A NOTE ON THE ACCEPTABILITY OF LEAF MACERATES ON FILTER PAPER OF PLANTS FROM PEAT BOGS BY ADULT BLACK VINE WEEVILS, Brachyrhinus sulcatus (F.)

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Foliage of Himalaya blackberry and salal, common weeds in and around blueberry and cranberry bogs, when fed to adults of the black vine weevil, *Brachyrhinus sulcatus* (F.), significantly shortened the preoviposition periods and produced greater numbers of total and viable eggs than the other common weeds: labrador tea, fireweed, and sheep sorrel, or even the crop plants blueberry and cranberry (Cram and Pearson, 1965).

To test the preference of adult weevils for these hosts, 750 mg of fresh leaves were ground in 2 ml of water with sand to destroy the physical characteristics of the leaf and the resulting macerate was assessed by two methods. In the first, macerate was immediately spotted on the edge of a narrow strip of Whatman No. 1 filter paper (2.7 by 55 cm). Each of the seven hosts mentioned was spotted six times at random. The strip was suspended in a vertical glass tube (3.5 by 58 cm) containing watersaturated cotton wool at the lower end (Fig. 1A). Twenty adults were introduced and the upper end of the tube was sealed with a rubber stopper. The tube was placed in the dark at room temperature. After 20 hours

In the second method using stacked 4.5 cm filter paper disks (Fig. 1B) closely similar feeding ratings were recorded except that salal was rated below blueberry (Table 1). In this test a spot of macerate was placed in the centre of each disk, and was contained by a separating glass ring. Distilled water (.1 ml) was added to each spot so that only plant solubles reached the outer area of the filter paper where the adults fed. The stack was covered by an inverted glass jar to maintain high humidity and keep the papers from drying out. Results are from 20 weevils run concurrently with the strip test.

These observations correlate with results obtained at the same time by Cram and Pearson (1965) on the reproductive behaviour of this weevil. Labrador tea appears to be preferred as a macerate more than would be expected from the amount of damage seen in the field. Possibly the physical nature of this rather tough and densely hairy foliage is a deterrent to feeding.

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TABLE 1—Rating of the amount of feeding by the black vine weevil, **B. sulcatus**, on filter paper spotted with leaf macerates of plants from peat bogs.

Plant	Strip test Replicates						Sum	Disk test
	1	2	3	4	5	6		
Himalaya blackberry Salal Labrador tea Blueberry Cranberry Fireweed Sheep sorrel Untreated	++,++++++++++++++++++++++++++++++++++++	++ ++ ++	++ ++ + + + - +	++ + + + +	++++	+++ + + - -	12 8 6 4 3 2 1	++++ ++ +++ +++ +++ ++

the strip was removed and the amount of feeding at the spots was rated (Table 1). Himalaya blackberry was clearly the preferred host followed by salal and labrador tea. Blueberry and cranberry were low in acceptability followed by fireweed and lastly sheep sorrel.

References

Cram, W. T. and W. D. Pearson, 1965. Fecundity of the black vine weevil, **Brachryhinus** sulcatus (F.), fed on foliage of blueberry, cranberry and weeds from peat bogs. Proc. Entomol. Soc. Brit. Columbia 62: 25-27.

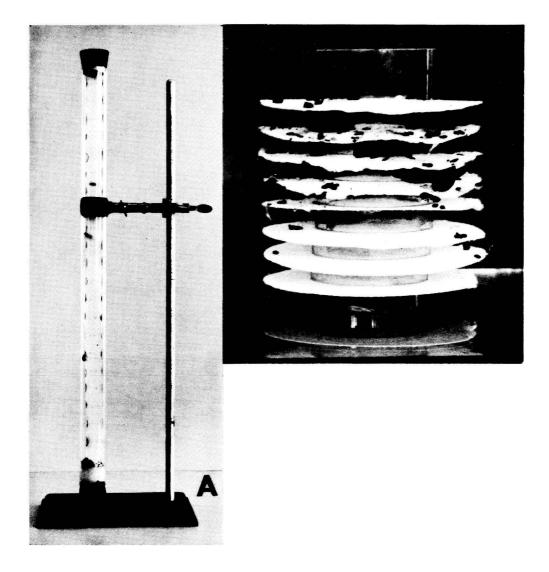


Fig. 1—Apparatus for appraising the acceptability of leaf macerates of various plants on filter paper to the adult black vine weevil, **B. sulcatus.** A. Strip test. B. Disk test.