

often, but the recognition of its calls is not a common skill of most birders.

Oh yes. Sue Yardley's rail was frozen and delivered to the Museum at Victoria. A significant contribution.

----- H.K. Campbell 6 May '83

NOTES ON THE LICHENS OF SALTSRING ISLAND

by C.D. Bird

Lichens are unique composite plants that are unions of fungal and algal species that form plant bodies that are different in appearance from that of either partner. They lack the leaves and green color of mosses and higher plants and are usually gray in color though they can also be orange, yellow, brown or black. Perhaps the most conspicuous lichens (fruticose) are hairlike and branched and hang from trees or grow on soil or rocks. Others (foliose) are flat, somewhat leaflike, and are loosely attached. Still others (crustose) are crustlike and firmly attached to rocks, trees or soil.

Lichen species are usually restricted to particular substrates and microclimates, eg. ground species are rarely on rocks or trees; deciduous trees have different species from conifers; those on smooth bark rarely occur on rough bark; acid rocks have different species from basic rocks; and rocks subject to manuring by birds have unique species. A notable lichen of restricted habitat is Verrucaria maura, the crustose species that forms the black line at high tide level or coastal rocks.

A paper by the writer and his father (Syesis 6: 57-80, 1973) reported 199 lichens to occur on Saltspring Island. Most (103) of these were found on trees or shrubs, 75 were on rocks, 40 on soil, 17 on old wood, and a few were found on unusual habitats like old clam shells, Selaginella wallacei and moss.

Most of the species on the Island are widespread but others are limited to low elevations near the ocean while still others occur only at high elevations. Fourteen percent of the species reported for the Island were new to the Province and one was new to North America. Lichens of the Gulf Islands have been poorly studied and many additional finds will be reported by future workers such as Willa Noble.

Those wishing to delve into the fascinating world of lichens should obtain a copy of the illustrated key "How to know the lichens" by Mason Hale (Jaques, Dubuque, Iowa). It is the best semipopular book available at the present time. A field guide of the lichens of the Province is planned by the B.C. Provincial Museum.

(Editor's Note: Dr. Bird, until a few years ago, was a member of the Biology Department, University of Calgary, Alberta.)

### BALANCE IN NATURE

When we walk along most of the beaches on Salt Spring Island we can see nature working the way it is supposed to, nicely in balance, with a mixture of mussels, snails, barnacles and starfish and many other animals all living together, with no one species getting more than their share of the goodies. But once in a while we see a beach, where for instance, the starfish have been removed, then we find that the mussels have been able to take over almost all the available living space, this is because the mussels are the favorite food of the starfish, and without them the mussels edge the other species out. This is because the starfish, is a predator that keeps the species in check and so keeps the balance of nature.

One of the best known examples of what happens when the balance of nature is disturbed, is the Black Plague of the Middle Ages. Because the people believed in witchcraft they killed most of the cats because they thought that cats lived with the witches. The rats took advantage of the lack of predators and multiplied along with their parasites the fleas, it was the fleas that carried the Plague.

On the Galapagos Islands, goats brought there to supply the ships with fresh meat, have multiplied and taken over the grazing areas so that the indigenous animals of the islands have been decimated through lack of grazing areas, especially the giant tortoise. The government of Equador is trying to protect the tortoise and rid the islands of the goats, but it is a long process.

In Southern California the giant kelp beds were declining rapidly. The kelp is important because it serves the same purpose as forests do on land, it forms a habitat for a balanced variety of animals; it is also important commercially. It was discovered that a rapid population explosion of sea urchins was the cause, the kelp being their favorite food. Where there were great numbers of urchins, there were also vast bare patches of rock, the urchins apparently still surviving on sewage from the cities and algae on the rocks. The sea otter which at one time was nearly extinct is now protected and making a comeback and their food is sea urchin which they eat by breaking them open on a rock they hold on their chest. The balance is slowly recovering as the otters make inroads on the urchins.

----- Pearl MacAllister.

### RED SQUIRREL - *Tamiasciurus hudsonicus lanuginosus* (Bachman)

People who walk in the woods of Saltspring have reported seeing small piles of broken-up fir cones and have been curious about them. These piles may well be the debris of a red squirrel's lunch. It is a habit of this energetic tree squirrel to gather cones and strip off the scales in order to feast on the seeds. The result is a fairly neat stack of nipped off scales; called a squirrel midden.