

**Proposed Outline for Course:**  
Taxonomy of Auchenorrhyncha with  
an emphasis on economic important agricultural pests

**Instructor:** Dr. Michael Wilson, Department of Natural Sciences, National Museum of Wales, Cardiff, UK

**Israeli Hosts:** Dr. Malkie Spodek and Dr. Netta Dorchin, School of Zoology, Tel Aviv University.

Date: Sunday, Feb 18-Thursday Feb 22, 2018

Prerequisites: None

Course topics

Auchenorrhyncha is a sub-order of insects in the Hemiptera that consist of Cicadellidae (leafhoppers), Delphacidae, Cixiidae, Flatida, Tettigometridae and Issidae (planthoppers), Aphrophoridae, (froghoppers), Membracidae (treehoppers), Cercopidae (spittlebugs) and Cicadidae (cicadas). All members of this group are plant-feeders and many are vectors of important plant pathogens. The aims of this course will be i) to study the taxonomy of major families in Israel and the Middle East from the collections in the Steinhardt Museum of Natural History and fresh material; ii) to teach sampling/mounting and preparation techniques; iii) to sort and identify the collections of unidentified pinned material in the museum; iv) to produce identification keys to separate between major groups/families in Israel; v) to identify important agriculture pests in Israel.

Day 1. Introduction, biology: host plant specialization, feeding strategy, life history strategies, pest status: vectors of plant disease and direct feeding.

Day 2. Collection techniques in the field (sites to be determined). Familiarization and hands-on use of keys for families, keys to families and subfamilies of leafhoppers in the Middle East

Day 3. Overview of the families (taxonomy, biology, ecology). Familiarization and hands-on use of keys for genera within these families.

Day 4. Mounting and preparation techniques, genitalia preparation

Day 5. Familiarization and hands-on use of keys for the genera and species in Israel. Questions, comments and final exam.

**Material needed**

**Laboratory**

Stereo microscopes and lights

Watch glasses

Forceps, pins

Mounting cards

KOH (for genitalia prep)

Glycerine

Genitalia vials

**Field**

Sweeping nets

Aspirators

Suction sampler

**Bibliography**

Emeljanov, A.F., Stern, T. & Freidberg, A. (2011). The Dictyopharidae (Homoptera:

Cicadina: Fulgoroidea) of Israel. *Israel Journal of Entomology*, Vol. 41-42, 7-20.

Linnavuori, R. (1960). Hemiptera of Israel. 1. *Annales Zoologici Societatis Zoologicae Botanicae Fennicae "Vanamo"*, 22, 1, 71pp.

Linnavuori R. (1962). Hemiptera of Israel. III. *Annales Zoologici Societatis Zoologicae-Botanicae Fennicae 'Vanamo'* 24, 1-108.

Linnavuori, R. (1973). Studies on the Hemipterous fauna of Israel and Sinai. *Israel Journal of Entomology*, 8, 35-46. Kugler, J. (ed.). (1989). Plants and animals of the Land of Israel-

Insects, Vol. 3. Ministry of Defence, Tel Aviv (in Hebrew).