

Fruit	Location	Last Spray	Residue on	Residue at harvest on
Peach	Summerland	June 29	June 29 (36 ppm)	Aug. 13 (3.6 ppm)
Peach	Osoyoos	June 21	June 24 (22 ppm)	Aug. 27 (3.1 ppm)
Apricot	Summerland	May 24	June 29 (48 ppm)	July 24 (8.5 ppm)
Apricot	Osoyoos	May 10	June 24 (6.6 ppm)	—

other strategic points throughout the Valley, from the international boundary to Summerland and into Naramata, Westbank and Kelowna. Four hundred and twenty-four traps were used. Throughout the season 9,231 trap inspections were made, using 1,360 gallons of bait which was prepared in batches of 45 gallons, using 2 gallons panomalt, 160 lbs. golden brown sugar, .5 lb. Brewer's yeast, and 42 gallons water. Two suspicious moths were found but neither proved to be oriental fruit moth.

Fruit fumigation trials were conducted at the London Laboratory, to determine the lethal dosage of the various stages of the insect, as well as the tolerance of the fruit. Modifications were made in the import regulations. Fumigation is now required only for the fruits of apricot, peach, pear, and quince.

Late season observations on the fumigated land indicated that there had been considerable killing of weed seeds, and the couch grass had been completely killed out in the entire orchard. Fruit trees which had been

replanted showed very good growth, better than usual with freshly planted nursery stock.

Cost Estimates

Fumigation — including consultant fees, fumigation contract, gas, salaries, travelling expenses, extra labour	\$ 43,843.00
Spraying — including sprayer, material, wages, labour	8,057.25
Trapping — including material, salaries, travelling expenses, labour	5,415.69
Provincial Government — including preliminary fumigations, orchard compensation, fruit compensation, transportation	17,333.89
	<hr/>
	\$ 74,649.83

Acknowledgments

This paper is the compilation of unpublished data supplied by Mr. L. L. Reed, Plant Protection Division, Ottawa; Dr. J. Marshall, Entomology Laboratory, Summerland, B.C.; Mr. H. A. U. Monro, Science Service Laboratory, London, Ontario; Mr. W. Molyneux, Plant Protection Division, Penticton, B.C., and Mr. R. P. Murray, Provincial Horticulturist, Victoria B.C.

References

- (1) Touzeau and Neilson. Plans to Eradicate Oriental Fruit Moth in the Okanagan Valley, B.C. Proc. Ent. Soc. British Columbia 54:23-24. 1957.

On the Reproductive Potential of the Sheep Nostril Fly
Oestrus ovis L. (Diptera: Oestridae)

Most references state that the eggs of the sheep nostril fly hatch in the body of the mother and the fly deposits living larvae; Hearle (1) states that in one instance under observation, 60 larvae were deposited in one hour. Only one reference that I can find, (Smart, (2)) states that the fly deposits eggs.

In 1954 when working on the Lac du Bois cattle ranges some 13 miles from and 2000 feet above Kamloops, I found that newly emerged nostril flies clustered in crevices in the old log hut that was being used as a laboratory, particularly in the holes cut into the door frame to take the latches of the

lock. On one morning before the sun warmed the cabin no fewer than four female flies were clustered there; they were freshly emerged and undamaged. There were no sheep on the ranges at this time so the flies may not have been chasing anything.

One of these flies was dissected to determine the egg-laying potential. The ovaries were distended with 624 eggs of uniform size each 0.4 mm. long, which readily separated out from the follicles. Abruptly smaller than this series, were strings of very tiny moniliform ova in the germaria.

It would seem that the flies lay the first quota of 624 eggs and either lay no more or remain quiescent until the second series develops. At the tips of the follicles, in the germaria, were minute embryonic eggs which probably never develop before the fly season ends.

References:

- (1) Hearle, Eric. 1938. Insects and allied parasites injurious to livestock and poultry in Canada. Farmers bulletin 53, Dept. of Agric., Ottawa, Canada.
- (2) Smart, John. 1943. A Handbook for the Identification of Insects of Medical Importance. British Museum, London, Oct. 1943, p. 78.

—G. J. Spencer, University of British Columbia.

A Food Plant of *Orthorhis crotchii* Les. (Coleoptera, cruculionidae)

On September 8, 1956, I found pupae of the weevil *Orthorhis crotchii* Lec. in the seed pods of stick-leaf, *Mentzelia laevicaulis* T. and G. at Oliver, B.C. More than 100 adults were obtained in the ensuing 5 weeks from dried plants kept at room temperature. A parasite, *Bracon* possibly *nupera* Cress. was identified by Mr. C. D. F. Miller of the Systematics Unit in Ottawa.

On June 14, 1947, adult weevils were literally swarming on stick-leaf plants at Midway, B.C. In spite of its local abundance, this species is apparently rare in collections of B.C. Coleoptera.

—J. Grant, Forest Biology Laboratory, Vernon, B.C.

OBSERVATIONS ON A PINE SHOOT MOTH, *EUCOSMA SONOMANA* KFT. (LEPIDOPTERA: OLETHREUTIDAE)¹

J. GRANT²

The shoot moth, *Eucosma sonomana* Kft., is one of a group of six members of this large genus which Heinrich (1923) lists as feeders on coniferous trees. In British Columbia it is known to occur across the southeastern part of the province from Elko to the Okanagan Valley and northward as far as Chase.

Ponderosa and lodgepole pines are the only hosts so far recorded in British Columbia; larvae have been reared on Englemann spruce in Montana.

The following observations were made in the summer of 1957 in the Grand Forks district, and refer only to attacks on ponderosa pine.

Life History

The pupa overwinters. It is believed that the egg is laid in early spring on the growing tips of the host tree. Young, open grown stands are most susceptible but trees up to 40 feet in height may be attacked. The larva bores into the centre of the shoot, leaving only a minute trail at

first, but in the late instars, hollowing out most of the central pith. During the feeding period there are no exudations of pitch or frass; the only symptoms are a slight dwarfing of infested terminals, and a tendency to droop. When fully grown the larva bores an exit hole through the side of the shoot and drops to the ground.

Larvae from Cascade and Midway pupated in the insectary at Vernon between mid-June and early July. Pupa were kept in the insectary until the autumn, when they were placed in cold storage at 35°F. Adults began to emerge three days after the pupae were transferred to constant temperature cabinets at 70°F.

Economic Importance

Although *Eucosma sonomana* may seriously disfigure young pines by killing or distorting the new growth, it is not considered to be a pest of major importance in British Columbia. Multiple stems are the most serious deformity resulting from the death of the main leader, but as many of the infested leaders survive, the form of the tree is not always affected.

Three types of injury have been observed. Dead, slightly curved leaders

1. Contribution No. 465, Forest Biology Division, Science Service, Department of Agriculture, Ottawa, Ontario.

2. Forest Biology Laboratory, Vernon, B.C.