

## Oak processionary moth, *Thaumetopoea processionea* (L.)

### Introduction

*Thaumetopoea processionea* L (Lep.: Notodontidae) is native to most Central and Southern European countries. It is now spreading to Northern Europe and was first found in Southern England in 2006. Larvae feed on a variety of deciduous oak species (*Quercus* spp.), causing damage to forest and amenity trees. It contributes to oak decline that affects various European regions, alongside other biotic and abiotic factors. However, the main annoyance is due to its highly urticating hairs causing dermatitis, conjunctivitis, and pulmonary problems to humans and pets.

### History of classical biological control against *Thaumetopoea processionea*

There is no history of classical biological control of *T. processionea*. Several parasitoids of the moth occur in its native range and some could be introduced in areas where the moth is invasive. However, the parasitoid complex of *T. processionea* in Europe has been relatively poorly studied, probably because of the difficulty in rearing highly allergenic insects, and little is known on the biology and ecology of the main parasitoid species.

### Most promising natural enemies for classical biological control

*Carcelia iliaca* (Ratzeburg) (= *C. processioneae* (Ratzeburg) and *Pales processioneae* (Ratzeburg) (Dipt.: Tachinidae) are two larval parasitoids that are apparently specific to *Thaumetopoea* spp. In Germany and the Netherlands, they are reported as being the dominant parasitoids of *T. processionea* (Tschorsnig 1996; Zeegers 1997). *Carcelia iliaca* has also been found on invasive populations in UK, where it reaches 45.7% parasitism (Kitson et al. 2019).

*Ooencyrtus masii* (Mercet) (Hym.: Encyrtidae) is an egg parasitoid that has been mostly reported from *T. processionea*, in particular in Italy (Tiberi et al. 1991). However, it seems less important than other egg parasitoids such as *Anastatus bifasciatus* Geoffroy (Hym.: Eupelmidae) and *Trichogramma* spp. (Hym.: Trichogrammatidae), which are known as a very polyphagous species.

*Pimpla processioneae* Ratzeburg and other *Pimpla* spp. (Hym.: Ichneumonidae) are frequently reported from pupae of *T. processionea* (Zwakhals 2005), *P. processioneae* being the most specific and, thus the most interesting for further studies regarding classical biological control.

### Other natural enemies for classical biological control

Some species, such as the egg parasitoid *Anastatus bifasciatus*, the larval parasitoid *Meteorus versicolor* Wesmael (Hym.; Braconidae) and several larval tachinid parasitoids can also be abundant on *T. processionea*, but they are too polyphagous for being considered in a classical biological control programme.

## References

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