



FOUNDED BY  
JAN AND HERB CONN

## NEWS OF THE P.A.T.C. MOUNTAINEERING SECTION

1718 N Street, N.W. Washington DC 20036

Vol. 40

April 1986

No. 4

### Lichens: A Climber's Eye View By Selma Hanel

I began to collect lichens before I began to climb rocks, but not until I spent many sunny days on cliffs and belay ledges did I begin to notice the favorite habitat of individual species. Usually without going off route it is possible to make a preliminary identification--for example, is that brown foliose lichen tan underneath or the much more uncommon jet black? And, I must admit, I have wondered why lichens must obscure the essential nubbins needed to climb. Though some may find them a nuisance, they are not as startling as pigeons, and in their unobtrusive nature have many intriguing qualities which I thought might interest other climbers who have also noticed them.

Lichens grow on rocks, trees and soil. They have been found growing on weevils and Galapagos turtles. They are pea green, bright red or just grey. After a rain they become brilliant in color. Many species had already been

described by 1867 when the Swiss botanist Simon Schwedener discovered the apparent symbiosis between algae and the fungi. Since then, lichenologists and lichen lovers, including Beatrix Potter, have studied them. (Because it was not permitted for women to be scientists at that time, she devoted her life to managing a farm and to writing children's books.)

Lichens are cryptograms, lower plants including algae, fungi and mosses. They are composed of green algae or cyanobacteria and fungal threads primarily from the sac fungi (Ascomycetes). Technically, they are fungi, although it is the fungus which is a controlled parasite of the alga. The alga found in lichens can grow independently of the fungus; the fungus has not yet been found to exist by itself. The symbiotic relationship is unusual in that the plant form, called the thallus, resembles neither algae nor fungi. Instead, it can be recognized as being one of three major types: foliose, fruticose or crustose.

**PATC. MOUNTAINEERING SECTION**

Chairman: Stuart Pregnall 202/338-6140  
Vice Chairman: Pete Grant 703/960-6033  
Secretary: Selma Hanel  
Treasurer: Karen Rousell 202/338-6140

Training & Safety: John Teasdale 301/262-9128  
Climbing: Stuart Pregnall 202/338-6140  
Expeditions: Ed Cummings 301/933-1457  
Prog. & Entertain.: Paul Torelli 301/299-8039  
Memb. & Hospitality: Joe Wagner 202/966-6379  
Conservation: Charlie Dorian 301-946-2373  
Publicity: Rich Cunningham  
Nelson House: Nori Gessler 703/524-2068  
Carderock Conserv.: Janet Young 202/966-9091

**UP ROPE**

Nori Gessler, Editor 703/524-2068

Up Rope is published monthly, except during August, by and for members of the Mountaineering Section of the Potomac Appalachian Trail Club of Washington, D.C. Editorial contributions are welcome and should be sent to: Editor, Up Rope, Mountaineering Section, PATC, 1718 N Street, N.W., Washington, D.C. 20036 before the 20th of each month.

Foliose lichens typically have lobes, are circular in outline, and are attached by rhizines--strands of fungal hyphae--to bark or rocks. Included in this group are the Rock Tripes (Umbilicaria), the papery lichens found on acidic rocks. They depend on air for moisture and are attached to the rock by a single thread in the center. Nutrients are derived from the photosynthetic algae.

Fruticose lichens are like tufts of bushy hair, growing in strands, which are attached only at the base. Reindeer "moss" is an example of a fruticose lichen. In terms of evolution, they are the most developed, preceded by the foliose and the most primitive crustose ones.

The crustose lichens are one of the first to colonize an area. They are tightly surface bound and can etch 6 - 8 mm into the rock, contributing significantly to erosion. Although very common, these lichens are difficult to collect because of the impossibility of freeing a large specimen from the rock in one piece. They are incompletely studied and only the most

common ones are included in identification keys.

The snakes and caterpillars not repulsed by the highly acidic lichens are the major predators in temperate climates. In the subarctic regions reindeer and caribou feed on them as well. Lichens can be used by humans for food as they contain carbohydrates, with some protein, fat and vitamin C. The principle constituent, though, is the undigestible cellulose lichenin. Some are poisonous, as for example the vulpinic acid-containing wolf lichen, which was used at one time for poisoning wolves.

