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**OREGON
DEPARTMENT OF
AGRICULTURE**

**BOARD of AGRICULTURE
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PEST GRASSHOPPERS IN OREGON
A Field Guide to Nymphs and Adults



IPPM lab services:

- ✓ ODA pest survey sample identifications
- ✓ Identification services for submissions from other agencies and ODA programs business, industry and the public Oregon Invasive Species Hotline (oregoninvasiveshotline.org)
- ✓ Identification tools
- ✓ Reporting of new exotics, pest distribution records
- ✓ Pest alerts, pest management information

First field guide to grasshopper nymphs since 1988

Field Guide to Common Western Grasshoppers by Pfadt.



live imaging

- ✓ color as in field photography
- ✓ diagnostic detail as in lab imaging



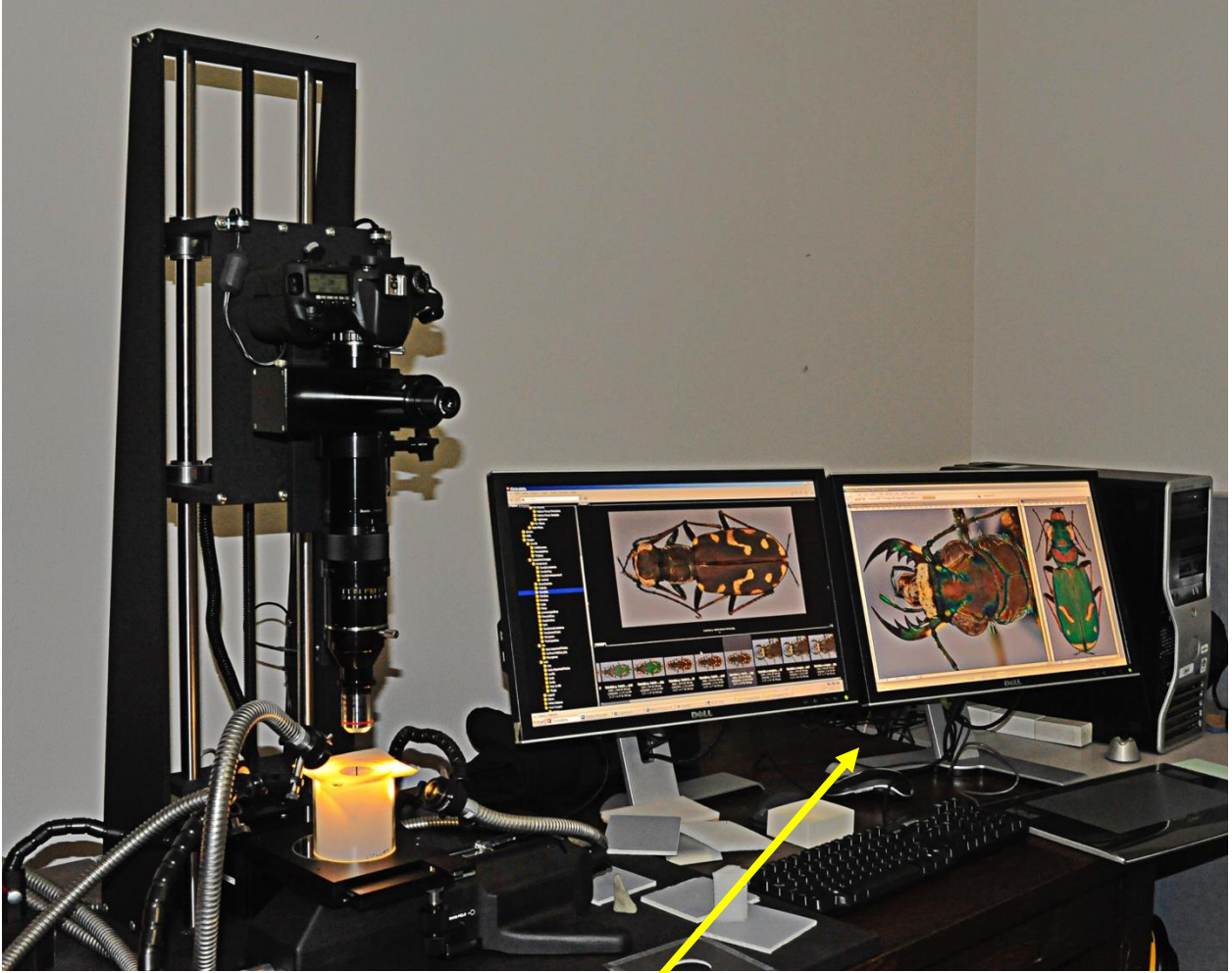
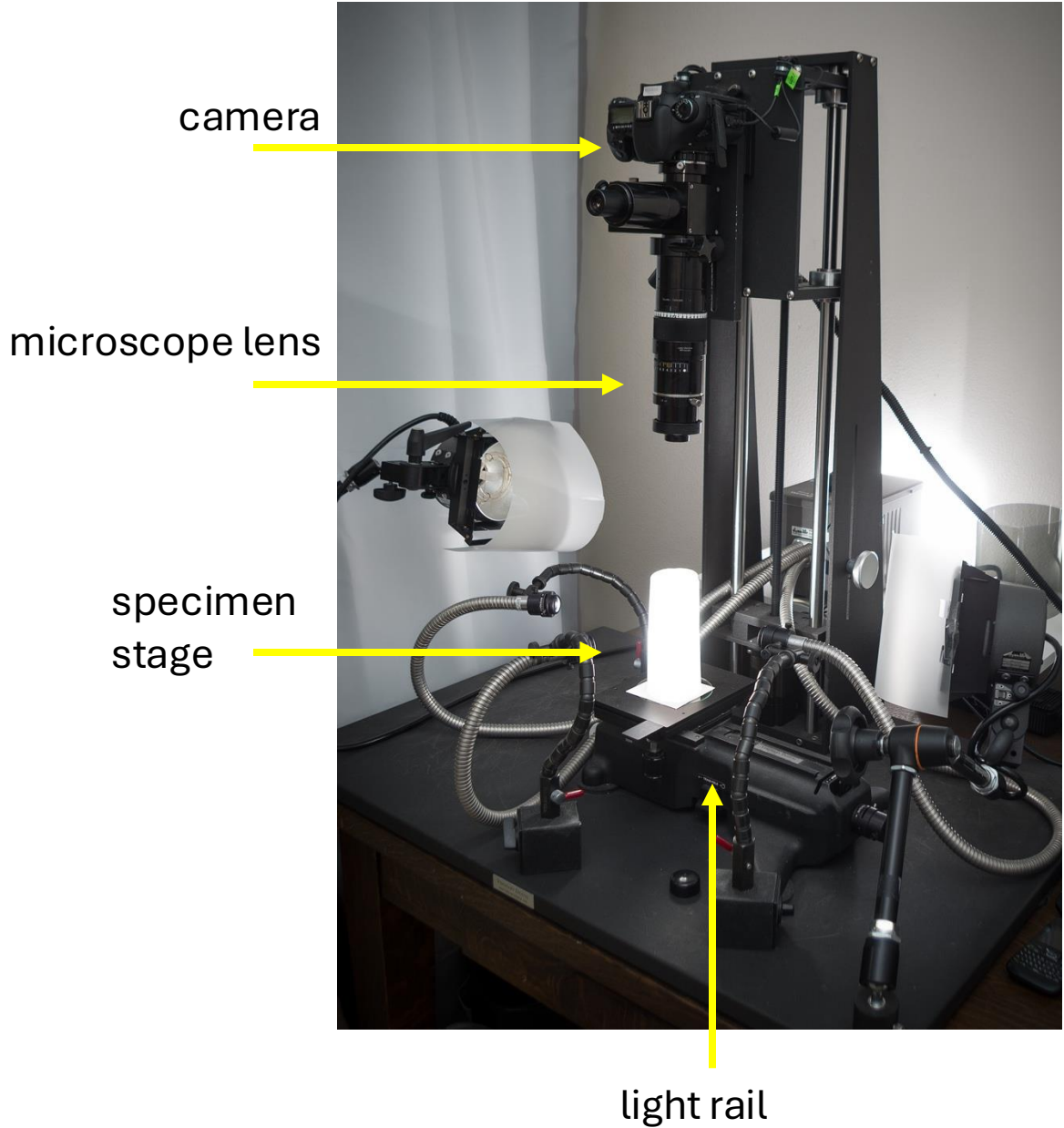
Aulocara ellioti
Big-headed grasshopper
1st instar



