

# TEETH AND LEAF CHARACTERS FOR VEGETATIVE IDENTIFICATION OF WINTERGREENS IN EASTER ROSS

Brian and Barbara Ballinger

All 5 British wintergreen (Pyrolaceae) species have been recorded in E. Ross (VC 106) but two may be locally extinct (*Pyrola rotundifolia* and *Moneses uniflora*), although we are still searching. The remaining three (*Pyrola minor*, *Pyrola media* and *Orthilia secunda*) are still to be seen in various locations in the vice-county, but their frequent reluctance to flower has proved a major problem for us since we took over as recorders 5 years ago. Since 2000 *Pyrola minor* has been recorded in 30 tetrads, *Pyrola media* in 9 and *Orthilia secunda* in 21, with some earlier records in other sites. In our area *P. media* is usually to be found at sites over 200m in altitude whereas *P. minor* tends to be seen at lower altitudes. In the last 2 - 5 years only 4 of the 9 *P. media* populations have shown evidence of flowering and we are grateful to Jane Squirrell for genetic testing of some plants to confirm the species.

We were therefore very interested in the draft vegetative key to the Pyrolas being developed by John Poland and have made a preliminary assessment of this in our area.

We examined 75 leaves from 5 populations each of *P. media* and *P. minor* and 24 leaves from one population of *P. rotundifolia* near Braemar. For comparison we also took 20 leaves from two sites of *Orthilia secunda* and 15 leaves of one population of *Moneses uniflora*.

Counts of leaf teeth from one side of the leaf revealed more than 15 (ie 16 or more) teeth in 91% of *P. minor* leaves, 13% of *P. media* leaves, 92% of *P. rotundifolia* leaves, 85% of *Orthilia secunda* leaves and 0% of *Moneses uniflora* leaves. There was a wide range in teeth numbers in each sample.

Petiole length was compared with the length of the leaf blades. The petiole was as long as or longer than the blade in 1% of *P. minor* leaves, 36% of *P. media*, 58% of *P. rotundifolia* and 0% of both *O. secunda* and *M. uniflora*. The petiole length was over 1.2 cm in 75% of *P. minor* leaves but only 10% of *O. secunda* leaves. *Orthilia secunda* leaves tended to be narrower than those of other species.

Where present the longer styles clearly differentiated *P. media* from *P. minor* and dead heads often persisted for long after flowering.

This has been a useful and memorable exercise, with some assessments being made lying in the snow to measure leaves. We have had to revise several records, including some of our own. An examination of Edinburgh herbarium material broadly confirmed these findings, although there was some suggestion that our one *Pyrola rotundifolia* population may not have been entirely representative of all others.

Our main conclusion is that counting leaf teeth and measuring petiole and leaf blade length can be valuable, but at least 10 leaves should be examined. The majority of *P. minor* and *P. rotundifolia* leaves have more than 15 (16 or more) teeth along one side of the leaf and most *P. media* leaves have 15 or fewer teeth. If petiole length exceeds blade length in a third or more of the sample it is likely to be *P. media* or *P. rotundifolia* and not *P. minor*.

This is a very preliminary study and should be followed up elsewhere.

**Table 1 Vegetative features of Wintergreens**

species	Number of leaves examined	More than 15 teeth (one side)	Petiole as long or longer than blade	Petiole length over 1.2cm
<i>P. minor</i>	75	91%	1%	75%
<i>P. media</i>	75	13%	36%	96%
<i>P. rotundifolia</i>	24	92%	58%	100%
<i>O. secunda</i>	20	85%	0%	10%
<i>M. uniflora</i>	15	0%	0%	0%