

SPECIES FACT SHEET

Common Name: American Grass Bug

Scientific Name: *Acetropis americana* Knight 1927

Phylum: Arthropoda

Class: Insecta

Order: Heteroptera

Family: Miridae

Subfamily: Mirinae

Tribe: Stenodemini

Type Locality: Oregon, Benton County, Corvallis. Female specimens were swept from dry grass, probably a wild oat grass (*Deschampsia cespitosa* (L.) Beauv. Var. *arctica* Vasey), a rare native grass of wet habitats.

OR/WA BLM and FS Region 6 Units where Suspected or Documented:

BLM: Mary's Peak Resource Area.

Tillamook Resource Area.

Salem District.

USFS: Siuslaw National Forest.

USFWS: Finley Wildlife Refuge (documented).

Description:

Male: Length 8-mm, width 2.1-mm.

Female: Length 7.4-mm, width 3-mm.

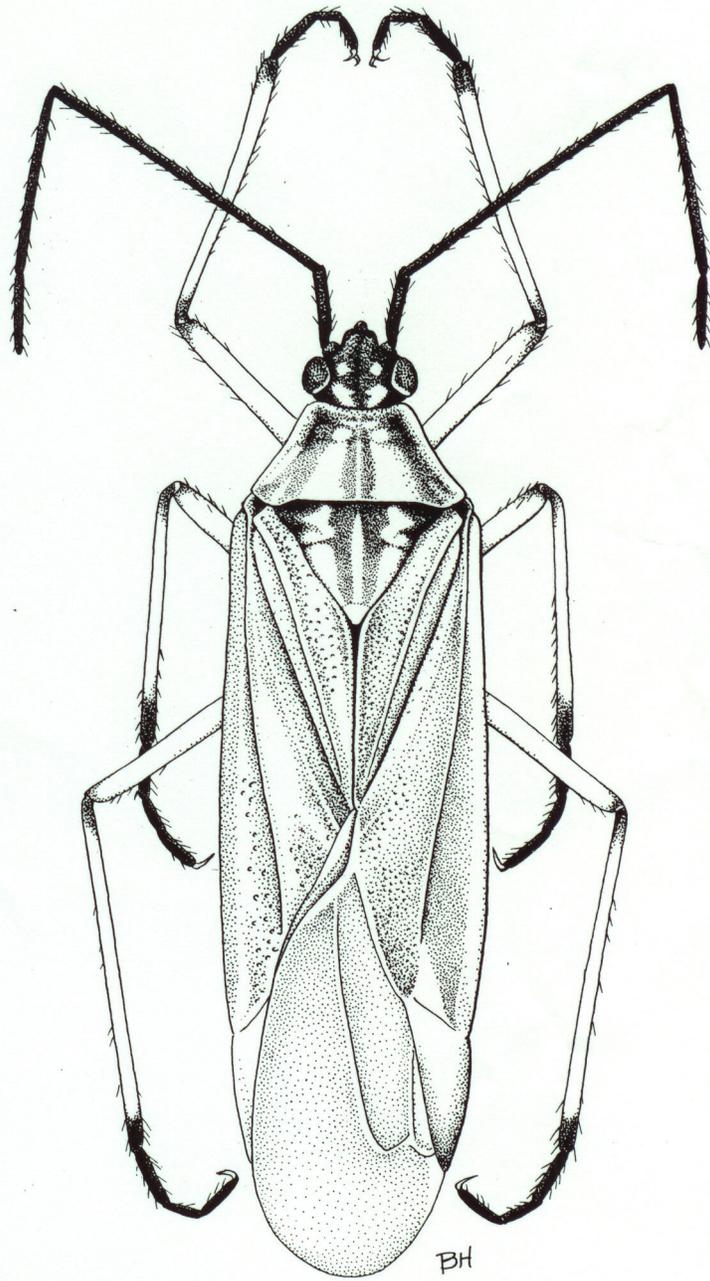
Antennae: 4-segmented, color black.

Hemelytra: Color pale brownish Membrane uniformly fusco-brownish, veins yellowish brown, a calloused line bordering vein near apex of large areole, its length equal to half the length of cuneus.

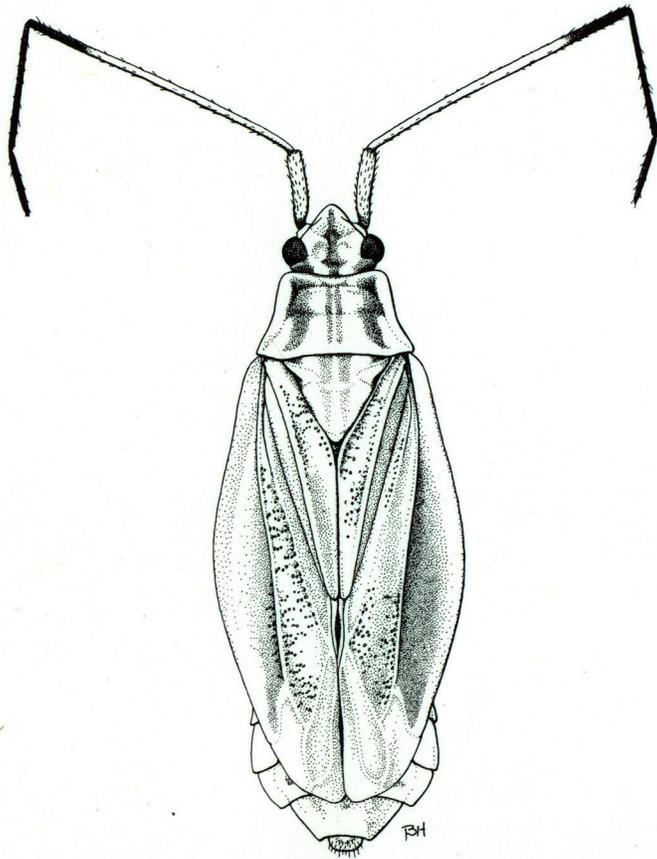
Legs: fusco-brownish, tarsi and apices of tibia blackish.

