

# Is *Prunus laurocerasus* a new host plant for *Yponomeuta evonymellus* (Lepidoptera: Yponomeutidae) ?

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*Abstract:* An infestation of the small ermine moth of *Prunus padus*, viz., *Yponomeuta evonymellus*, was found on *Prunus laurocerasus*.

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## Introduction

The attention of the Parks Department of the Town Council of Genemuiden (province of Overijssel, The Netherlands) was drawn to a severe infestation of larvae on leaves of the evergreen *Prunus laurocerasus* L. in 1987. The Plantenziektenkundige Dienst (Plant Protection Service) at Wageningen was consulted and the insects were identified as *Yponomeuta evonymellus* (Linnaeus).

*Yponomeuta*-species are monophagous or at least limited in their choice of host plants. In Western Europe larvae of *Y. evonymellus* feed on the native *Prunus padus* L. and the imported *P. virginiana* L. (G. J. Kusters, pers. comm.). Both species belong to the subgenus *Padus*.

As far as I know *Y. evonymellus* was never recorded from *P. laurocerasus* (subgenus *Laurocerasus*). In the surroundings (500 meter) of the infested *P. laurocerasus* in Genemuiden no *P. padus* was found.

The acceptance of the evergreen *P. laurocerasus* as a food plant for *Y. evonymellus* was tested.

## Methods and results

Third instar larvae of *Y. evonymellus* were collected from *P. padus* in Leiden and two hundred specimens of these larvae were placed on *P. laurocerasus* at 20 °C. The larvae started eating and accepted the young, just developing leaves, but also the old leaves from the preceding year. Almost all larvae pupated and a portion of them was weighed.

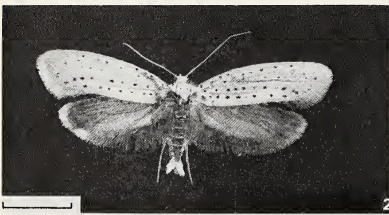
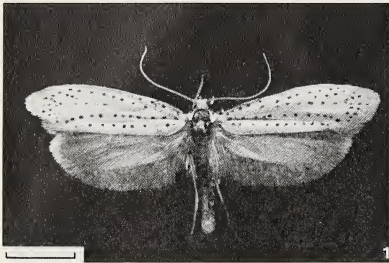
The weight of females and males reared on *P. laurocerasus* was significantly lower than the weight of specimens reared in the laboratory on *P. padus* ( $p < 0.05$ , Wilcoxon) (table 1).

## Discussion

Great differences exist between *P. laurocerasus* and *P. padus*. *P. laurocerasus* is an evergreen shrub, this in contrast with the deciduous *P. padus*. The toughness of young and old leaves of both *Prunus*-species was measured by cutting out leaf discs with a surface of 3.14 mm<sup>2</sup> with an electric pressure sensor (courtesy A. H. Prins). For *P. laurocerasus* and *P. padus* the

Table 1. Pupal weight (mg  $\pm$  SD) of *Y. evonymellus* grown on two *Prunus*-species.

Species	Females		Males	
	Number	Weight	Number	Weight
<i>P. laurocerasus</i>	22	26.4 $\pm$ 5.0	20	22.6 $\pm$ 4.5
<i>P. padus</i>	50	41.9 $\pm$ 3.4	52	31.5 $\pm$ 3.9



Figs. 1-2. Moths of *Yponomeuta evonymellus* collected from *Prunus padus* (1) and *P. laurocerasus* (2). (Scale line 0.5 cm.)

pressure ranged from 103 to 709 and 105 to 149 gram, respectively. Larvae of *Y. evonymellus* have the capacity to feed on the tougher leaves of *P. laurocerasus* as they accept not only the young but also the old leaves as food. *P. laurocerasus* is well known to entomologists as a source of hydrogen cyanide for killing bottles. Apparently larvae of *Y. evonymellus* can cope with HCN; in their host plant *P. padus* also a high amount of this chemical can be found (Hegnauer, 1973).

There are not many insects feeding on *P. laurocerasus*. In Britain *P. laurocerasus* was imported in 1576 and now four Lepidoptera and one Hemipteron are associated with this plant (Leather, 1985).

In June 1988 (the year following that of the discovery of the infestation) *Y. evonymellus* was found again but this time the infestation was less dramatic than in the preceding year. The pupae and also the moths found on *P. laurocerasus* in the field were smaller than specimens found on *P. padus* (figs. 1-2), which corresponds with the laboratory tests. This may indicate that *P. laurocerasus* is less suitable as a food plant than *P. padus*.

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I thank Mr. R. Z. de Wolde, member of the Parks Department of the Town Council of Genemuiden for his useful observations. Dr. Sandrine A. Ulenberg (dept. of Entomology, Plant Protection Service, Wageningen) drew my attention to the infestation of *Y. evonymellus* on *P. laurocerasus*.

#### References

- HEGNAUER, R., 1973. *Chemotaxonomie der Pflanzen*, VI. 1-882. Basel, Birkhauser.
- LEATHER, S. R., 1985. Does the bird cherry have its "fair share" of insect pests? An appraisal of the species-area relationships of the phytophagous insects associated with British *Prunus* species. - *Ecol. Entomol.* 10: 43-56.

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