IOCA BULLETIN

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Association

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The IOCA Bulletin is published three times a year by the members of the Wilson College Outing Club and is printed by Bruce Bannerman.

Editor: Mary K. Dolack

IOCA PATCH REQUIREMENTS

1. Attend three IOCA trips. These three trips must be of various types, e.g. a square dance weekend, a caving trip, and a climbing trip. An IOCA trip is any trip in which at least three IOCA clubs are represented.
2. All three trips must be attended within the space of two semesters.
3. At least one of the three trips must be an IOCA traditional, e.g. Spring IOCAving or Spring IOConference.
4. Be a member of an IOCA club.

A CLOUDED LOOK AT WEATHER

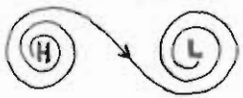
by Blake Bacon (IOCAlum)

"How the hell should I know?" Gardner Perry III at '66 College Week

You get up in the morning and look at the sky. Someone wonders aloud what the weather will be. You may remain silent from ignorance or you may remain silent from wisdom.

Weather is a complex subject; it takes a fantastic amount of data to give an accurate, detailed forecast. Even the weather bureau with its satellites and complex equipment churns out many false predictions. There is an old story that, at MIT, a computer was loaded with tables of numbers and programmed to select at random one number from each table and associate the resulting number set with a date. Each table corresponded to a weather condition: temperature; precipitation; etc. These sets were then decoded and compared with both the weather bureau's forecasts and the actual weather for those dates. Despite such computer-generated predictions as holwing blizzards in July, the computer was 18% more accurate than the Boston weather bureau.

But, to begin. Air tends to move in batches called high pressure areas. These differ in temperature (depending on whether they formed over polar areas or tropical areas), in humidity (depending on whether they formed over land or water), and in stability (more on this later). These air masses are called "warm" if they are warmer than the land over which they pass and "cold" if they are colder. Air tries to flow in a straight line from a high pressure area to a low pressure area, but the turning of the earth produces a spiraling of the flow.



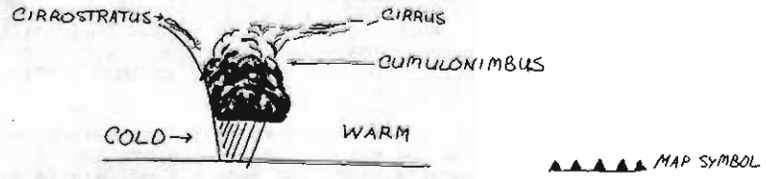
Cold air is denser than warm air and can hold less moisture. Air expands and cools when it is forced to rise. The rate of change is about 3°C/1000 feet for air unsaturated with moisture, 2.8°C for saturated cold air, 1.1°C for saturated warm air. The normal change in air temperature is about 2°C/1000 feet. Let's take a batch of air and raise it. If, at the end of our movement, it is colder (and denser) than the surrounding air and tries to sink back home, it is stable; if it is warmer (and lighter) and tries to keep on rising, it is unstable. Here are some of the weather conditions associated with stability or lack of it:

AIR TYPE	VISIBILITY	CLOUD TYPE	PRECIPITATION
dry, stable	poor; hazy	none	none
moist, stable	poor: haze and fog	stratus	steady
dry, unstable	good	none	none
moist, unstable	good except during precipitation	cumulus	showers

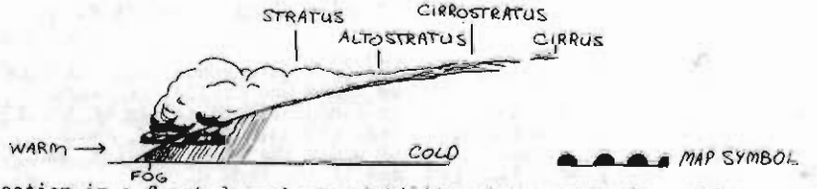
Forces causing a pocket of air to rise within an air mass include: updrafts cuased by solar heating of the ground; the rising of air masses as they travel over mountains; and new air masses which can wedge in beneath original air masses. (If conditions are right, this

lifting of air pockets can give rise to a thunderstorm, which is why we see thunderstorms during the summer as a product of updrafts or in the mountains.)

Cold air masses, when warmed by the ground, are inflicted with updrafts which mix things up nicely and permit good visibility. In a warm air mass, just the layer near the ground is cooled and an inversion forms. This causes dust and man-made crud to be trapped at low altitude - shades of Los Angeles smog. When a cold air mass meets a warm air mass, it pushes underneath, lifting and cooling the warm, moist air. The result is a narrow, violent band of weather called a cold front. Cold fronts average 50 miles wide and can travel as fast as 60 miles an hour. Note that the "warm" air can be a cold air mass if the air behind is colder.

