

FIRST RECORDS OF AZALEA SAWFLY *NEMATUS LIPOVSKY SMITH, 1974* (HYMENOPTERA: TENTHREDINIDAE) IN LATVIA



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Introduction

The rhododendrons (*Rhododendron* L.) are widely used introduced ornamental plants in Latvia. Although introduction history of genus *Rhododendron* is already two centuries long in Latvia no serious pest problems had been detected until the end of 20th century.

This study deals with first observations of new alien insect species *Nematus lipovsky* Smith, 1974, that is the first significant pest for deciduous species of rhododendrons in Latvia. *N. lipovsky*, the azalea sawfly, was first described only in the second half of 20th century in North America. In 2010, for the first time, this non-native species for Europe was recorded in Czech Republic. No records are known from other countries (Fig. 1).

Host plants of *N. lipovskyi* are typical deciduous species of rhododendrons representing different regions of origin, for example, *R. luteum*, *R. molle* and *R. calendulaceum* (native to Europe, Asia and North America, respectively). However, in Czech Republic the larvae were found also on *R. poukhanense* hybrid that belongs to a group of semi-evergreen azaleas native to Asia.

Nematus lipovskyi is univoltine. Adults fly on average from end of April until middle of May, depending on season. Larvae feed on leaves, consuming whole leaf except central vein, and sometimes also flowers. They can be found on host plant from middle of May until end of June.

Results and discussion

First notes of possible occurrence of this species in Latvia were made during 2018, when extensive damage caused by unknown larvae of insects were found on leaves of *Rhododendron* spp. in the Botanical Garden of the University of Latvia (UL). In 2019, the first observations of similar damages were made in the Rhododendron Breeding and Experimental Nursery "Babiĕ" UL, located just 7 km from the Botanical Garden UL (Fig. 2). On May 21st, 2020 the first adult insects (4 ♀) that confirmed the provisional identification were caught in the Botanical Garden UL (Fig. 3).

Feeding of sawfly larvae has been observed on such host plants in Latvia: *R. calendulaceum*, *R. luteum*, *R. occidentale*, and *R. albrechtii*. *R. albrechtii* has never been previously mentioned as host plant for azalea sawfly. Additionally, feeding of larvae was observed on numerous rhododendron hybrids that belong to different groups: Knap Hill-Exbury, Kosterianum, Mixtum, Occidentalis and Rustica.

The exact pathway of species introduction in Latvia is not known but we suspect that plant trade of imported plants is most likely scenario as such plants are widely available in local plant trade.

This study is only one of examples that characterize expansion of distribution area of invasive species. This is an ongoing problem worldwide and regular reports on this issue is increasingly common phenomenon, showing that limiting expansion of alien species is still a big challenge.

Conclusions

Latvia is only second country in Europe where *N. lipovskyi*, a potentially invasive species, has been observed in Europe though we expect that the species could be present also elsewhere, for example, in Germany and Poland, where several large rhododendron collections are located and there is ongoing and active rhododendron plant trade.

Our observations confirm that *N. lipovskyi* can use rather wide range of host plants, including many of artificially created azalea varieties. We conclude that food plant availability most likely is not a limiting factor in further spread of this species, as numerous of known host plants are used commonly as an ornamental plants in gardens, city green spaces etc. Monitoring of other suitable sites is needed in future to determine exact spread of *N. lipovskyi*.

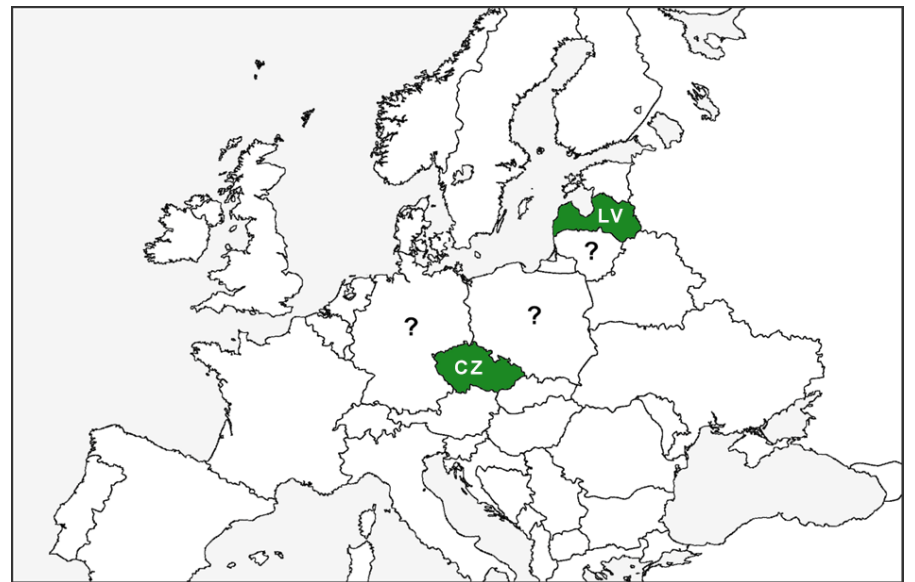


Figure 1. Current known distribution of *Nematus lipovskyi* in Europe.



Figure 2. Defoliation caused by *Nematus lipovskyi* larvae (top), and larvae, lateral view (bottom). Photos taken in Botanical Garden of University of Latvia, 06.06.2019.

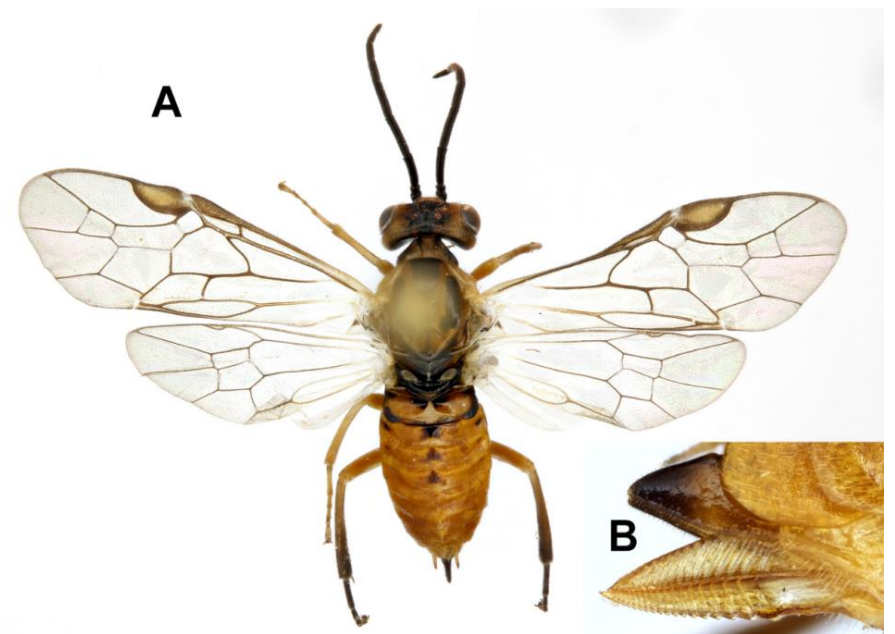


Figure 3. Collected specimen of *Nematus lipovskyi*. Female, dorsal view (A), details of female abdomen: ovipositor and ovipositor sheath, lateral view (B).