

NOTES ON SOME HEMIPTERA WHICH HAVE BEEN INTRODUCED INTO BRITISH COLUMBIA

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In spite of the best efforts of the inspection service, foreign insects find their way into this province from time to time and some from eastern Canada and the United States. While frequently species which are most unwelcome obtain access, we have, within the last fifty years, received some which may prove of distinct economic value. My remarks are based upon experience in collecting Hemiptera in British Columbia since 1917.

Phytocoris tiliae L. This handsome Mirid has probably been present in British Columbia for a considerable time. It is fairly common in Britain and belongs to a family known to be largely predaceous in habit. Usually it is brightly mottled with light green and black. It is to be found on tree trunks, especially deciduous trees, and occasionally on wooden fences. In 1918 to 1923 I found it common on boulevard trees in Vancouver's west end at the foot of Georgia and nearby streets, often accompanied by the slender thread-legged bug, *Empicoris pilosus* (Fieb.), another predaceous species. In 1954 I looked for it again in Vancouver and found it abundant on two decaying deciduous trees at the foot of Robson Street, on this occasion accompanied by numbers of another *Phytocoris* species new to B.C., (apparently the European *P. dimidiatus*, but not yet definitely identified). Although present on the mainland for such a long period *P. tiliae* has not yet been found on Vancouver Island.

Melanotrichus concolor Kbm. This is another European Mirid which feeds on broom, *Cytisus scoparius*. The insect is green, of about the same shade as the host. This species was first noticed on Vancouver Island in the late twenties. It is said not to be very abundant in Britain, but on Vancouver Island it swarms on the broom bushes to which it is definitely injurious.

Heterotoma meriopterum Scop. This curious Mirid is a European species which was recorded by Knight in 1917 from New York and is now found in British Columbia. It is very common on Southern Vancouver Island and the lower mainland. We took it first at Cedar Hill, Victoria, in 1933 where it was swept from broom bushes; but it is abundant on almost any kind of herbage and brush. It is dark brown or black and can be recognized at once by the first two joints of the antennae being swollen and thickly clothed with dark hairs; the third and fourth joints are bare and filiform. Little or nothing seems to be known of its life history but it does not appear to be harmful in any way.

Dicyphus pallidicornis Fieb. This European species was sent to me from Vancouver in 1944, but it has been present in Western North America for a considerable time, having been previously reported from Oregon. Its only known host is *Digitalis*, and if it confined its attentions to the common garden foxglove no great harm would be done. But it also attacks the medicinal *Digitalis* which is grown in some quantity in the Victoria district, and damages the plants extensively. It can be controlled by spraying with DDT. There are several generations during the summer; the last generation is usually brachypterous and hibernates among dead leaves and at the base of the plants. The species is abundant up and down the coast of British Columbia wherever foxgloves are grown.

Campyloneura virgula Fieb. This pretty species is allied to *Dicyphus* which it closely resembles. It is a native of Europe where it is known to be an efficient mite destroyer. My first record of it was in 1949 at Goldstream on Vancouver Island where it was swept from alder trees and nettles.

It has since been taken in small numbers at various points near Victoria and on the lower mainland. The insect is yellowish, the wings hyaline tinged with yellow, the thorax with a broad band of yellow, the base of the scutellum yellow, the apex white. The cuneus is bright yellow, the apical portion orange-red. I have swept it from alders, poplars and various kinds of brush. It may prove to be a useful addition to our fauna.

Orius minutus L. This small Anthorid was discovered by Norman Tonks on Lulu Island on the lower mainland in 1951 on raspberries and logans. It is a European species common in Britain. Our only known native species is *Orius insidiosus* from which *minutus* is readily distinguished by its overall brown colour and broader outline. *O. minutus* is predaceous on mites and small insects and may prove to be a useful species. So far the lower mainland is the only locality record.

Gargara genistae Fab. This is one of the only two species of treehoppers found in Britain. It has previously been known to occur in New Jersey where it was taken in 1917. In 1934 I took it at Cedar Hill, Victoria, on broom. Since that time *G. genistae* has spread to Goldstream eleven miles west. It is not known to be injurious.

Arytaina spartiophila (Forst.). In 1949 this Psyllid occurred in enormous numbers on broom, *Cytisus scoparius*. That was the first year it had been recorded in British Columbia. It has been introduced from Europe and was first recorded at Fort Lewis, Washington, in 1935. When in large numbers it does heavy injury to broom. This is not entirely to be deplored since, over the years, broom has formed dense thickets, often eight feet high on the Goldstream hills. Such thickets are a fire hazard, and effectually smother second growth. A check to the advance of broom may prove to be an advantage. Many areas formerly in grass are now covered with broom.