Although they are very hardy, lichens have been used as indicators of pollution in cities and outlying suburbs. They are sensitive to sulfur and ozonated hydrocarbons, some species being more tolerant than others. Other uses for lichens have been in making litmus paper and orcein (a histological stain) as well as in the dye industry. The aromatic substances also have been found to blend well in perfume making where they serve as a fixative. These processes are no longer used industrially as large lichen quantities are required and lichens grow slowly.

Indeed, lichens have been affectionately thought to be more than perennial. On cliffs where humus cannot collect to allow mosses and higher plants to grow, and where tree shade cannot change the environment, lichens have been shown to be very old. A few colonies are about 2000 years old. The average growth rate is 1-10mm a year. They also grow in extreme environments, from

the hot desert rock to the ice arctic glaciers.

Most of the characteristics used for identification can be determined with a hand lens. Descriptive features include color on both the upper and lower surfae, absence or presence of rhizines and pores, and the type of vegetative propagule: either minute fingerlike appendages (isidia) or appendages releasing powdery spores (soredia).

Perhaps the most intriguing to lichenologists and biochemists is the difficulty in getting lichens to grow in the lab. In order for an algae colony and a fungal one to be interdependent both must first be starved. But even then no successful colonies have been grown. Thus many interesting processes, such as their reproduction and their requirements for growth, remain to be completely understood.

In conclusion, then, while you climb, you might remember the following adaptation of Beatrix Potter's verse:

Ten blind toes, ten blind toes,

See how they climb!

They all smear into lichens, the ones foliose,  
And they cut the lobes with their rubber soles,

Did you ever see such a thing so sublime

As ten blind toes!

---

---

## AT BASE CAMP

---

---

### March Section Meeting

After bringing the meeting to order, Stuart Pregnall introduced Andy Kauffman who had three points to make. First, he highly recommended E.R. LaChapelle's ABC's of Avalanche Safety he was asked to review for Up Rope to all doing any skiing or mountaineering in snow. In fact, he considered it a must to read and to study. Second, the well-known mountaineer, Kim Momb, was killed in an avalanche in British Columbia in early February. Liability encompassed the remainder of his news to those present. In the last few weeks it has become apparent that the availability of insurance for "high Risk" sports such as climbing is almost impossible to obtain. This could affect summer activities in National Parks and Forests where it is necessary for concessionaires, instructors and guides to have liability insurance. Rescue efforts may also be affected. On the bright side, in a recent case in California, a release form signed by an individual was honored by a jury, but every state will have to define its own position on this subject. The American Alpine Club is acting as a leader to coordinate efforts towards a solution. Jim McCarthy, President of the American Alpine Club will be in Las Vegas on 17 March to discuss this issue at a trade fair. A similar meeting will also be held here in Washington on 17 March. Andy Kauffman will

attempt to be present representing the American Alpine Club. A motion was passed that he also represent the Mountaineering Section, and appreciation was expressed for his continued effort and for the time he has spent on this issue.

At the Executive Committee Meeting on 8 March, held at Stuart Pregnall's, the major discussion focussed on the club's immediate position regarding liability. A committee of Tom Isaacson, Ed Cummings and Jeannete Helfrich are working on a written set of guidelines outlining Sunday outings as well as longer trips to lead climbing areas. At the general meeting, Stuart informed members and guests present of the current coverage by PATC insurance. Only if an individual were a member of PATC, and not just a member of the Mountaineering Section, would they be covered under PATC's policy. Pregnall recommended that trip leaders may want to consider joining PATC. Vice Chairman Pete Grant was asked to coordinate the liability issue with John Teesdale, the Section's Training and Safety Committee chairman.

Events to look forward to: April 1 slideshow and lecture on ski mountaineering by John Harlin. On April 16 from 6:00 to 7:30 the President's Commission on the Outdoors will meet with PATC and Section members. The Bull Run easement is steadily nearing final stages, and a bash will be given late April or early May. This is the "Year of the Roof" at the Nelson House. Another summer task, when the water level is low, will be to place stones on the embankment by Carderock to complete the conservation project. Pete Grant made updated climbing

schedules available which now include Saturday trips, as requested by many members.