General: Species is longer than wide, pale brownish (tan). Wings folded on dorsum, membranous on distal third.

Technical Description in Appendix A.

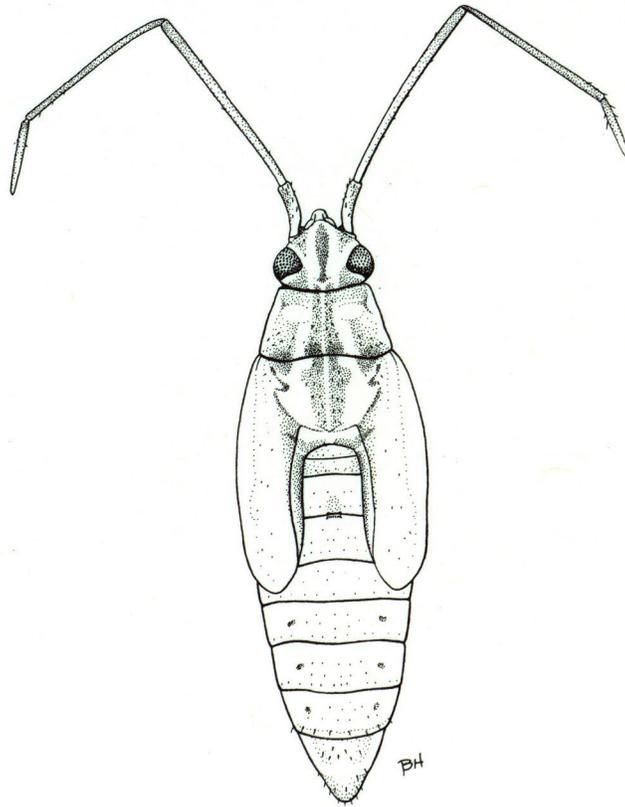


Dorsal view of *Acetropis americana* adult male (Lattin and Schwartz 1986).



Dorsal view of *Acetropis americana* adult female (Lattin and Schwartz 1986).

Nymphs: The immature stages comprise 5 instars, each successively larger than the previous instar.



Dorsal view of *Acetropis americana* nymph (Lattin and Schwartz 1986).

Family Miridae: *Acetropis americana* is a member of the family Miridae. The Miridae is the largest family of true bugs, with about 6,000 species. In the United States and Canada members of the group are usually called plant bugs. Size and appearance are variable; ocelli absent; four antennal segments; labium 4-segmented, inserted ventrally on head; clypeus more or less vertical. Forewing usually with conspicuous costal fracture and cuneus, membrane with 1 or 2 closed cells.

Tribe Stenodemini: *Acetropis americana* is in the subfamily Stenodemini, a widely distributed group of elongate, pale-colored grass feeders, comprising about 25 genera. Schwartz (1987) provided a generic revision of this group.

Life History:

