

First outbreak of the pine processionary moth (*Thaumetopoea pityocampa*) in Austria

Gernot Hoch, Jasmin Putz, James Connell

An outbreak of *Thaumetopoea pityocampa* was recorded for the first time in Austria on approximately five hectares of pine forest on the south exposed slope of the Dobratsch mountain (Federal Province Carinthia). *Pinus nigra* trees on a steep, sun exposed field of scree were most severely affected. Feeding on *P. sylvestris* on the same site occurred at markedly lower intensity. Larval nests of older origin indicate that the forest was infested in the summer 2015 or earlier. We discuss the importance of the special climate on the site for larval survival during winter as well as the possible origin of this population.

Diapause and voltinism of the European spruce bark beetle, *Ips typographus*: A genomic approach

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Ips typographus is one of the most important forest pests in Europe. In winter this beetle enters an adult diapause, a genetically programmed over-wintering strategy. *I. typographus* hibernates either in an obligatory or in a facultative diapause. Obligatory diapausing beetles establish only one generation per year (univoltine). Facultative diapausing beetles produce offspring until a diapause is induced by environmental cues i.e. photoperiod and temperature (multivoltine). Thus, diapause is an important factor to estimate the aggressiveness of populations of this bark beetle. In a current project at the Institute of Forest Entomology (BOKU Vienna) we study the genetic basis of the beetles' diapause. Therefore, we analyze a part of the beetle's genome using *Next Generation Sequencing* to determine candidate loci regulating diapause. This information will help to improve phenology models for estimation of reproductive success and hence the threat of this bark beetle to forests.

Bark beetles and their associations with oribatid mites (Acari, Oribatida)

Sylvia Schäffer, Michaela Kerschbaumer

In this study we want to investigate symbiotic associations of bark beetles (Scolytinae) with arboreal mites, especially oribatid mites. In a current project at the Institute of Zoology, University of Graz, mites are extracted from galleries and pheromone traps to get insights in the diversity of oribatid species associated with bark beetles, to study their phylogeographic patterns, and to prove a possible phoretic behavior of the mites. First results show that the oribatid mite community of bark beetles consists of about 37 species, but only one species, *Paraleius leontonychus*, appears to be phoretic.

Branch dieback of tulip tree (*Liriodendron tulipifera*) by the genus *Botryosphaeria*

Markus Blaschke, Alexandra Nannig

Conspicuous leaf loss and shoot disease were observed on a tulip tree, *Liriodendron tulipifera*, planted one year ago in a garden in southern Bavaria. A detailed analysis of the damaged areas showed small, black fruiting bodies sunken into the bark. The strikingly large elongate-oval spores that developed in the pycnidia are reminiscent of *Diplodia* dieback. Comparisons with the literature of the North American area of origin of tulip tree confirm the suspicion of an infection by a pathogen of the genus *Botryosphaeria*.

Pseudodidymella fagi, a leaf spot-fungus of European beech new to Austria

Thomas L. Cech, Ludwig Wiener

A new fungal disease of European beech, *Pseudodidymella fagi*, is reported for the first time from Austria. The species is probably native to Japan and likely invaded Europe accidentally. The fungus causes leaf spots resembling those caused by beech anthracnose *Apiognomonium errabunda*. In Austria, the disease appeared in 2016 in several regions, one hotspot is located in the federal province Salzburg in the Bluntau Valley near Golling. Potential consequences of repeated infestations are discussed.

Outbreak of *Epinotia tedella* in Carinthia

Gernot Hoch, Veronika Neidel, James Connell

An area-wide outbreak of *Epinotia tedella* (Lepidoptera, Tortricidae) occurred in the southern parts of Austria in

the summer 2016. The federal province of Carinthia was affected the most, with significant defoliation on approximately 5000 ha. The most severe damage was noticed on edges of old stands where defoliation typically affected the lower third of the crown of Norway spruce. Spruce regeneration under such trees was sometimes completely defoliated. In 2017, totally defoliated branches of mature trees as well as defoliated young trees produced new foliage.

Influence of the sampling interval on the measured deposition results and on the calculated impacts

Alfred Fürst

On 20 Austrian level II plots (as of 2009: 16 plots) deposition impacts were measured within the ICP-FORESTS programme. Sampling and analysis of deposition are well harmonized across Europe. A weekly sampling interval is recommended, but it is possible to extend this interval up to one month. Higher sampling intensity is an important factor increasing the costs of the analysis. The goal of this study was to determine the impact of a longer sampling interval on the results of the deposition analysis.

If sampling was not performed immediately after a precipitation event NH₄-nitrogen losses up to 50 % could be found in the sampler. Other parameters were rarely influenced by an extension of the sampling interval.

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