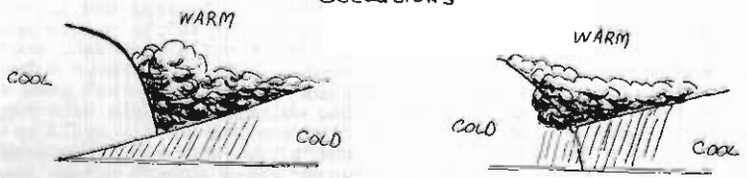


A warm air mass shoving at a colder air mass climbs on top. It literally has to peel the colder air from the surface. As a result it advances slowly, averaging 15-20 mph, accompanied by a broad band of foul weather; clouds preceed it by as much as 1000 miles. Warm front weather tends to be soup and drizzle, but it can include thunderstorms.



The action in a front depends on stability of the warm air. Moist, stable air produces stratus clouds and moderate rain or snow. Moist, unstable air produces cumulus clouds, thunderbumpers, and moderate or heavy showers. Occasionally a front just runs out of steam and sits there, stationary. Weather associated with this sort of front tends to be like warm front weather and frequently more so. I once sat four days under one that stretched from Salt Lake City to Bermuda. You couldn't see 100 yards. Fronts usually occur in sets, with the warm front in the lead. Since the cold front tends to move faster, as the system matures, it catches up with the warm front, forming an occlusion. What happens then depends on relative air temperature - the following air may shove underneath or climb on top - but pure garbage weather is a sure thing.

OCCLUSIONS



You can recognize fronts by the clouds. A solid deck covering the sky means warm front; a wall in the distance means cold front. Passage of a front gives a wind shirt, end of precipitation, and a temperature change.

Let's talk clouds a moment. There are three main types of clouds: cirrus; cumulus; and stratus. Various prefixes and suffixes added to these names describe other cloud types. Cirrus ("curl"): These are ice clouds, found above 20,000 feet. Wisps can be seen in good weather,

but a solid deck (cirrostratus), putting a halo around the sun or moon, means a warm front is 200 or 300 miles away. Occasionally these follow a cold front. Stratus: These from a flat-bottomed layer, a solid deck. They look like fog, but do not touch the ground, at least not at sea level; mountain tops are something else. They usually signal an inversion, that is, the air is warmer at that altitude than it should be, judging from the surface temperature. This probably indicates a warm front is approaching. Cumulus ("heap"): These are fluffy, cauliflower-like clouds. The bottoms tend to be at the same altitude; here an updraft, cooling until it couldn't hold all its moisture, released some as droplets. Nimbus : this suffix (the prefix is nimbo-) means rain. Cumulonimbus may rise to 60,000 feet and show the characteristic thunderhead shape. Nimbostratus may be 15,000 feet thick and average a 3,000 foot ceiling. They usually produce rain or snow within four to five hours of their formation. Alto- , another perfix, means high, that is, 7000 to 20,000 feet.

Let's take a look at simple consequences. Take a warm, sunny summer day. The sun warms the air and causes evaporation to occur from water surfaces. Updrafts start and soon a cumulus sits over each updraft where the air cooled until it couldn't hold its water. The cumulus grows. Moister air, a strong updraft, or an intrusive mountain initiate freezing of this high-altitude water, feeding energy back into the air and causing it to rise more. About this time you're taking cover from the downpour and are watching the fireworks display. If the aerial mixing was rapid and energetic enough, you're looking for a hole as that growling, cloudy cylinder walks along pulverizing trees.

On a clear night, your body radiates heat into space and gets none back. The surface of your sleeping bag cools and chills the nearby air; get it cold enough and the moisture condenses out as dew or frost - on you. Anything above you such as trees, clouds, or a roof, reduces or prevents this condensation. Sleeping under the stars is nice, but tends to dampen your gear. Will you need it tomorrow night?

There are old mariners' rules which are fairly accurate. Here's a summary:

SKY	TIME	MEANING
red tint	sunset	fine weather
harsh, brilliant colors	sunset	rain
intense yellow tint	sunset	wind
pale yellow tint	sunset	rain
red tint	sunrise	wind and rain
high dawn (sunrise over a cloud bank)		wind
low dawn (sunrise on the horizon)		fine weather
exceptional visibility		wind and rain

CLOUDS	MEANING
sharply defined	wind
soft, ragged scud	rain
increasing cloudiness	bad weather
small, soft, high, white	fine weather
high clouds moving in a different direction from surface wind	shift toward direction of upper cloud (use this one with caution in the mountains)

Hints to you - and good luck!