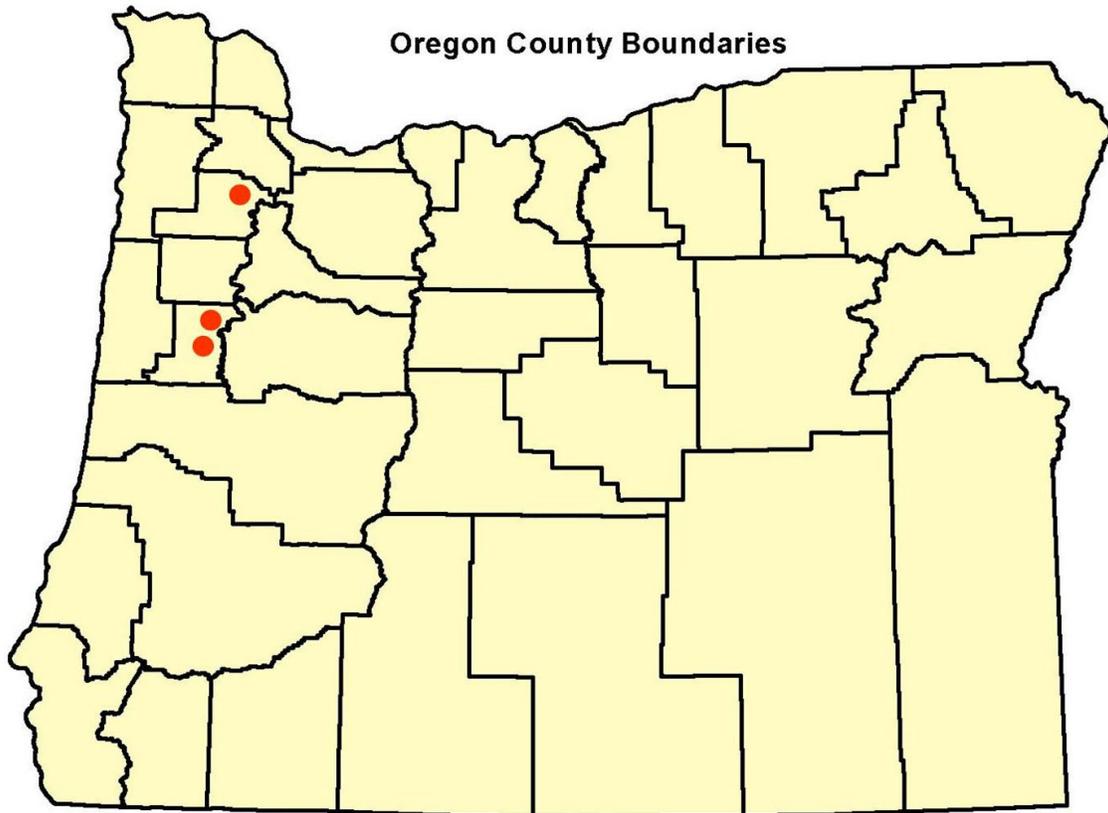
Juvenile stages: Female adults lay eggs which hatch and become the first instar nymphs. The nymphs have a body form similar to the adults. Early instar nymphs have small wing pads that grow larger with successive stages. Early instar nymphs of Miridae are usually 1-3 mm in length and may be colored differently than adults. Later instars look more similar to adults, with longer wings that do not reach the end of the abdomen (see figure on previous page). After 5 instars the juveniles molt and become adults. Classification and identification of nymphs to species requires taxonomic expertise.

Phenology: Adults have been collected from May through July and apparently the season for this species is nearly over by July, because only three females were collected during several minutes of sweeping dry grass in 1927 (Knight 1927). Other details of the phenology of this species have not been published and are unknown. Species of Miridae usually appear in early spring as nymphs on their host plants, and develop within a few months into adults.

Range, Distribution, and Abundance:

Range: *Acetropis americana* represents the migration into the Nearctic region of a genus which is primarily Palaearctic in distribution. It is another example of those forms which must have reached North America by way of the Alaskan land connection (Knight 1927). This is the first *Acetropis* species recorded from North America, six species of the genus are known from the Palaearctic region (Lattin and Schwartz 1986).

Distribution: Specimens of this species have been collected in low, wet grasslands of the Jackson-Frazier Wetlands near Corvallis, Oregon (SE ¼ Sec35 T11S R5W) (Knight 1927); along the Yamhill River near McMinnville (most likely near "Booth Bend" about 4-km northeast of Whiteson Sec34 T4S R4W) (Lattin and Schwartz 1986); and on the Finley Wildlife Refuge, 10 miles south of Corvallis (in a grassy wet swale alongside the entrance road, Sec20 T13S R5W) (Lattin and Schwartz 1986). The Finley and Corvallis sites appeared relatively undisturbed, potentially containing a large proportion of native grasses (Lattin and Schwartz 1986). This species may occur elsewhere in Oregon and as far north as southwestern Washington where suitable sites are located (Lattin and Schwartz 1986).



**Distribution of *Acetropis americana* Knight 1927
Yamhill and Benton Counties, Oregon.**

Habitat Associations:

Acetropis americana has been collected only in undisturbed, wet native grasslands in the Willamette Valley of Western Oregon. This species may be associated with *Deschampsia cespitosa* (L.) Beauv. Var. *arctica* Vasey (tufted hairgrass) (Lattin and Schwartz 1986).



***Deschampsia cespitosa* (L.) Beauv.**
Photo courtesy of Hastings Natural History Reservation.

Threats:

- (1) Exotic grasses and vegetation that displace native grasses.
- (2) Scarcity and loss of undisturbed, wet native grasslands.
- (3) Fire: Burning significantly decreases inflorescence production of *Deschampsia cespitosa*, the dominant wetland prairie grass (Clark and Wilson 2001).
- (4) Introduction of non-indigenous predators or parasites.

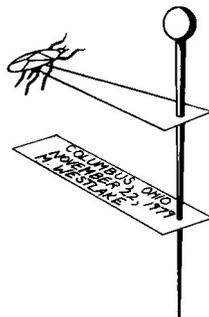
Conservation Considerations:

- (1) Control exotic grasses and vegetation.
- (2) Restore areas of wet native grassland.
- (3) Protect undisturbed, wet native grasslands.
- (5) Most vulnerable to habitat disturbance from early Spring to mid-Summer.
- (6) There is no specific information for this species however limiting factors probably include availability of host plants in suitable habitat (wet native grasslands), presence of predators or parasites, and disturbance or management activities during the early spring.

Sampling and Specimen Mounting:

Sampling is conducted using an insect net, sweeping over and brushing the tops of native grasses in sampling areas. Specimens can be removed from the net using an aspirator. Specimens can be placed into a killing jar or directly into alcohol in the field. All collecting vials should be labeled with collecting information (see below).

