

# Spring grasshopper safari

Prepared by Dan Johnson, for the **Helen Schuler Coulee Centre**,  
public program, May 1 (3:00 - 5:00 pm), 2004

These notes will give you a self-guided tour of the grasshoppers found at the Helen Schuler Coulee Centre, or in grassland around Lethbridge, Alberta, during April and May of 2004. A container and small net such as an aquarium net or butterfly net will help. Bring a hat and water.



## What kinds of grasshoppers are in Lethbridge, AB, in April and May?

Some grasshopper species are increasing in abundance, but others have actually become rare in recent years, because of changes in vegetation or weather. Most of the kinds of grasshoppers that are active during the summer will not hatch from eggs until late May. Certain grasshoppers have a different life history, and either overwinter partially grown, or hatch very early. You can find these species in April and early May. The likelihood column in the list below tells you how likely you are to find each grasshopper species around Lethbridge, or in the Oldman River valley, in April and May, if you spend an hour looking. A likelihood of "1 in 2" means that you will probably see this species, in warm weather. A "1 in 10,000" chance means that this species is very rare.

name	type of grasshopper	likelihood, May, 2004
Grouse grasshopper	Pygmy grasshopper	1 in 10,000
Club-horned grasshopper	Slant-faced grasshopper	1 in 50
Velvet-striped grasshopper	Slant-faced grasshopper	1 in 2
Brown-spotted range grasshopper	Slant-faced grasshopper	1 in 100
Speckled rangeland grasshopper	Band-winged grasshopper	1 in 2
Northern green-striped grasshopper	Band-winged grasshopper	1 in 10
Red-shanked grasshopper	Band-winged grasshopper	1 in 2000

## List of grasshoppers:

1) Pygmy grasshoppers (Tetrigidae)

### Grouse grasshopper

Ornate grouse grasshopper (*Tetrix ornata*), and  
Granulated grouse grasshopper (*Tetrix subulata*)



The pygmy grasshoppers are angular and small, usually only about 8 to 10 mm in length. They are charcoal grey or tan. The saddle-shaped cover (pronotum) on the back extends over the whole body of pygmy grasshoppers, so that you cannot see the abdomen from above. Pygmy grasshoppers are found in moister areas, unlike many of the other grasshoppers.

2) Slant-faced grasshoppers (Acrididae: Gomphocerinae)

**Club-horned grasshopper** (*Aeropedellus clavatus*)

Unlike most grasshoppers, the club-horned grasshopper is adapted to growth and development in cold weather. It hatches earlier in the spring than any other grasshopper. This species is an important item in the diet of grassland songbird nestlings. Because the club-horned grasshopper rarely flies, you need to watch the ground to see them when they jump. Later in the season, you can hear them sing 'scritch-scritch-scritch' in the grass. This grasshopper is grey, black and tan, but can be partly green. The tips of the antennae are swollen like a club, especially on the male (which has longer wings than the female). A constricted hourglass marks the back; this is a feature that is also found on some other slant-faced grasshopper species.

male



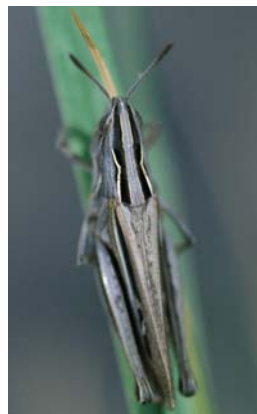
female



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**Velvet-striped grasshopper**, (*Eritettix simplex tricarinatus*)

This species overwinters on the Canadian Prairies as an immature (with wingbud), which completes development in the spring. They can be found on south-facing slopes with native grasses. The name refers to the sleek appearance. It is silver grey, green or tan. The tip of the head is pointed and has three tiny indented folds, like a trident. The back is marked with two dark longitudinal stripes highlighted by thinner, light stripes. The antennae are slightly flattened.