Graphocephala coccinea (Forst.). This leafhopper, which is common in Eastern Canada in shady woods, was numerous on rhododendrons at a nursery outside Victoria in 1941. It is strikingly marked with broad stripes of red and green. It does not seem to have spread in the Victoria area, but may still be present on rhododendron.

Stictocephala bubalus (Fab.). The buffalo treehopper was not known as a native species in this province prior to 1920, when I received a specimen collected on the Agassiz Experimental Farm where it had probably been introduced on nursery stock. A few years later *S. bubalus* appeared in the southern Okanagan, but this may have been a separate introduction. The species is now well established. It does harm to several kinds of fruit trees by ovipositing in the twigs.

Stictocephala dicerus (Say). This is recorded only from Agassiz, B.C., from where I received a number of specimens in 1925 and 1926, but none since. It does not appear to have spread, and has never been recorded from interior districts. It was probably introduced from eastern Canada in nursery stock.

Macropsis fuscula Zett. This European species appeared on logans and raspberries on Lulu Island in the lower Fraser Valley in 1952 and within a year increased to enormous numbers. By 1954 it had spread 30 miles up the Fraser Valley where it was found on varieties of wild *rubus*. The introduction of this species is most unfortunate on account of the hazard to the loganberry industry. It has already spread to Vancouver Island, which was to be expected, since the site of the original infestation is close to the airport. Without such artificial means of distribution it might have been confined to the lower mainland for a long period as has been the case with other species. This occurrence has been adequately reported elsewhere by H. Andison (Can. Ins. Pest Rev. 32(1): 4. 1954.)

Macropsis virescens var. graminea (Fab.). This was first taken by me at Haney on poplars in 1954. It is a European species now widely distributed in North America but is not expected to prove of any particular economic importance.

Idiocerus decimusquartus Schr. This name now takes precedence in the case of this leafhopper which was long known as *Idiocerus scurra*. It is another denizen of poplar trees and is known to have been present on the lower mainland since 1922, when I received a specimen collected at New Westminster. This is a European species, present in North America for a long time, which may have come to British Columbia in the egg stage in the first poplars brought here. Like several other species it has apparently not yet succeeded in crossing to Vancouver Island.

Allygus mixtus (Fab.). This large handsomely marked European leafhopper was first noticed on Vancouver Island in 1948, but probably it had arrived some years earlier since it was already well distributed over the southern districts. It is an active flier, so its spread could be quite rapid. It now occurs on the mainland, breeding on oak and other deciduous trees and on snowberry (*Symphoricarpos*). So far it has not proved injurious.

There are several other species which have been edging their way across the continent for years, but cannot be mentioned here. Others will, no doubt, continue to arrive; it is some comfort to know that, in the case of Hemiptera, many are harmless, and some are definitely beneficial.

An unusual flight of termites

Emergence of alate first reproductives of the most commonly occurring termite in the lower Fraser Valley, *Zootermopsis angusticollis* Hagen, may occur during almost any month of the year (Jacob, J. K. The Termites of British Columbia, their structure, bionomics and intestinal fauna. Unpublished Masters' Thesis, University of British Columbia, 1938). I have personally observed them from January to May and from August to November. For some years now I have watched the autumn flight along the north slope of the Point Grey Peninsula any time between the end of August, through September. These termites abound in old logs that lie half buried in sand or gravel in various stages of decay on both sides of Burrard inlet. They are in a surprisingly high percentage of older homes in the Kerrisdale-Kitsilano area and may occur almost anywhere in Vancouver where earth is in contact with the stucco or wooden siding of a house and rot sets in. Garages whose flooring rests on timbers directly in contact with the earth and buildings with damp, dead-air spaces below them, are particularly susceptible.

The autumn flight of termites along the Point Grey peninsula can be directly followed by the movements of large flocks of Bonaparte's gulls (*Larus philadelphia* Ord.) which pluck the termites out of the air. Professor Cowan told me that he has shot the birds during these manoeuvres and has

found them packed with termites. One-time residents of Gambier Island have assured me that they have frequently watched this behaviour amongst large gulls also, so it is probably general along our coasts wherever termites swarm. Normally, off Point Grey, this flight occurs from 300 to 500 feet above ground and extends inland from the sea beaches for possibly one quarter of a mile. But in the early evening of August 1, 1956, an unusually large number of these delicate, black-headed gulls hunted termites from the sea shore inland and overhead until they passed southwards out of sight. The line of diving, twisting gulls stretched east and west as far as one could see, at about the height of tall, old fir trees nearby, which would be between 150 and 200 feet. Five days later some residents of South Burnaby described to me this flight of gulls stating that it had come from the north and had passed southwards over the Fraser River and out over Lulu Island.

In past years, it would seem that the supply of winged termites gave out within a few hundred yards of the sea shore but the flight of termites on August 1, 1956, must have exceeded all previous ones to have supplied the birds with food for several miles.—G. J. Spencer, Dept. of Zoology, University of British Columbia.