Adult specimens should be mounted on paper points with the point glued with Elmer's glue or nail polish to the lower portion of the thorax of bug (see figure below). It is helpful to bend the tip of the paper point slightly to make a better contact surface. Specimens (especially juveniles) can also be preserved in vials containing 75% ethyl alcohol. All mounted specimens and vials should include collecting information; state and county, locality, habitat, host plant, date, and collector. Optional information includes elevation, TRS data, and other notes about the habitat. A second paper label can be used for optional information.



Proper Mounting on Paper Point

Sampling for most true bugs is usually conducted in Spring. Knight (1927) found adults were not abundant by late July. Juvenile stages may be difficult to distinguish from other species of Miridae, therefore identification is best conducted using adult specimens. Juvenile stages, called nymphs, look similar to adults, but are smaller and wings are less developed.

Field identification is possible by those familiar with Heteroptera taxonomy, and can be accomplished by non-experts who have examined and become familiar with museum specimens. Field identification may be facilitated using photographs of the species and of other common true bugs. Confirmation of field identifications should be done by taxonomic experts with experience identifying Miridae.

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ATTACHMENTS:

- (1) Digital Images (CD)**
- (2) BLM Distribution Maps**
- (3) Locality Topographic Maps**
- (4) List of References/Literature**
- (5) Technical Description and Glossary**
- (6) Original Published Description**

Knight, H.H. 1927. *Acetropis americana*, a new species of Miridae from Oregon (Hemiptera). Entomological News, July 1927. v. 38, p. 206-207.

- (7) Published Literature Review**

Lattin, J.D. and M.D. Schwartz. 1986. A review of *Acetropis americana* Knight in North America (Hemiptera: Miridae: Stenodemini). Journal of the New York Entomological Society, Jan 1986. v. 94 (1), p. 32-38. ill.

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Date Completed: September 06, 2005

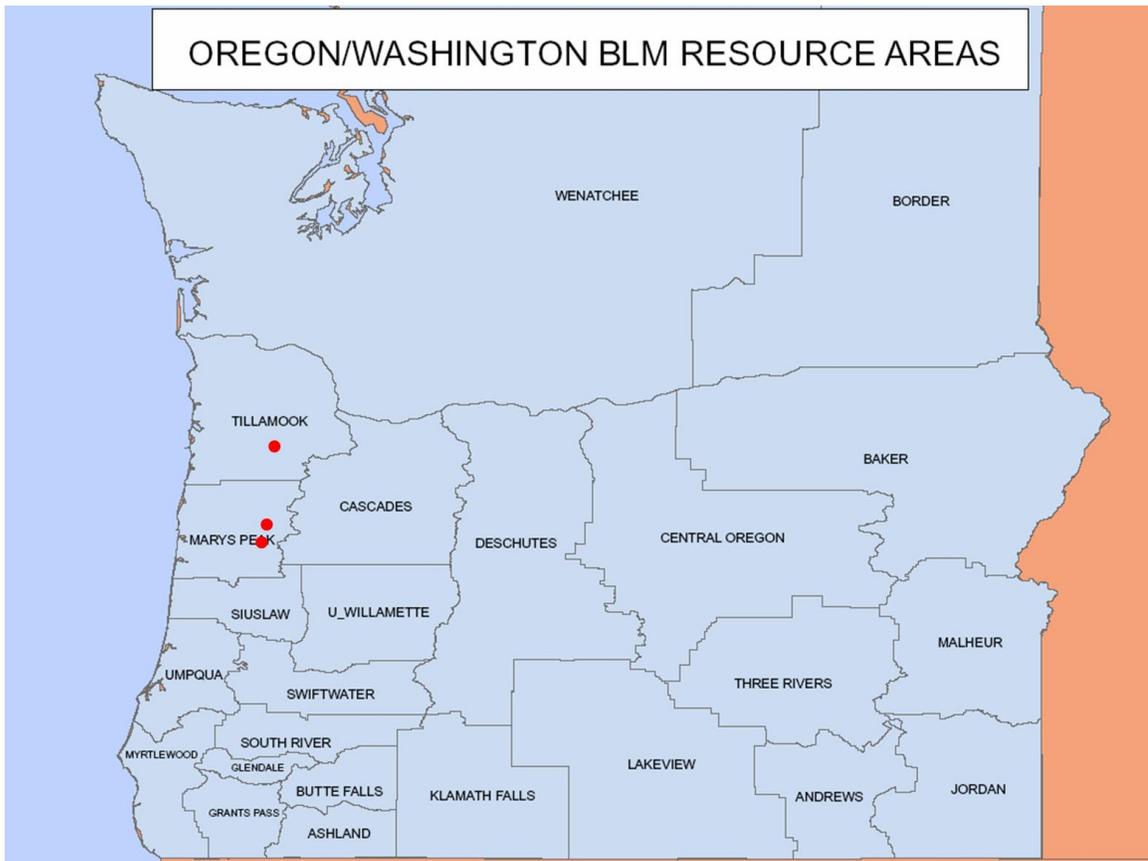
**Digital Pictures
By Pacific Analytics, LLC**

**These images are available on the CD and can be used by the BLM.
Please acknowledge photographs as Pacific Analytics, LLC 2005.**

