

## **“Lichens” by Sally Cureton**

One of the more interesting sights in the forest landscape in the wintertime is provided by color and texture of the lichens. They can be seen on tree trunks and in our area are especially plentiful on exposed rock surfaces. One of nature's most unusual organisms, lichens are flowerless plants that consist of two plants living together in a symbiotic relationship as a single unit. By living together in this way, both are more successful than they would be if living on their own. Although this relationship has been studied by many people, but it is still not fully understood.

The first of the two plants is algae, which can make its own food, but needs water to grow. The second is fungus which absorbs water rapidly but cannot make its own food. Lichens have no leaves, roots or stems. The fungus normally forms the outer surface of green, brown, yellow or gray. It provides protection to the algae on the inside which will be green or blue-green. With this fairly stable and constant environment to live in, the algae have enhanced growing circumstances. With no roots, lichens can grow only when moistened by dew or rain. The moist lichen then absorbs sunlight and using the same process as a tree leaf, photosynthesis, it produces food. This food, in the form of sugars, then passes to the algae and the entire plant grows. Dry lichens are unable to grow, but will survive extreme temperatures in that form.

Lichens first appeared about 400 million years ago. They have evolved continually over that time so that now there are about 18,000 species in the world. Lichens have been used by humans in many ways for more than 2,000 years. They have particularly been used by many civilizations for their medicinal qualities. In many countries, antibiotics made from fungus have replaced those traditionally used which were made from lichens. They have also been used in Mediterranean countries for red and purple dyes, and are still used in the perfume industry as well as by florists as packaging materials.

One of their more important uses even today is as an indicator of pollution. Lichens are very sensitive to air quality, some living only in the purist of atmospheres. Many ecologists use them to monitor the quality of the air in a given place. And because they store minerals in their cells, they can also be used as an indicator of the mineral content of the rocks where they have been growing. It is worth your while to walk around some day and take a close look at lichen. They contain not only a lot of color but beautiful patterns. Often they have intricate shapes and three dimensional forms. Some look like patterned filigree and others like fine lace work.