

SASKATCHEWAN GHOST MOTHS

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Ghost Moths (of the family Hepialidae) are so named because the male of a common European species (*Hepialis humuli*) is a ghostly white and is known as the Ghost Swift. These moths are recognized by the fact that they have antennae no longer than the width of the base of the forewings. They have hind wings that are almost equal in length to the forewings. The females fly back and forth in a semi-circle (like a pendulum) over the area where they lay their eggs. The larvae feed underground in the roots of plants and bore upwards into the stems. All the feeding is done in the larval stage, as the adults have non-functional mouths. The adults emerge from mid-July until September.

Saskatchewan Ghost Moths are of two genera; the genus *Sthenopsis* with a wing expanse from 60 to 90 mm and the genus *Hepialis* with a wing expanse around 30 mm.

The Saskatchewan species of *Sthenopsis* are:

Sthenopsis argenteomaculatus (Harris) —
(The Silver-spotted Ghost Moth).
Forewings banded with dark brown;

hindwings mouse grey in the male, straw yellow in the female. Lower silver spot in the middle of the forewing enlarged and triangular. The larvae feed on alder roots, and also other plants, as they are found in areas where there are no alders. This species is rather common.

Sthenopsis purpurascens (Packard) —
Forewings banded with dark brown; hindwings mouse grey. Silver spots on forewings equal in size or altogether lacking. Easily confused with male Silver-spotted Ghost Moth. There are a few unconfirmed records for Saskatchewan.

Sthenopsis quadriguttatus (Grote) —
Hindwings salmon pink; dark bands on forewings yellowish-brown. A common species. The females lay their round, smooth, creamy-white eggs along the edges of poplar woods.

(*Sthenopsis thule* (Strecker) is pale yellow or dusky white. The submarginal bands of the forewings are reduced to brown spots. The caterpillars feed on willow roots. This species has been reported from Manitoba and should be watched for in eastern Saskatchewan).



Sthenopsis argenteomaculatus (upper).
W. Harris



Sthenopsis argenteomaculatus (under).
W. Harris



Sthenopis quadriguttatus (upper). W. Harris



Sthenopis quadriguttatus (under). W. Harris

The Saskatchewan species of *Hepialis* are:

Hepialis hyperboreus (Moschler) — Yellowish brown. An almost continuous v-shaped silver line starting at the apex of the forewing and extending almost to the base of the wing. Found in the Canadian Zone in Central Saskatchewan.

Hepialis novigannus (B.&B.) — Similar to *H. hyperboreus* but the silver line on the forewing with the lower edge straighter. Occasional in pine woods in September.

(*Hepialis gracilis* (Grote) — Brownish grey with the forewings marked with a v shaped band. Suspected of being a species that feeds on ferns. Occurs west to Alberta, so it undoubtedly will be yet discovered in Saskatchewan).



Hepialis hyperboreus.

W. Harris



Hepialis novigannus; L-upper, R-under.

W. Harris

GHOST MOTHS AT THE PAS, MANITOBA

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Ghost moths are large moths. An outstretched specimen will fill the whole palm of the hand. They are flesh coloured. They have heavy abdomens the size of one's little finger. When found, they are always impressive.

In The Pas area, they come to lights in midsummer and settle on a wall or floor, often just above the light source. They hang downward like a limp rag and will spend the whole night in this position. Due to their size, they may be vulnerable to sparrow attack. It is said that the caterpillar is white and lives underground for several years. According to authors one species feeds about the roots of water plants in low, wet places. There seems to be no record of anyone finding a Ghost Moth caterpillar in Canada.

The females lay eggs like poppy seeds falling from a pod. A female, held in the hand, will lay dozens of eggs in a very short time. Evidently, they are distributed at random as the female is on the wing. Thousands of eggs are so dropped at random. Apparently, this prolific egg production and dispersal is necessary to assure the survival of the species. I have seen no data on how many eggs a female has been known to lay. This could be a project for some student interested in moths. It would produce new knowledge on a little known subject. The number of eggs laid may parallel those laid by say, a salmon.

Some Ghost Moths are very rare. *Phanopia thule* (Strecker) in Southern Manitoba has been taken four times only in the past 90 years. There are at least four species of Ghost Moths in The Pas area. Two are the very large species

mentioned above and two species are rather small — perhaps 30 mm across. The smaller species are the scarce ones in this area. Some 30 years of collecting has failed to produce even a dozen specimens.

The large, rare, yellowish species mentioned above occurs in the Dauphin area and may be associated with the Duck Mountain Drainage system. I collected the fourth known Manitoba specimen, in Dauphin, some years ago. It was on the bus depot window and was the only insect present! In the Riding Mountains of Manitoba, where I was Park Naturalist for four seasons in the early 60's, at least two other species of Ghost Moths occur. There may be, therefore, in Manitoba, about six species of the group. They belong to different genera, but all are true Ghost Moths.

The whole group is of very ancient stock — perhaps at the very root in the evolution of the Lepidoptera . . . which makes it 200 million years ago.

There are dozens of species in Australia and Ceylon. Some of the largest known moths are Ghost Moths. A particularly spectacular species from Australia is a giant — 25 cm across.

Students of this group of insects will find that the specimens tend to go greasy in a few years. Over a period of years, the grease will spoil the specimens if it is not removed. They are very easily cleaned by placing the whole specimen, labels and all, into a jar that has previously been filled with naphtha. The specimens come out clean and very fresh looking after a few hours.