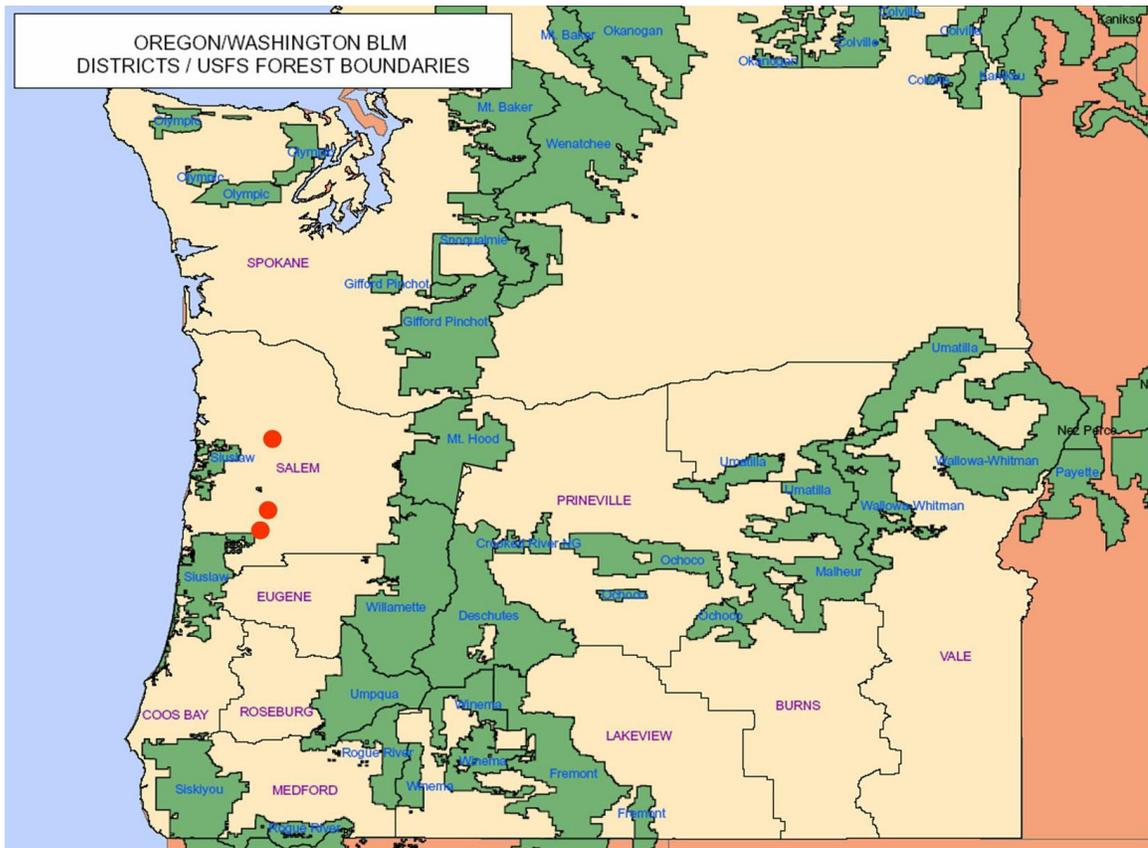


**Image of *Acetropis americana* Knight 1927.
Photograph by Pacific Analytics, LLC 2005**

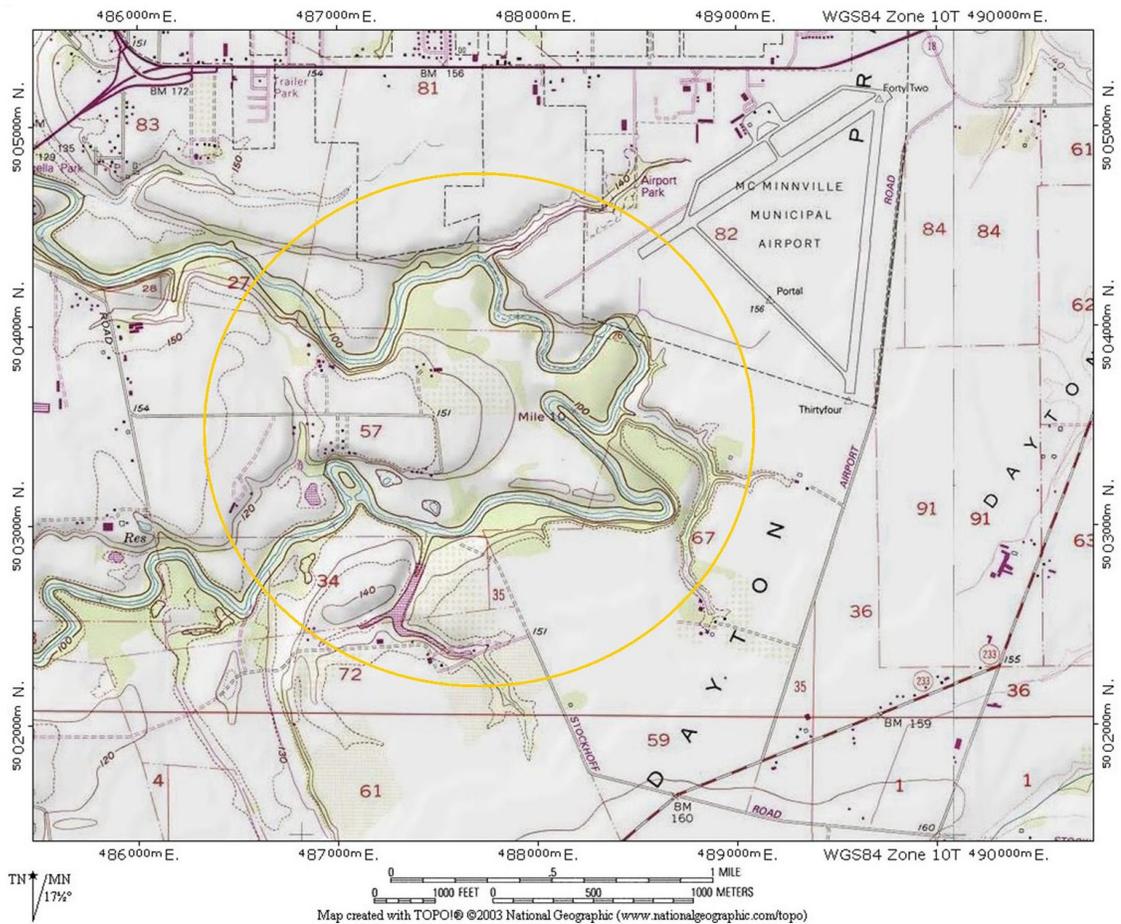
