* ♀ from Rollag. Photo: Karsten Sund, Natural History Museum, Oslo.

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References

- Borries, H. 1891. Om Slegten *Ibalia* Latr. *Entomologiske Meddelelser* 3, 53–57.
- Liu, Z. & Nordlander, G. 1994. Review of the family Ibalidae (Hymenoptera: Cynipoidea) with keys to genera and species of the World. *Entomologica Scandinavia* 25, 377–392.
- Madden, J. L. 1968. Behavioural responses of parasites to the symbiotic fungus associated with *Sirex noctilio* F. *Nature* 218, 189–90.
- Martikainen, P. & Viitasaari, M. 1996. The family Ibalidae (Hymenoptera, Cynipoidea) in Finland with *Ibalia jakowlewi* Jacobson new to Fennoscandia. *Sahlbergia* 3, 24–27.
- Spradbery, J. P. 1970. The biology of *Ibalia drewseni* Borries (Hymenoptera: Ibalidae), a parasite of siricid woodwasps. *Proceedings of the Royal Entomological Society of London (A)* 45, 104–113.
- Spradbery, J. P. 1974. The biology of *Ibalia drewseni* Borries (Hymenoptera : Ibalidae), a parasite of siricid woodwasps. *Journal of Entomology (A)* 48 (2), 217–222.
- Spradbery, J. P. & Kirk, A.A. 1978. Aspects of the ecology of siricid woodwasps (Hymenoptera: Siricidae) in Europe, North Africa and Turkey with special reference to the biological control of *Sirex noctilio* F. in Australia. *Bulletin of Entomological Research* 68, 341–359.

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