### **Brown-spotted range grasshopper (*Psoloessa delicatula*)**

This species is sometimes the first grasshopper found in the spring on native rangeland or large pastures. This species has also been shown to be an important food item grassland songbirds. Grasshoppers make up more than 80% of the food that grassland songbirds feed to their nestlings, and in May and June this species is often the main item on the menu, easy to catch and neither too large nor too small. The brown-spotted range grasshopper is mainly grey with strong black contrasts, although it can be green, grey, or tan, sometimes blending with the background. Two tiny rectangles (called lateral foveolae) lie just ahead of and between the eyes. These structures are not visible from above on the velvet-striped grasshopper. The hourglass on the back is strongly constricted, with the side ridges (lateral carinae) squeezed, making dark triangles. The inside of the hind leg (femur) is marked with black triangles seen from above, whereas the club-horned grasshopper has broken bars but no triangles on the legs.



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### 3) Band-winged grasshoppers ( Acrididae: Oedipodinae) **Speckled rangeland grasshopper (*Arphia conspersa*)**

This grasshopper is common on native short grass (blue grama, needle-and-thread and June grass), where bare ground and sandy blowouts occur. It was rare in Lethbridge a decade ago, but it is now the most common large grasshopper found in May. The hue is brown to charcoal, with lighter spots. In early spring, the immature hopper basks to raise its body temperature, maturing as early as March. The adult makes a crackling sound and shows red wings in flight. Making noise in flight, called crepitation, is done with the wings, and not by rubbing legs, called stridulation, as is done by the slant-faced species. A related red-winged species in the same genus flies in the fall.



**Northern green-striped grasshopper (*Chortophaga viridifasciata*)**

The northern green-striped grasshopper is usually brown or tan, but sometimes green with violet or orange antennae. This species has a pale yellow hindwing in flight. This year they were flying in coulees south of HSCC during the first week of April. They tend to stay near well-vegetated areas. This species is easy to recognize, by the strong ridge on the back (the ridge is called the median carina of the pronotum). Females are shown below; a male is shown on the front page. Other grasshopper species with prominent ridges on the pronotum are not found until July.



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**Red-shanked grasshopper (*Xanthippus corallipes latefasciatus*)**

This species is the heaviest grasshopper in Alberta, but it causes no crop damage. It overwinters as a fat, bumpy nymph that looks like a tiny brown toad. The adults are also bumpy, and have either an orange wing or a yellow wing. These grasshoppers are food for wildlife. The hind femurs (“wishbone” part of the leg) and tegmina (long, leathery forewings) are common refuse around the holes of burrowing owls, in owl pellets, and beneath posts used by kestrels. The red-shanked grasshopper is sometimes impaled on barbed wire or on prickly pear cactus, by shrikes. We have also found it to be a common constituent of coyote dung in spring and early summer. (Below: left: adult female; right: 5th instar immature)



## Grasshoppers that will hatch in late May, in the Lethbridge area

Some other grasshoppers hatch near the end of May and become numerous and noticeable in June. You might find some of these around Lethbridge around May 20. Shown below are some of these newly hatched immature hoppers. First-instar grasshoppers are very small, and have no wing bud on the back. Some of these species become pests later in the summer. Left to right:

Two-striped grasshopper (*Melanoplus bivittatus*, a spur-throated grasshopper; common pest)

Lesser migratory grasshopper (*Melanoplus sanguinipes*, a spur-throated grasshopper)

Meadow katydid (*Orchelimum*, a long-horned grasshopper; the size is shown relative to a tiny flea beetle; hatches slightly later; not a pest)



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All photographs in this guide are by Dan Johnson ( dan.johnson@uleth.ca ). For more photographs and tips, see:

[http://www.uleth.ca/~dan.johnson/htm/dj\\_gh\\_guide.htm](http://www.uleth.ca/~dan.johnson/htm/dj_gh_guide.htm)

Later in the summer, use these grasshopper natural history guides (download at the website above):

Johnson, D.L. 2001. Band-winged grasshoppers of the Canadian Prairies and Northern Great Plains. *Arthropods of Canadian Grasslands 7*: 5-12. Published by the Biological Survey of Canada, Ottawa.

Johnson, D.L. 2002. Spur-throated grasshoppers of the Canadian Prairies and Northern Great Plains. *Arthropods of Canadian Grasslands 8*: 16-25. Published by the Biological Survey of Canada, Ottawa.

Johnson, D.L. 2003. Slant-faced grasshoppers of the Canadian Prairies and Northern Great Plains. *Arthropods of Canadian Grasslands 9*: 5-16. Published by the Biological Survey of Canada, Ottawa.

