

## *Hoplothrips carpathicus* Pelikán in Norway

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### Introduction

*Hoplothrips carpathicus* Pelikán 1961, has been regarded as a rare species, collected only a few times from dead beech, *Fagus sylvatica*, in central and southern Europe (Pelikán 1961, zur Strassen 1994). It was later collected from birch, *Betula*, in Sweden and in numbers indicating that the species was not so rare (Kobro & Nittérus 1999). Recently *H. carpathicus* was studied in Norway and the results are presented here.

### Materials and methods

About 0.1 m<sup>2</sup> of bark was removed from dead birch with an axe, kept in a Berlese funnel for one to two weeks, and thrips were collected into 70 % ethanol. *H. carpathicus* imagoes can be distinguished from the other *Hoplothrips* species by the long 8<sup>th</sup> antennal segment, and by having two sense cones on both the 3<sup>rd</sup> and 4<sup>th</sup> antennal segment (zur Strassen 1994). The nymph is pale (photo in Kobro & Nittérus 1999) in contrast to that of the other *Hoplothrips* species known to us. A one-way ANOVA test has been used for statistical analyses.

### Results and discussion

Having recognised that the habitat of *H. carpathicus* in Norway is standing dead birches with coarse and cracked bark, the species was easier to find. So far it has been collected in seven counties in southeastern Norway. Eggs, nymphs and imagoes can be seen on bark by examining this under a stereomicroscope. The eggs were found in the deepest crevices and cavities in the bark, and in clusters of a few up to 20.

### Distribution on a single birch

Bark was removed from the four points of the compass from one birch, and from several heights above the ground (0.5-5.5 m), and thrips were collected and counted. The number of thrips in the samples varied from zero to almost 300

nymphs and imagoes. There was no significant difference in numbers of thrips between the north, east, south and west side of the birch. The density of thrips was highest at the levels of 1.5 and 2.5 m above the ground, but the differences were not significant due to the great variation between the samples. The variations (St.dev.) were greater than the means, which also indicated an aggregated appearance of *H. carpathicus*. That the density of thrips decreased at higher levels was probably due to change in the structure of the bark. Higher up on the trunk the bark was less cracked, providing less habitat for the thrips.

### Fungal presence

Fungal spores were observed on many specimens of the thrips. One spore-type was dominant (photo in Kobro & Nittérus 1999), but also three other spore-types were found in small amounts. The dominant spore-type resembled the conidia of the anamorph state of *Melanomma subdispersum* (Karst.) Berl. & Vogl., named *Pseudospiropes longipilus* (Corda) Hol. Dark mats of this fungus, which is an ascomycete, and not a wood-rotting fungus, could also be observed on bark samples taken from the tree. The mats were most common in the cracks. As the fungus was the only one found in the studied bark samples, we assume that the thrips forage on it. The fungal spores were found most commonly on the nymphs, but also on winged imagoes, and we suggest that *H. carpathicus* may contribute to the dispersing of *P. longipilus* both within and between the dead birch trees.

### A common species?

Assuming that *H. carpathicus* is univoltine, the total number of thrips nymphs produced in one year from the investigated birch can be estimated to be at least 2700 individuals. On the other hand, dead birches of the right size and stage of decay, and containing *H. carpathicus* have been hard to find. Thus it is

not clear whether the species is rare or common. We have also collected bark samples from more than 300 dead trees of several tree species to look for fungivorous thrips. *H. carpathicus* was recorded only sporadically from trees other than birch. It was found once on Norway spruce, *Picea abies* and once in pine, *Pinus sylvestris*. The birches with *H. carpathicus* can be found in crowded biotopes dominated by other tree species. As the birches have died recently, we suggest that they represent the end of the latest seral stage before the climax society, which is spruce in the investigated areas.

## References

- Kobro S and Nittérus K. 1999. Tripsar (Thysanoptera) i döda björkar. [Thrips (Thysanoptera) in dead birches.]. *Ent. Tidskr.* **120**, 93-98.
- Pelikán J. 1961. New species of Thysanoptera from Czechoslovakia – IV. *Acta societatis entomologicae Cechosloveniae* **58**, 60-70.
- zur Strassen R. 1994. On some rare fungivorous phlaeothripid Thysanoptera (Insecta) from Germany and Sweden. Proceedings of the Workshop on Thysanoptera at Beijing, China, and of the Symposium on Thysanoptera at Halle, Germany, both in 1992. CFS: 115-119.