

A photograph of the plant Chrysomyxa pirolata. The upper portion shows green, rounded leaves with prominent veins, growing from a reddish-brown stem. The lower portion shows the same plant with its leaves turned a deep, textured brown, indicating autumn coloration. The plant is growing in a forest floor covered with dry leaves and pine needles.

*Chrysomyxa pirolata*



## Unusual Sightings



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This spring, as I did my annual scan of an area in my woods that once produced a solitary black morel more than twenty years ago, a flash of electric orange caught my eye. *Caloscypha fulgens*, perhaps? But no, it was the underside of a *Pyrola rotundifolia* leaf. This seemed odd since *P. rotundifolia*, or round-leaved wintergreen, is, as its common name suggests, an evergreen plant. It's not ever supposed to be orange. A closer look revealed that the entire underside of the leaf was covered in minute orange pom-poms, the spore-covered pustules characteristic of various rust fungi. I had found *Chrysomyxa pirolata*, or spruce cone rust, growing on its spring host.

All rust fungi are parasites of plants. Most are very picky about their hosts, and most require hosts that are often only distantly related for different parts of their life cycles. *Chrysomyxa pirolata* has two hosts. Its spring host is *P. rotundifolia*, along with other wintergreens. Though this pathogenetic rust can completely cover the undersides of every leaf in a rosette, it does little harm to the plant. Its second host in late summer—spruce trees—are not so lucky. Though *C. pirolata* only attacks the cones of *Picea* species, affected cones either produce malformed seed that does not germinate well or, more commonly, don't produce any seed at all. *Chrysomyxa pirolata* is as easy to recognize on spruce as it is on wintergreen since the aeciospores it produces between cone scales are a flashy yellow-orange. These spores can sometimes be plentiful enough to cover the forest floor beneath infected trees with a coating of orange dust.