BLM Distribution Maps



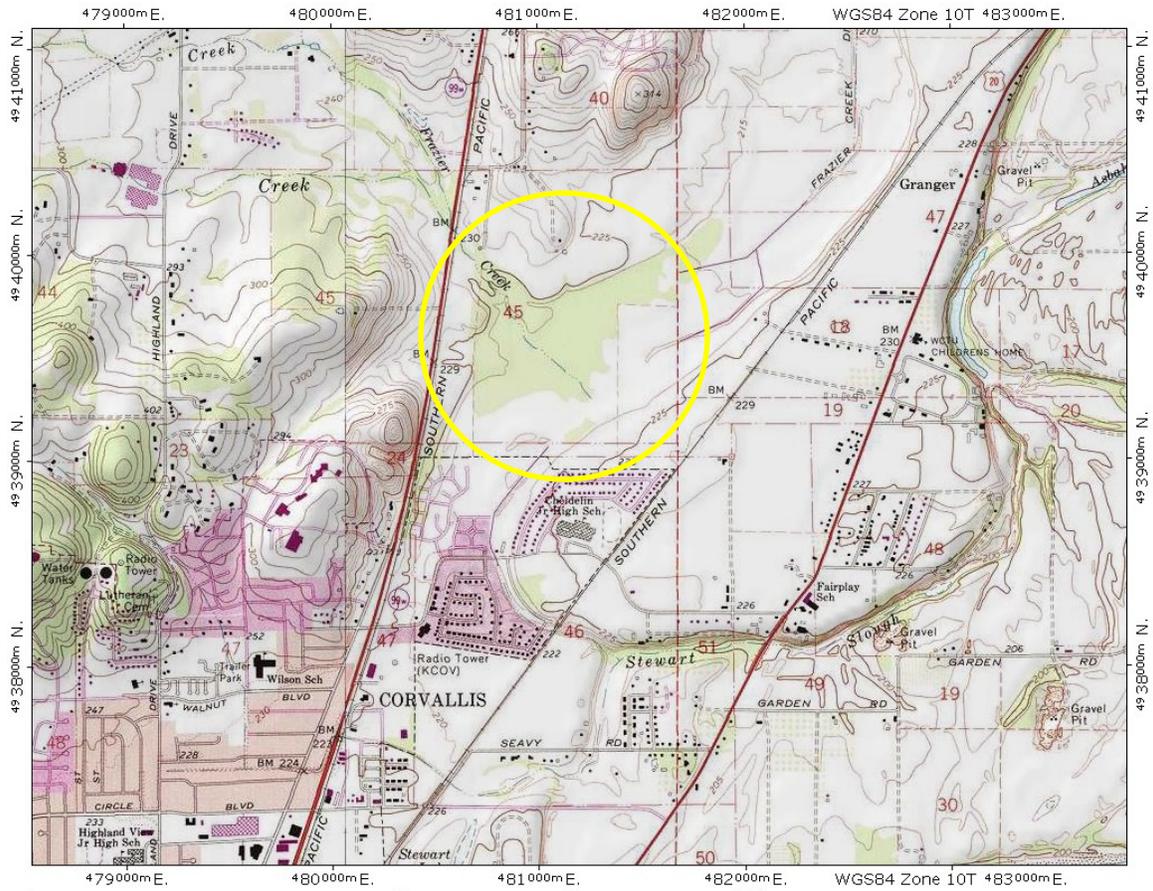
**BLM Resource Areas in Oregon where
Acetropis americana Knight has been found.**