Melanoplus sanguinipes
Migratory grasshopper
1st instar

Photography by J. Buck Dunlap,
Thomas Shahan,
Thomas Valente, and
Steve Valley

Extended depth-of-field imaging system



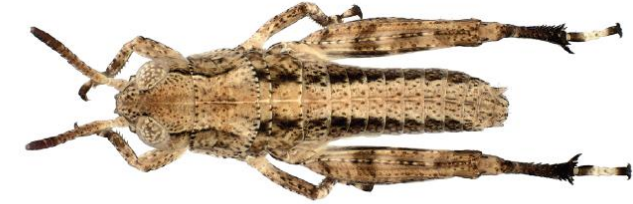
The importance of **instar identification** to grasshopper management

- ✓ Management decisions need to be made when nymphs are small
- ✓ Illustrates all mobile life stages including tiny 1st instars
- ✓ Acknowledge the cooperation of ODA Eastern Oregon field office, USDA-APHIS PPQ for grasshopper sweep sampling to provide specimens for imaging

Instar 1



Instar 2



Instar 3



Instar 4



Instar 5



Camnula pellucida (Say)

Instar 3, Jefferson Co., 11 mi N Madras 2306', 3 June 2013.

Instar 4, Jefferson Co., 11 mi N Madras 2893', 3 June 2013.

Instar 5, Jefferson Co., 11 mi N Madras 2306', 3 June 2013.

Guide Highlights

- ✓ Includes all grasshopper species that have reached outbreak population levels in Oregon within the last 50 years
- ✓ Includes 8 major pest species of grasshoppers in Oregon (9 species are treated in detail in the guide)
- ✓ A pictorial key to grasshopper nymphs shows features distinguishing pest grasshopper nymphs from similar non-pest species
- ✓ County distribution maps for each pest species
- ✓ Checklist of 101 grasshopper species in Oregon represented by specimens in the ODA and OSU collections



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