WHAT TO LOOK FOR?

A rust fungus on the underside of leaves of Pyrola spp. (“wintergreen”), particularly *P. rotundifolia* ssp. *maritima* and *P. minor*. Orange-yellow pustule-like uredinia (stage II), 0.5-1 mm wide, are most common; or very rarely in GB&I as orange-red telia (stage III). Upper leaf surfaces may have dark spotting corresponding to sori below. Orange-yellow aecia (stage I) on *Picea* cone scales have been reported elsewhere but never in GB&I.

WHEN TO LOOK?

April to August, although *Pyrola* spp. can be perennial hosts. The telial (III) stage is rarely seen but is thought to occur in June.

WHERE TO LOOK?

*P. rotundifolia* ssp. *maritima* can be found in wet calcareous dune slacks and fixed dunes, with *Salix repens*, or in nearby conifer plantations. *P. minor* and *P. rotundifolia* ssp. *rotundifolia* can be found in damp shady wooded areas, scattered throughout GB&I. Investigation of known sites of the hosts should be prioritised.
Chrysomyxa pyrolata

General description

Uredinia distributed evenly on the lower surface of living leaves of Pyrola minor, P. rotundifolia subsp. rotundifolia and maritima, circular, yellow to orange, 0.5-1 mm diameter, surrounded by a torn epidermis and a delicate, quickly disappearing peridium. Uredospores ellipsoid-ovoid, 19.33(-36) x 13-24 μm excluding circular-to-elongate warts 0.4-1 μm thick, hyaline, warts irregularly spaced 1-3.2 μm apart, 0.5-1.8 μm high, 0.5-2 μm wide to 4 μm long. Telia present in summer, also on lower leaf surfaces; prominent, covering whole leaf surface uniformly, flat, waxy, yellow-red, turning to red-brown when dry. Teliospores irregularly cylindric-ellipsoidal, wall smooth, colourless and 1 μm thick or less, 7-10 x 14-26 μm, in columns 100-130 μm long.

Spermogonia on cone scales of Picea spp. (never reported from GB&I!), subepidermal, flat, inconspicuous, 0.5-1 mm wide x 50-100 μm high. Aecia on both surfaces of cone scales, conspicuous, irregularly shaped and confluent to 0.5-1 cm diameter, 1-3 per scale, bullate, convex peridium evanescent, white-yellow, pulvulent. Aeciospores orange, ellipsoidial, 22-37(-46) x 17-35 μm, wall hyaline, 2-4.7 μm thick including crowded, large polygonal-elongate warts 1.5-4.7 μm diam. x 2-8(-10) μm long.

Note: description adapted from Wilson & Henderson (1966).

Habitat

P. rotundifolia subsp. maritima can be found in wet calcareous dune slacks and fixed dunes, with Salix repens, or in nearby conifer plantations. P. minor and P. rotundifolia subsp. rotundifolia can be found in damp shady wooded areas, scattered throughout GB&I. Investigation of known sites of the hosts should be prioritised.

Conservation status

Covered under Sections 41 (England) and 42 (Wales) of the NERC Act (2006). Previously a UK BAP species. In Wales, known only from one site (last record 1971) and unofficially classed as Critically Endangered / D1 (Woods et al., 2015). In England, known from two current sites. Classed as Endangered / B in the current but unofficial “Red Data List of Threatened British Fungi” (Evans et al. 2006).

Associations

Uredinal (II) and telial (II) phases exist on the leaves of Pyrola spp. throughout the year, and the spermogonial (0) and aecial (I) phases exist on the cone scale of spruce (Picea spp.). In GB&I, the species has only been reported on Pyrola, particularly Pyrola minor and Pyrola rotundifolia subsp. maritima.

Look-alikes

The uredinal stage of the rust Pucciniastrum pyroleae also occurs on Pyrola leaves, and can be easily mistaken for C. pyrolata. Distinguishing characteristics include the occurrence of uredinia in poorly-defined clusters (rather than discrete and evenly dispersed), sometimes appearing on the upper leaf surface or petioles; and the lack of a visibly distinct peridium (the initial “covering” of sori), with uredospores emerging from a minute opening in each uredinium.

Known sites in GB&I

Historical sites

- 18XX. Edinburgh (near), Midlothian (VC:83), Scotland. Coll.: anon.. K(M) 116978. Grid ref: NT27.

Current sites


References


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