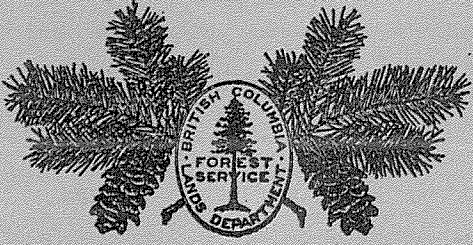


'33

950

DIVISION



# BRITISH COLUMBIA FOREST SERVICE

British Columbia Forest Service

Research Division

REPORT ON APHID INJURY TO YOUNG DOUGLAS FIR  
STANDS IN THE VICINITY OF NANAIMO

C. G. Riley  
Dec., 1928.

634.909711  
BCMF RES  
1928  
MR 4  
c. 1 ma

24-10-34

634.909711/BCMF RES/1928/M  
RILEY, C.G.  
REPORT ON APHID INJURY TO  
YOUNG DOUGLAS FIR STANDS  
CJLM c. 1 ma Main.....

CJLM

4450

634.909711

BCMF RES

1928

MR 4

British Columbia Forest Service  
Research Division

REPORT ON APHID INJURY TO YOUNG DOUGLAS FIR  
STANDS IN THE VICINITY OF NANAIMO

G. G. RILEY

DEC., 1928.

LIBRARY  
MINISTRY OF FORESTS  
1450 GOVERNMENT ST.  
VICTORIA, B.C.  
V8W 3E7

C.G. Riley.

Report on Aphid Injury to Young Douglas Fir  
Stands in the Vicinity of Nanaimo.

About December 18, a letter was received by Mr. W.A. Downes of the Dominion Government Entomological Laboratory at Victoria, reporting "a disease on the evergreens at South Wellington and Nanaimo River", which was causing considerable loss through leaf-fall, to contractors who were cutting Christmas trees for the export trade. The letter was sent by Mr. A.C. Wilson, Florist and Seedsman at Nanaimo, and had subsequently passed through the hands of Mr. W.H. Lyne, Inspector, Imported and Exported Horticultural and Field Products, Court House, Vancouver, B. C., and Mr. J.M. Swaine of the Entomological Branch at Ottawa, both of whom expressed the opinion that the trouble was caused by an infestation of aphids, probably Chermes cooleyi.

On receipt of the letter Mr. Downes paid a visit to the Forest Branch Research Office to enquire if anything was known there of the matter. As a result, it was arranged that the writer should accompany Mr. Downes on a visit of inspection to the scene of the trouble.

The region in question was accordingly visited on December 20. It was found that over extensive areas along the Island Highway between Nanaimo River and Nanaimo, the

fir reproduction, most of which is under twenty feet in height, was being seriously defoliated - apparently the result of a heavy infestation of aphids during the preceding summer. In the most severe cases the leader and several of the uppermost twigs of the current year's growth had been completely defoliated, while on other trees only a negligible number of leaves had fallen off. On practically all the young firs in the vicinity there was some evidence of aphid injury. This was symptomized by a browning or a yellowing of a small area, usually in a purple margined band across the leaf, slightly longer than the breadth of the leaf. In the centre of this area, and ordinarily on the lower surface of the leaf, a minute puncture could be seen with the aid of a hand lens. This is the point where the insect had inserted its long, sucking mouthparts and sucked out the plant juice on which it lives. Where this injury was slight, it appeared as though the leaf might recover, but in more severe cases, the leaf had browned from the point of injury to the tip, or had died completely and fallen. A quick shake of any of these trees resulted in a shower of these browned leaves.

The injury was for the most part concentrated on the leaders, and upper portions of the trees. It was

not determined whether or not high trees suffered. Mr. Wilson states that the area visited is typical of many localities in the vicinity of Nanaimo.

The causal insect has been identified by Mr. Downes as a species of Chermes, probably cooleyi, though the species cannot be definitely determined until some of the living insects can be procured.

Chermes cooleyi is the name of the well-known spruce gall aphid, which according to Mr. Lyne alternates during the course of its life cycle between Sitka Spruce and Fir. Being a native insect and hence having all its natural enemies to keep it under control, it is quite unlikely to become very seriously epidemic, and will in all probability become negligible in importance in subsequent normal seasons. It is only in seasons of abnormally favorable conditions that such insects become a serious pest. In the summer of 1928 these aphids were observed in unusual abundance by the writer in various locations on the mainland coast and on Vancouver Island.



The above photograph, taken by Mr. Downes, illustrates typical injury at the top of a young fir at the time the investigation was made. This tree stood about ten feet high.

Note: Since the writing of the above, Mr. Downes has received word from Dr. Swaine at Ottawa, saying that on further examination of some of the affected fir leaves, he has found Dipterous larvae inhabiting the browned areas. This fact has raised a doubt as to the real cause of the injury - aphid or fly; and further investigation is to be carried on by the Dominion Entomological Branch.