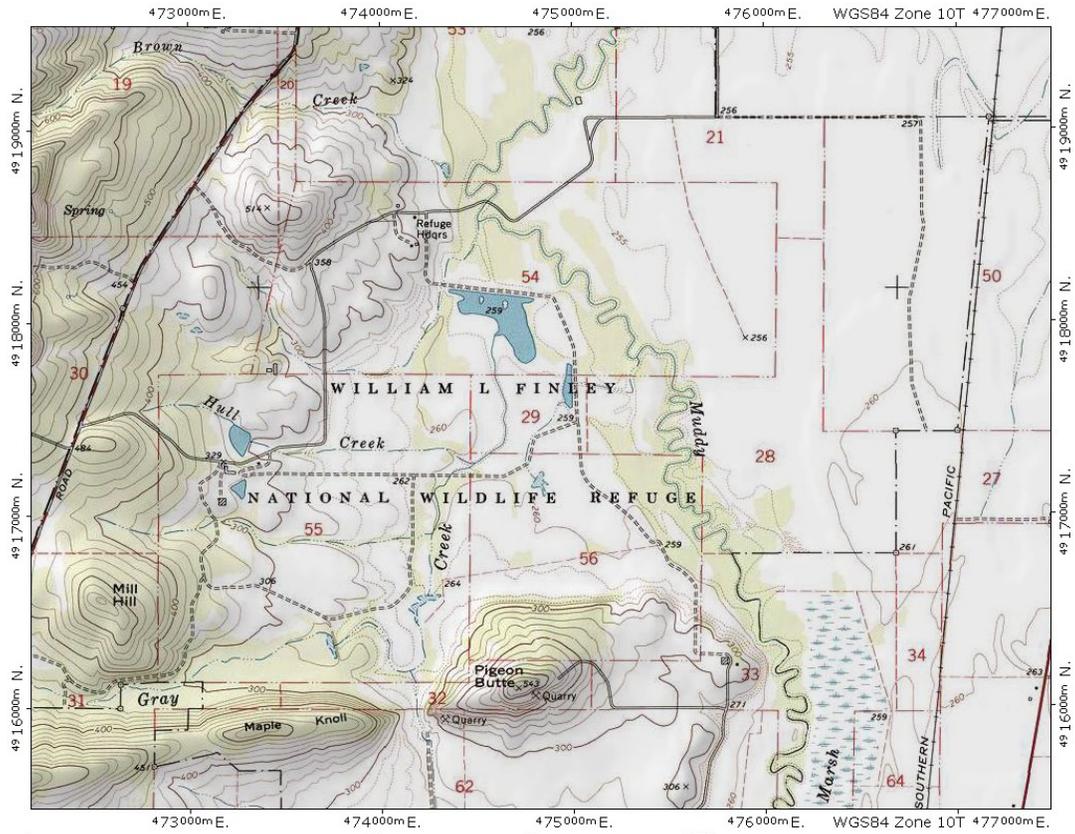
BLM Districts/USFS Forest Boundaries in Oregon where *Acetropis americana* Knight has been found.



**Locality Topographic Map of the McMinnville-Whiteson/Yamhill River Site.
Locality is within the yellow circle.**



Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)
Locality Topographic Map of the Jackson-Frazier Wetlands Site.
Locality is within the yellow circle.



Locality Topographic Map of the Finley Wildlife Refuge Site.

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Hastings Natural History Reservation, University of California, 38601 E. Carmel Valley Road, Carmel Valley, CA 93924. Photo from website: <http://www.fs.fed.us/database/feis/plants/graminoid/desces/all.html>.

Technical Description:

Holotype: Male, July, Corvallis Oregon (A.C. Burrill).

Male: length 8-mm, width 2.1-mm.

Head: width 1.02-mm, vertex 0.50-mm; apex of frons at base of tylus only moderately prominent, not projecting as in *carinatus*; vertex rather sharply depressed; brownish to black base of vertex pale each side of median line, a pair of smaller spots each side of frons near front margin of eyes.

Rostrum: length 3.1-mm, reaching to middle of third ventral segment, brownish to black.

Antennae: segment I, length 0.81-mm, brownish to black, set with short, stiff, black hairs; II, 2.76-mm, cylindrical, or very slightly thicker apically, black; III, 1.57-mm, black, only very slightly more slender than II; IV, 0.74-mm, black.

Pronotum: length 1.06-mm, width at base 1.81-mm; median carina of disk apparent but not prominent; expanded lateral margins reflexed to a vertical position on basal half but changing to near a lateral position at anterior angles. Scutellum much as in *carinatus*.

Hemelytra: pale to brownish, longer than in *carinatus*; cuneus also much longer, its base starting at a point just above apex of genital segment. Membrane uniformly fusco-brownish, veins yellowish brown, a calloused line bordering vein near apex of large areole, its length equal to half the length of cuneus.

Legs: fusco-brownish, tarsi and apices of tibia blackish.

Female: Length 7.4-mm, width 3-mm.

Head: width 1.06-mm, vertex 0.61-mm; color rather uniformly yellowish.

Rostrum: length 3.25-mm, reaching upon third ventral segment, yellowish, brownish on apical half.

