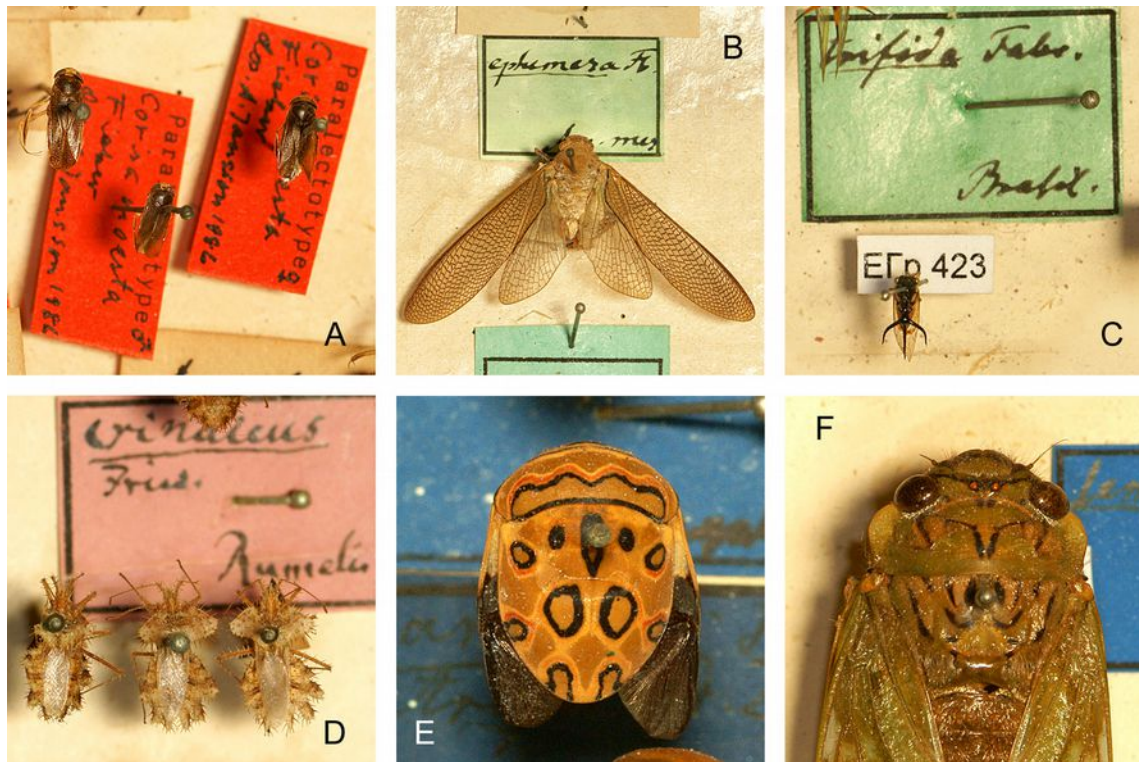


Whole-drawer imaging of insect collections of E.-F. Germar in the Zoological Museum of Lviv National University (Ukraine)



Oleksandr Holovachov

IDIGBIO WWD meeting - 22 April 2014

MY BACKGROUND

Research:

morphology and systematics of free-living nematodes

Additional expertise:

scientific photography

collection management

Work experience:

Zoological museum, Lviv University, Ukraine

Nematology dept., University of California - Riverside, USA

Swedish Museum of Natural History, Stockholm, Sweden

SCIENTIFIC PHOTOGRAPHY

Macrophotography and photomicrography



Photography in reflected ultraviolet light



INSECT COLLECTION OF E. F. GERMAR

10 boxes – over 1800 species – over 4500 specimens

collected around the world during circa 1810-1830

type specimens comprise around 10% of the collection

was unavailable for study during 20th century



INSECT COLLECTION OF E. F. GERMAR

project started in 2009 and ended in 2011

main goal – publicise the existence of the collection

museum staff (5 people) does not include entomologist

no special budget available for this project



DIGITIZING THE COLLECTION – EQUIPMENT AND SOFTWARE

Equipment:

Camera – digital SLR (Sony a100 and a700)

Lens – Tamron 90mm F/2.8 or Minolta 100mm F/2.8 macro

Light – manual flash units with diffusers

Support – fixed camera stand

Software:

Stitching – Hugin (different versions)

Online display – Zoomify Express

DIGITIZING THE COLLECTION – PROCESS AND RESULTS

Process:

Drawers were moved manually along the grid

Exposure and white balance set manually

80-130 individual frames per drawer

Stitching parameters adjusted manually

Stitching artefacts manually corrected

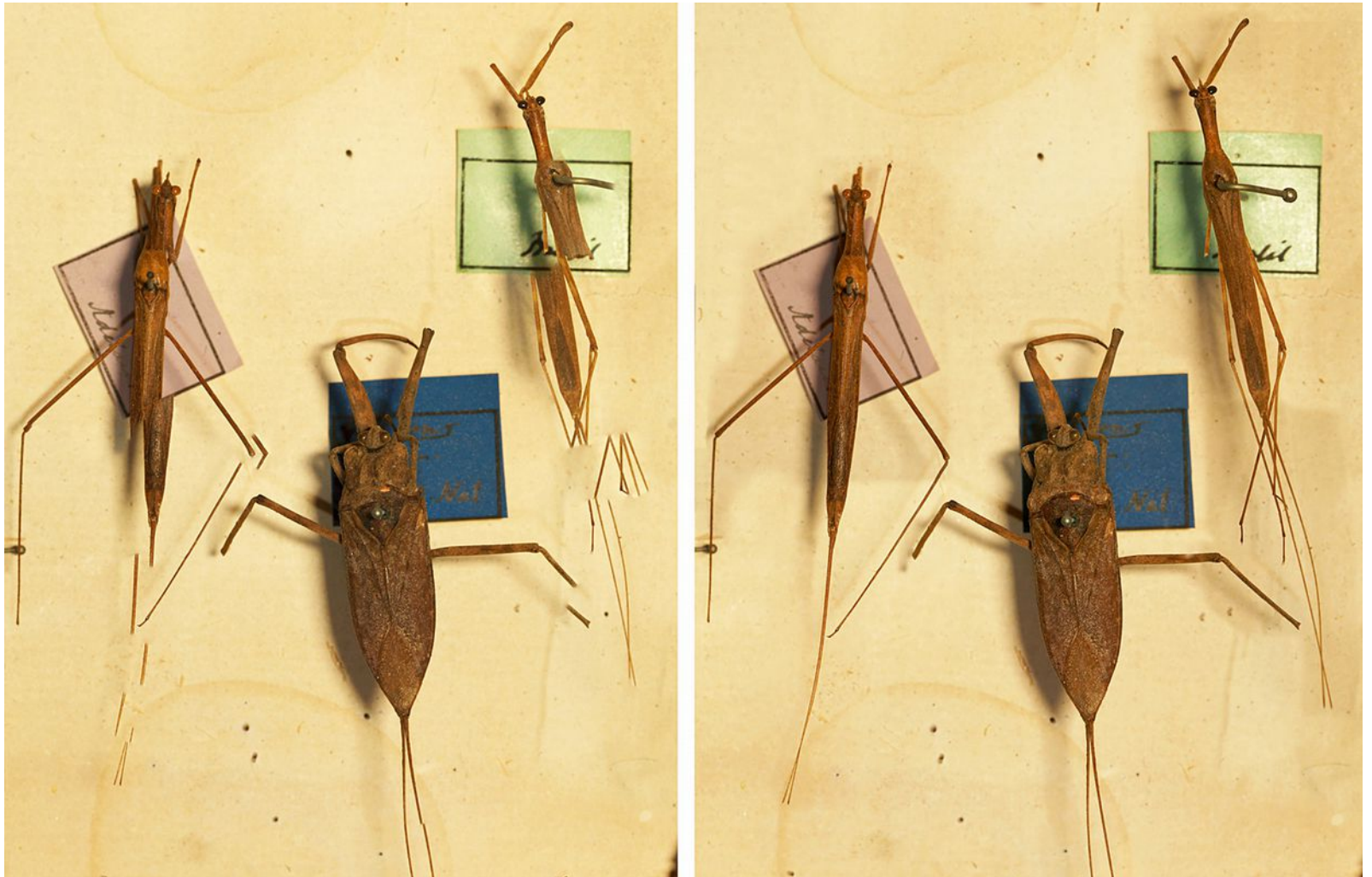
Final images – 200-300 megapixels

Result:

http://zoomus.lviv.ua/en/germar_collection/

DIGITIZING THE COLLECTION – MAIN PROBLEM

Perspective errors and stitching artefacts caused by use of non-telecentric lenses



DIGITIZING THE COLLECTION – OUTCOME

Remote curation:

No taxonomic expertise required for current curators

Identity of specimens can be verified remotely

Preservation quality can be estimated remotely

Label data can be re-evaluated (if visible) remotely

New finds:

Presence or absence of many type specimens was verified

Type specimens from other entomologists had been identified

FUTURE PLANS

Technical aspects:

Finding affordable telecentric lenses to be used by museums in developing countries

Testing available “large format” telecentric lenses, which are suitable for cameras with APS sensor

Museum related:

Digitizing other historically important collections that are housed at the Zoological Museum of Lviv University

Exploring other (non-scientific) uses of whole-drawer digitization technologies in museums