

LICHEN SERIES - CHAMELEONS and LICHENS

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What possible connection could there be between a Chameleon and a Lichen? Chameleons, those cute small tropical lizards, change their skin colour depending on the color of their background. And yes, some lichens are also capable of changing color. Here is where the resemblance ends, however, Chameleons belong to the reptile family, while the lichens belong to the fungi family.

Some lichens alter their hue when they become moist with rain or dew, and others change to red, yellow or purple as a result of chemical reactions between external applied drops of a reagent and internal chemical components. Such "Chameleon" lichens are: *Parmelia sulcata* (hammered shield lichen)^A turning from ashy gray to light green; *Peltigera leucopohlebia* (ruffled freckle pelt)^B changing from light brown to green, and; *Glypholecia scabra* (bright-eyed lichen [name coined by the author])^C which is bluish white when dry, but becomes pale reddish when wet.

So, let us leave the little lizards alone, and turn to the lichens. The first one would be hammered shield lichen (*Parmelia sulcata*) which is blue gray to ashy gray becoming green when wet, with a loosely attached elongated lobed body having entire or notched

margins and a network of raised ridges and depressions showing whitish dots of fungal hyphae when there are breaks in the upper surface. The lobe margins have round or elongated soralia where cracks develop. The lower side is black with numerous rhizines. Apothecia are rare, having flat brownish discs. This lichen often acts as a pioneer species in urban parks. Its substratum is coniferous or deciduous tree bark or branches, often with boreal oak moss (*Evernia mesomorpha*^D) and monk's-hood lichen (*Hypogymnia physodes*^E). Another colour change, this time to red, occurs when a drop of potassium hydroxide (KOH) is applied to the upper surface as an aid to identification. The specific name *sulcata* comes from the Latin *sulcus*, meaning grooves or furrows referring to the raised network of ridges and depressions.

The next one is ruffled freckle pelt (*Peltigera leucopohlebia*) which is gray to brownish when dry, becoming darker brown when exposed to more sunlight and turns grass-green when wet. The lobes are rather broad and loosely attached with upturned waved or ruffled margins. Lower surface is white with dark brown veins and with tufted, unbranched rhizines. Scattered warts on the upper surface contain blue

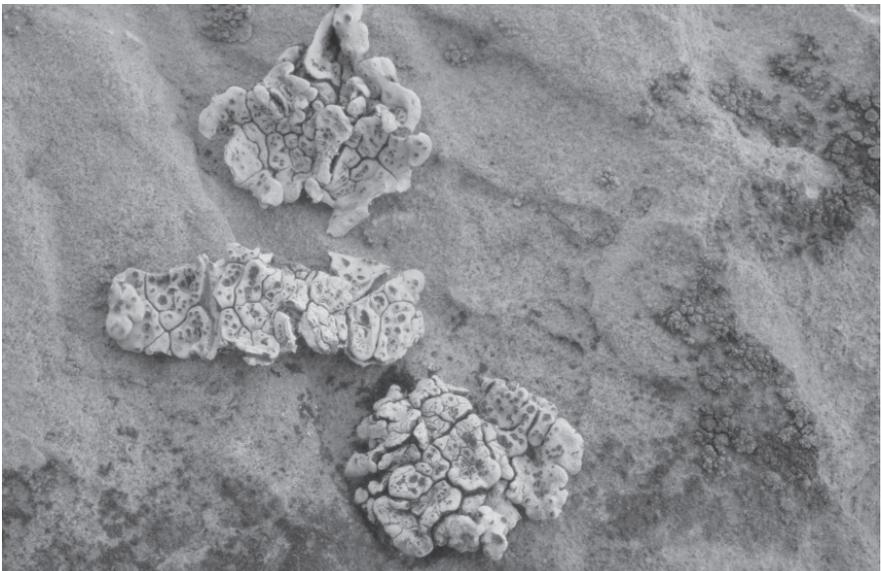
green algae (cyanobacteria) which are able to fix atmospheric nitrogen. The fruiting bodies have discontinuous patches of cortex on their upper surface.

A third lichen who changes colour when wet is bright-eyed lichen (*Glypholecia scabra*)^F, turning pale red from a chalky or bluish white. The thallus is foliose with a broad attachment, and broadly rounded lobes, ascending, concave or slightly convex, margins are rolled under. The central thallus appears more or less areolate but are attached to each other. The underside is off white. Fruiting bodies are numerous, immersed and at first single and small, but upon maturity become compounded in groups with a fuzzy covering between. Fruiting discs are bare, red-brown or dark brown. This lichen also turns red by spot

testing with Sodium hypochlorite (NaClO - liquid bleach). This lichen grows on limestone and occurs in Saskatchewan only in one small isolated location with another rare lichen *Rhizoplaca peltata* (brown rock posy) and due to this isolation and so far the only records for Saskatchewan, are vulnerable to extirpation. The area is presently under negotiation to be designated a preserve not only for the protection of these two lichens, but also of its unique landscape and other interesting vascular plants, lichens and mosses.

The next and last issue in the lichen series is: Lichens of our Grasslands.

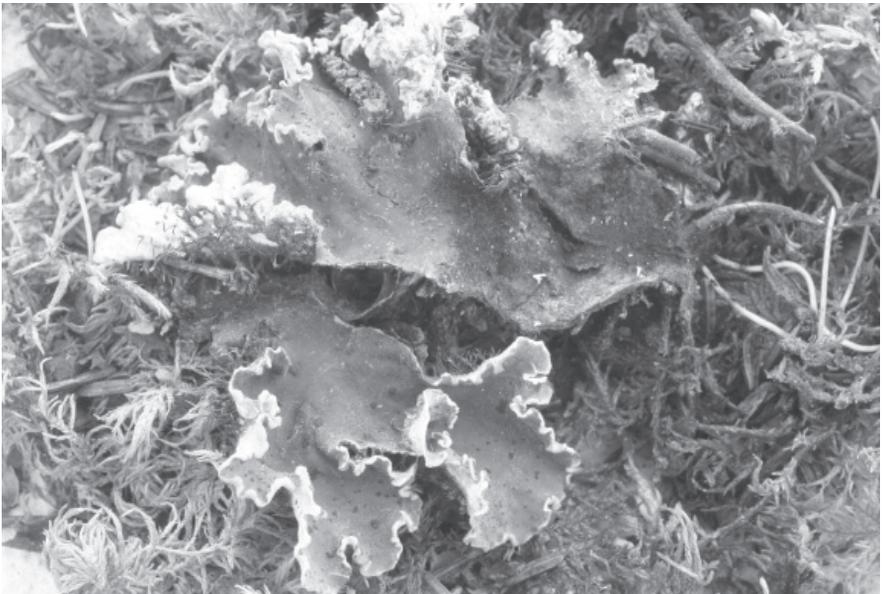
For comments or suggestions on the series, please contact bdevries@accesscomm.ca



Glypholechia scabra - bright-eyed lichen



Parmelia sulcata - *hammered shield lichen*



Peltigera leucophlebia - *ruffled freckle pelt*

