ELECTRON MICROSCOPY UNIT

Klaus W. Wolf, PhD – Head of Unit

WORK OF THE UNIT

The Electron Microscopy Unit was instrumental in assisting various interested persons to benefit from its facilities and services during the 2011/2012 academic year. Researchers on and off the Mona campus, Graduate, Undergraduate and High School students received research results, training, exposure and understanding of scanning and transmission electron microscopy (SEM and TEM, respectively), optical microscopy (OM) and macrophotography (MP). The main investigations done and services provided are listed in Table 1.

Table1. Main investigations done during the 2011/2012 academic year.

Specimen	Technique	Institution
Asbestos testing	OM	Jamaica Defense Force
Carbon sticky tabs	OM	Forensic Sciences Jamaica Constabulary Force
Clay	OM	Dept. of Physics
Coconut embryo	OM	Dept. of Basic Medical Sciences
Dermatoscope & skin lesions	OM	National Chest Hospital
Diamondback moth larval extracts	OM	Dept. of Life Sciences
Dinoflagellates	OM	Dept. of Chemistry
Dust particles from air conditioning units	OM	Dept. of Physics
Entomophagous ('insect eating') fungi	MP	Dept. of Life Sciences
Fish eggs	OM	Dept. of Life Sciences
Fluorescence microscopy	OM	Ministry of Agriculture
Foraminifera	OM	Dept. of Geography & Geology
Fungi	MP	Dept. of Life Sciences
Fungi	OM	Dept. of Life Sciences

Inverted microscopy	OM	Dept. of Life Sciences
Liquid crystals	OM	Dept. of Chemistry
Maggots colonizing carrion	MP	Dept. of Life Sciences
Membranes generated in biochemical assays	MP	Dept. of Life Sciences
Mounted aggregates	OM	Dept. of Physics
Onychophora (velvet worms)	MP	Dept. of Life Sciences
Putative ectoparasites	OM	Private Medical Practice
Redmud	OM	Dept. of Physics
Rock samples	SEM*	Dept. of Geography & Geology
Rock sections	OM	Dept. of Geography & Geology, 17 different researchers & students
Rock thin sections	OM	Dept. of Physics
Suckermouth fish and eggs	MP, OM	Dept. of Life Sciences
Sugar with contaminants	OM	Dept. of Chemistry
Tiger shrimp	MP	Dept. of Life Sciences
Yam	OM	Dept. of Life Sciences

***In cooperation with the University of Technology**

Lectures and/or laboratory sessions were conducted in Electron Microscopy and in OM in the undergraduate **Virology** course "BL38A" and in the graduate course **Research Methods for Biologists** "BL60E" from the Department of Life Sciences, the graduate course **Research Methods** "C60M" from the Department of Chemistry and the **MSc in Forensic Science** "Forensic Chemistry, FSCI 6502" from the Department of Basic Medical Sciences. Contributions to the activities of Research Day included tours of the Electron Microscopy Unit. Additionally tours were conducted for students of the Excelsior and Portmore Community Colleges and the American International School of Kingston.

Dr. Wolf served as acting president of the Natural History Society of Jamaica from August to November 2011 and as elected president of the society effective April 2012.

Research in progress

Gamete structure and development in insects using various microscopic techniques.

The collaboration with Zoologists from the University of Salzburg (Austria) on Ciliates in tank bromeliads continues. Collaboration on Jamaican Onychophora (velvet worms) has been established with Zoologists at the University of Leipzig (Germany).

PUBLICATION

Refereed

* Dunthorn, M., Stoeck, T., **Wolf, K.,** Breiner, H. W. and Foissner, W. T. (2012). Diversity and endemism of ciliates inhabiting neotropical phytotelmata. Systematics and Biodiversity 10 (2):195-205.