BACK IN THE WINTER OF '72

by Ellis Lader (NYUOC)

Waal, some feller asked me to write a little story about our Surprise Lake trip, so while I'm lying here in bed recovering, I reckon since I ain't got nothing else to do I might as well tell you what went on that there weekend. When I arrived up thar it was already so dark I couldn't see past my whiskers, but after wandering around for a bit I found the leader's cabin, where preparations for supper were in progress. Now I ain't no real old-fashioned feller, but it did my tired old eyes a heap of good to see three young maids a-hacking away at a pile of chickens with some rusty ol' pocketknives like some real-life pioneer women, and a-rattling pots and pans like that's all they ever did since they were born. Those girls did get a mite touchy about making my bed and carrying my pack on the hikes, but I can't really blame them, I suppose, what with Women's Lib and all.

Waal, they finally served supper, and it wasn't bad, although it reminded me a bit of the meals I ate out in the Yukon , back in the winter of '47 -- though you were just little kids then, yeah. The spaghetti was pretty good, and I did save a few strands to use in case my shoelaces broke on the hike. Supper was a jolly meal, what with folks a-throwing buckets of water around the place while we ate, and I reckon Mike Russo looked a little pail when one landed on his head.

By 2 AM, after some hours of carousing, I moseyed on back to my cabin intending to catch a bit of shut-eye, so I crawled into my sleeping bag and I shut my eyes, but strangely enough, nothing happened. I jest couldn't fall asleep, and I suspect it was partly because of them fellers chopping wood in the back of the room, and those folks tip-toeing back and forth in front of my bunk with their hobnailed hiking boots, and that varmint in the bunk over me with hiccups. Anyhow, I lay there sleepless, a-tossing and a-turning, and a-gritting my teeth, until it started getting light, whereupon I gave up trying and got out of bed, and me and a few other fellers hiked to the the top of Breakneck Ridge to see the sunrise, which was a fine sight, and reminded me of the Klondike, back in the winter of '85 -- though you were just little kids then, yeah. That climb up Breakneck Ridge was a real hum-dinger of a mountain climb, although I'm not saying that I've never seen anything steeper, but goin' up that ridge, a feller could stand up straight and bite the ground, and goin' down, a feller wants hobnails in the seat of his pants

We got back to the cabin in time for breakfast, which consisted of carboniferous flapjacks, and some of us did have a bit of trouble finding the kitchen because of the clouds of smoke pouring out of there, and it kinda reminded me of the time the boys poured fuel oil onto my frying pan instead of butter, back in the Northwest Territories, during the winter of '07 -- but you were just little kids then, yeah. We took some more hikes after breakfast, then caught up on some sleep, and had a squaredance in the evening. Following the squaredance we held a song fest that lasted into the wee hours of the morning, but we did get some sleep that night. The next morning was mostly cleanup, but a few hikes did go out, and the hikers camb back wetter than soaked hens because it had started to rain, and it served them right for sneaking out on the cleanup. Anyway, when I got back home I sorta dozed off for a few days, and felt fine after that. I reckon if I ever catch up on my sleep I might even show up at Surprise Lake next winter.

THE ROLE OF MAN IN THE WILDERNESS

adopted from a paper by
Dr. Thomas O. Perry, Advisor
North Carolina State Outing Club

Increased pollution, ugliness, taxes, bureaucracy, and regimentation are the prices man pays for living in an urbanized society. Growing numbers of urbanites who have sufficient funds and youthful stamina seek to escape briefly from the urban jungle by going to the widlerness where the vistas are vast and the foliage is not browned by smog. Many of us who are too feeble or too poor to escape are heartened by the knowledge that wilderness exists AND that some of our children or friends may someday enjoy the beauty of nature which is unspoiled by man. Wilderness has suddenly become a precious commodity and a surprising number of very poor and very humble people are joining with the affluent suburbanites and the very rich in an effort to set aside and preserve as much of the wilderness as possible.

The urge to set aside and preserve the wilderness is commendable. However, the creation of wise laws and policies for conserving our wilderness resource is dependent upon knowledge of how natural forces of fires, windstorms, insects, and disease interact with man-made forces.

In this article I will demonstrate that man is part of nature, that there is no wilderness which does not show the marks of man, that not all the marks of man are ugly, and that there is no way for man to avoid making an impression upon the wilderness resource. Finally, the problem of developing a conservation ethic will be discussed in terms of man's historic and unavoidable role in nature.

