

STSM Final Report

Cost Action 1404

COREMI

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Host: Eric Palevsky, Neve-Ya`ar Research Center. Ramat Yishay. Israel.

Period of stay: 22nd January – 2nd February 2017

STSM Title: *Search for predatory mite candidates against Dermanyssus gallinae in wild bird nests.*

Aim of the STSM

The main aim of this STSM is to characterize the communities of mites living in nests of different wild bird species including white stork (*Ciconia ciconia*), Cinereous vulture (*Aegypius monachus*), Northern-bald ibis (*Geronticus eremita*), Lesser kestrel (*Falco naumanni*) and Barn owl (*Tyto alba*). The aim of this characterization is to find candidate predatory mites that can be used as a control measure to fight against Poultry Red Mite (PRM).

Description of the work carried out during the STSM

Mites were extracted from the bird nest material from Spain with Berlese Funnels. For each nest, mites were sorted to isomorphs (specimens appearing to be morphologically similar). Five specimens per isomorph per collection were imaged and placed one by one in a 96 well plate, designated for non-destructive DNA sequencing. DNA Barcode analysis will be performed at the Canadian Centre for DNA Barcoding during March and mites skeletons will be returned for slide preparation by April. Species identification will be conducted with the support of Prof. Maria Moraza from the University of Navarra and subsequently deposited at the Natural History Museum of the University of Navarra.

If the number of mites of a certain isomorphic group was not enough to be sent for DNA Barcoding they were mounted on slides.

Scanning electronic microscopy (SEM) images were performed to reveal morphological characters that are difficult to discern with a light microscope.

Main results

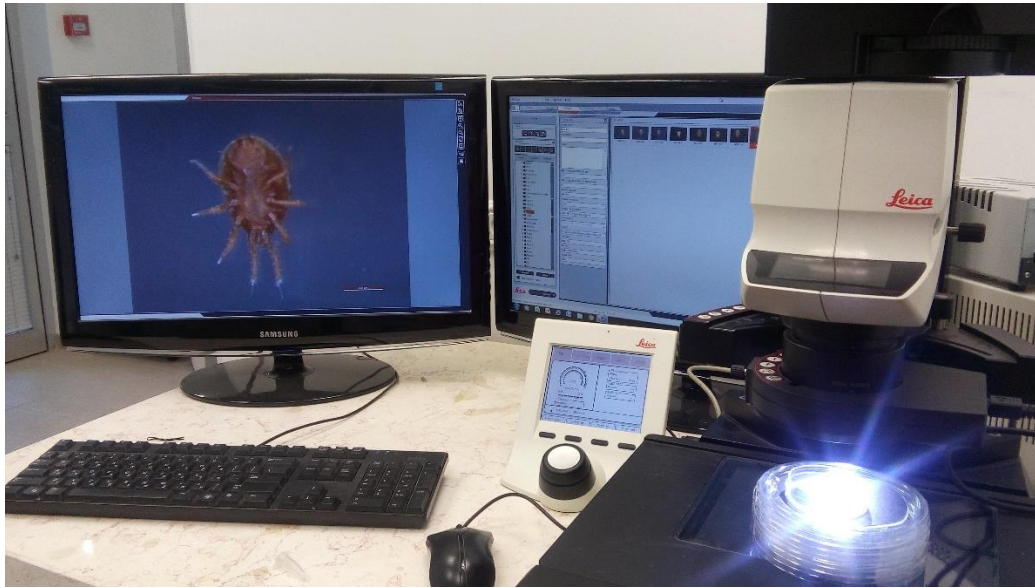
Higher amounts of mites were obtained from white stork and cinereous vulture nests, while kestrel and barn owl nests provided very few mites. Possibly because the humidity of the material in these nests was much lower. Mites belonging to the families Laelapidae, Macrochelidae, Parasitidae and the Cohort Uropodina were observed in most of the nests, and many mites belonging to the Order Astigmata.

Further collaboration with Host Institution

The Host and STSM trainee will continue to collaborate in the description of the mite community associated with wild birds and egg laying hens. Collaboration between the Prof. Maria Moraza and the STSM trainee, initiated during this STSM which will enhance the applicant's understanding of mite taxonomy of mites associated with wild birds. The knowledge generated during this STSM will be used to develop a digital open-ended web based key for the identification of mites associated with wild birds and egg laying hens. These studies are expected to stimulate further research on the functional morphology of these fascinating predatory mites.



Mite phoresis on an Uropodid mite.



Lab working place



White stork nests