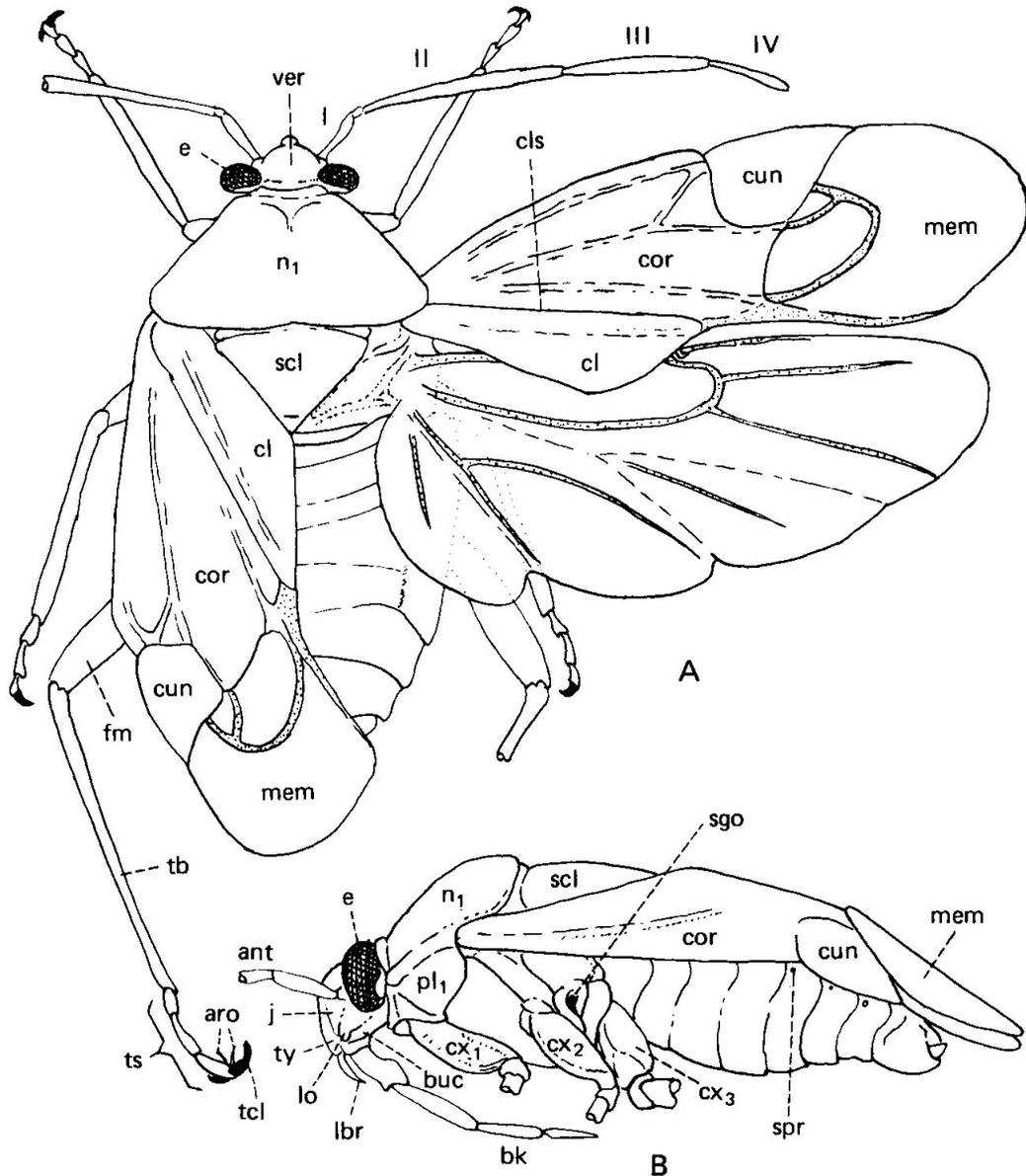
Antennae: segment I, length 0.95-mm, yellowish, set with short bristles; II, 3.55-mm, yellowish, ventral surface and the apical one-fifth black; III, 1.7-mm, black; IV, 0.77-mm, black.

Pronotum: length 1-mm, width at base 1.8-mm; basal margin nearly transverse, lateral margins more sharply reflexed at anterior angles than in males; median carina scarcely apparent; a black spot in the depression near anterior angles, a slight but apparent brownish ray behind callus. Scutellum pale yellowish, slightly more convex than in male.

Hemelytra: of a rather uniform dull white color, opaque; embolar margins strongly reflexed like the lateral margins of the pronotum;

cuneus only slightly deflexed with an obsolete brownish stripe on outer apical half. Membrane abbreviated, scarcely extending beyond apex of cuneus, pale or with a tinge of brownish, basal half of a larger areole invaded with the same opaque white pigment as that of the corium.

Legs and ventral surface: rather uniformly yellowish, tarsi blackish.



Structure of a True Bug

The figure shows the structure of a bug, *Lygus oblineatus* (Say), family Miridae. **A.** Dorsal View. **B.** Lateral View

ant = antenna; *aro* = arolia; *bk* = beak; *buc* = buccula; *cl* = clavus; *cls* = claval suture; *cor* = corium; *cun* = cuneus; *cx* = coax; *e* = compound eye; *fm* = femur; *j* = jugum; *lbr* = labrum; *lo* = lorum; *mem* = membrane; *n₁* pronotum; *pl₁* = propleuron; *scl* = scutellum; *sgo* = scent gland opening; *spr* = spiracle; *tb* = tibia; *ts* = tarsus; *ty* = tylus; *ver* = vertex; *I-IV* = antennal segments. (Figure taken from Borror *et al.*, 1989, page 285).

Glossary

frons – the upper anterior portion of the head.

carina – an elevated ridge.

embolar margins – the margins of the embolium, a submarginal delimited part of the corium on the forewing basal to the cuneus.

ocelli – simple eye consisting of a beadlike lens; sometimes found in pairs on top of head of true bugs between the eyes.

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Date Completed: September 06, 2005