Finally, an excellent slide presentation by Ms. Lila Bishop concluded the meeting. Ms. Bishop's slides of trekking in the Kashmir section of India's Himalaya in whetted many appetites to visit the area.

The meeting adjourned to the DuPont Villa.

--Selma Hanel, Secretary

---

#### REVIEWS

#### HARDWARE/SOFTWARE

---

**The ABC of Avalanche Safety**  
Second edition, Edward LaChappelle, 1985. The Mountaineers, Seattle. 110pp. Paper edition \$3.95.

Reviewed by Andy Kauffman

Here is the second edition, completely revised, of a book that should be required reading for anyone who engages in mountain activity where there is snow, notably, ski-mountaineering. Indeed, more emphasis is needed: the book should not just be read; rather, it should be studied with care.

Not only is Edward R. LaChappelle an expert on avalanche conditions, but he also knows how to write about them. More important for the reader, he has a great deal to teach both useful and, in the pinch, life saving. His little volume is short, terse--it weighs almost nothing and

will fit easily in the flap of your rucksack for consultation in the field. But as LaChappelle indicates in another context, by the time there is urgent need for reference, it is probably already too late. The intelligent thing is to do your homework well ahead of time.

LaChappelle has compressed years of experience into a superb text where every word counts. The result does not make for easy reading, but because it forces the audience to think, it represents one of the best forms of prose writing. The style may in some respects be compared with that of the late, great American jurist, Roscoe Pound in his short volume entitled Common Law. How easy seems the first reading, how totally bewildering the third, fourth and fifth; and then about the tenth time around you finally figure out what the author is driving at and everything falls into place and becomes perfectly clear. LaChappelle does not quite have Pound's ability to condense ideas, but there are moments when he comes close.

In the course of almost two generations in the mountains, I have had my share of experience on ice and snow; and yet I confess LaChappelle's book taught me things I should have known decades ago. Two of the most frightening events of my climbing career, back when I was still a novice, were a fall into a crevasse and a brief encounter with a small but memorable avalanche. Never once did I search for a repeat performance. And although in later years I had several close calls, good fortune, wariness, or both, somehow prevented any full-scale repetition. Accidents teach caution--we either avoid the compounding of identical errors, or we are doomed. Better, however, is to have no accidents at all; and LaChappelle's teachings on how to avoid the risks of avalanches and what to do if caught are what make this book so valuable. The best thing, of course, would be to enlist LaChappelle personally as a climbing or skiing companion; but, failing that, his book, combined with advice from local people familiar with the region to be visited are at least worthy substitutes.



## CLIMBER'S CALENDAR

For program information, call PATC tape (202/638-5306) during daytime; for trips call the leader or Tom Russell (301/869-8058). Day trips to top rope or short multipitch climbs require no partner. Weekend trips (identified with an asterisk\*) are to lead climbing areas. Please arrange for your own climbing partner(s) in advance.

09 Apr Monthly Section Meeting, PATC HQ, 8pm  
Tony Rickert, Climbing in the Tetons

13 Apr Little Stony Man, VA Gary Beil 301/776-0191  
19-20 Apr #Stone Mountain, NC Pete Grant 703/960-6033  
20 Apr Sugarloaf, MD Barb Llewellyn 301/871-6197  
26 Apr Buzzard Rocks, VA Pete Grant 703/960-6033  
27 Apr Crescent Rock, VA \*

3-4 May @Lead Climbing Training Course  
John Teasdale 301/262-9128  
04 May Annapolis Rocks, MD Claire Witt 202/530-6806  
07 May Executive Committee Meeting  
10-11 May Hermitage, PA Tom Russell 301/869-8058

14 May Monthly Section Meeting, PATC HQ, 8pm  
Bob Wells, Ice Climbing in the Cascades

17 May Sugarloaf \*  
18 May Little Stony Man, VA Joe Wagner 202/966-6379  
24-26 May #Shawangunks, NY Stuart Pagnall 202/338-6140  
31 May Old Rag, VA \*

@Advanced climbing instruction at Shawangunks, NY. Group size is limited so call the chief instructor early to make arrangements.

*Up Rope*

1718 N St NW  
Washington, D. C. 20036

ADDRESS CORRECTION REQUESTED