Writers of historic fiction are abetted by the movie industry in giving the impression that the eastern United States was an unbroken wilderness of forest with a soil covered by thick humus. We are told that our courageous ancestors hewed and chopped and burned mightily in the wilderness to create a new nation of farms while the Indians supposedly lived at harmony with nature and left no mark upon it. Destruction of the wilderness and erosion of the thick humus that supposedly covered the soil is credited to the callous attitiues of Caucasiasn who espouse the Judeo-Christian etnic. Careful examination of the chronicles of early explorers and settlers reveals that this self-incrimination is not justified. DeSoto embarked from Florida in 1539 with an army of over 300 men and 500 horses to search for gold and treasures in the southeastern United States. Diaries kept by members of this expedition describe riding all day through cornfields and clearings. They rode through many towns which were surrounded by walls constructed of woven branches and daubed with mud. One writer reports that on June 2, 1540 the expedition rode through six villages and slept in the open country. In one village, DeSoto found iron axes and glass beads which were from the unsuccessful Spanish colony of Allyon on the coast of South Carolina. Allyon's colony was established in 1526, 30 years before the founding of St. Augustine and 81 years before the first successful English settlement was created.

The Indians who taught our pilgrim fathers to put a fish under each corn hill had been burning the forest to drive game and clear land for 10,000 years before the coming of the white man. Radiocarbon dates indicate that one grain storage pit near Swannonoah, North Carolina was used for more than 1,200 years. The pre-1600 population of Indians in the eastern United States was probably not over 2 million - about 2 people per square mile. The Indians lacked fertilizer and hence their agricultural practices involved regular clearing of new land as nutrients and erosion exhausted older farms. They used fire to drive game and the forests were deliberately burned each year; sometimes twice a year. Therefore the impact of the

seemingly small Indian population upon the wilderness was very large.

The beautiful vistas and fields of rhododendron of the southern Appalachians were first the creations of fires set by Indian hunters and farmers and were maintained with the fires and cattle of the white settlers until World War II. Sharp-eyed observers can often detect evidence of rude cabins, chimneys and campfire sites near the springs that are normally associated with these clearings. From the rich bottomland to the highest ridge tops, man has shaped the wilderness of the Appalachians and of the world.

Fire, windstorm, insects and old age are forces of nature which combine with man-made forces to shape wilderness. Let us examine some of these interactions.

All evidence indicates that both man and fire are part of nature and that deliberate setting of forest fires was a valuable tool of primitive man. Fires were set in conjunction with hunting expeditions, to clear new land, to keep trails open. Annual burning kept fuel levels low and functioned as cheap insurance against disastrous fires which would otherwise consume both forests and villages.

While man starts 90% of the forest fires in the nation today, lightning is also a major cause of fire. In the Rocky Mountain and Pacific states there were 85,587 fires between 1963 and 1967. 39,913 of these, or 47%, were caused by lightning. Fire scars and ring counts permit precise dating of western fires for more than 300 years before Columbus discovered America. During this pre-Columbian period the longest interval between fire scars was 13 years. If man does not burn the woods, nature will.

Modern society needs the wood and other products of the forest and promiscuous fires can destroy young seedlings and produce barren ugliness that requires 50 years or more to heal. One of the major efforts of civilized man is to reduce the incidence of uncontrolled fires in the wilderness. However, there is increasing evidence that we may be doing too good a job of fire prevention. Wilderness without fires is unnatural and when abnormal levels of fuel accumulate, the wild fires that ensue are disastrous. During the past few years fires have invaded suburban Los Angeles, Beverly Hills, Pasadena and Santa Barbara. Disastrous wild fires were rare before 1800 when the Indians methodically burned the wilderness. Accumulation of explosive fuel loads has come with the fire control efforts of civilization. Heavy fuel loads, dry summer, lightning and carelessness produced the Peshtigo fire in Wisconsin in 1871, which burned 1,280,000 acres of forest and killed 1,500 people; the 1894 Hinkley fire in Minnesota that burned 160,000 acres and killed 418 people; the 1947 Maine fire that burned 200,000 acres and killed 16 people; the 1957 Alaska fire that burned 5 million acres; the 1967 California fire that burned 190,000 acres and killed 5 people.

Foresters are learning that some species of trees like redwoods, Douglas-fir, and longleaf pine can not survive without fires because they cannot compete with other species that are susceptible to fire. Controlled fires set after conifer seedlings have grown big enough to resist them and before combinations of fuel and weather become unmanagable can benefit both man and wilderness and prevent disasters like those just mentioned. People object to the smoke and pollution of controlled fires, but controlled smoke and pollution are much to be prefered to the disastrous conflagrations that destroy everything in their path and produce palls of smoke and pollution that settle 400 miles or more from the point of origin.

Windstorms can be much more devastating than any logging operation. Soaking rains soften the earth so that the cyclone winds of the hurricane heave trees from the ground, roots and all. Whole forests are flattened and hundreds of acres of windthrown mounds of dirt and roots make an erosion pattern as spectacular as any created by the bulldozers of construction crews.

Hurricane and tornado winds are deflected by topography so that the trees on one side of a hill may be flattened while the trees on the opposite side escape. White pines on the Harvard Forest in Massachusetts that escaped the hurricane of 1938 were flattened by the tornado and the hurricane of 1954. Storms like Hurricane Hazel uproot one-fourth or more of the forest in a given region.

In 1635, an extreme hurricane with 20-foot tides devastated Boston Harbor and flattened much of the forest area in New Endgland. Five extreme hurricanes and several tornadoes have plowed through New England forests since 1635. The frequency of hurricane storms is even greater in the South. Deposits of old windthrow mounds overlap each other in most of the eastern United States. Only in the most sheltered places have our forests escaped the effects of windstorm and fire.

Charcoal and fire-scarred trees occupy the entire south-facing slope of the Joyce Kilmer drainage basin. Some unrecorded disaster created the treeless area known as Naked Ground at the upper end of the Joyce Kilmen drainage basin. Wind, ice storms and drough make life short and harsh on the shallow soils of the upper slopes of this Appalachian wilderness. The big trees of this 3,000-acre virgin forest are confined to less than 100 acres of a few sheltered coves where moisture and topography combine to moderate the forces of nature. 350 years is the oldest age estimate that I have been able to make by counting the growth rings of fallen hemlock and yellow poplar trees in the Joyce Kilmer Memorial Forest. Most of the trees on the upper slopes are less than 100 years old.

Giant redwoods and bristle-cone pines are famous for their longevity (1,000 - 3,000 years). However, trees of most species die before they are 200 years old. White oak, juniper, cypress and hemlock trees rarely attain ages of 600 years; 125-200 years is a typical maximum age for these long-lived species. Yellow poplar, pine and oak trees are old at 150 years and contain large amounts of rotten wood. 300 year old trees of these species are extremely rare.

Even in the sheltered spots, life does not go on forever. Diseases invade old wounds, and on every visit to the Joyce Kilmer Forest I find new openings created by the crash of giant yellow poplar, hemlock, and beech trees that were toppled by wood rotting organisms that act just as effectively as a modern chain saw.

Susceptibility to windthrow and death from insect and disease increases with age. If the forces of nature are allowed to pursue their normal course, most of the big trees in the Joyce Kilmer Memorial Forest will die in the next 50 years. The U.S. Forest Service saved much of the Joyce Kilmer Forest from the spanworm by the heliocopter spraying with DDT in 1964. What will we do when the next insect plague strikes our Appalachian forests?

Rots, insects and other pestilences usually spread in epidemic fashion through a whole forest. The elm spanworm, the balsam wooly aphid, and the Gypsy moth are examples. Ice storms, windstorms, drouth, fire, insects, disease, and old age - all of these forces of nature act to clear fell the forest and make way for a new succession of life. If man does not clear fell the forest, natural forces will - on their own terms and on their own time schedule - usually at intervals of 150 years or less.

The major consequence of the interaction between the forces of man and forces of natrue is that the species and tree sizes observed in the wilderness by Captain John Smith in 1607 were not greatly different than they are now.

The policy of the U. S. Park Service is to allow natural forces to obliterate the marks of man in the National Parks. Most of the mountaineer villages and farms, old Indian trails and grassy balds in the Great Smoky Mountains National Park are becoming overgrown

with trees and the vistas and game populations are changing rapidly. Only in the Cades Cove area has the Park Service made a major effort to preserve the marks of man by allowing old families to graze cattle there on a restricted basis. Vast landscapes full of magnificent cattle plus a backdrop of tree-covered mountains makes Cades Cove one of the favorite spots for park visitors. They flock to see the old farms, churches and graveyards. The camping and picinc areas at Cades Cove and along the roads to Gatlingburg through Newfound Gap and Clingman's Dome and ultimately down to Cherokee constitute the most popular spots in the park. Only in these areas and along the Appalachian Train has the Park Service attempted to halt the forces of nature and preserve the marks of man.

Trees do grow; sometimes where we do not want them to, and trees not only grow where we don't want them to, they grow rapidly. In the humid east there is no timberline, and 15 years of growth on even the poorest sites will yield a dense mass of gnarled shrubs and trees over ten feet tall. Unless the mountain tops of ridges consist of bare rocks like on Mount Katahdin, Mount Washington or Mount Marcy, trees will dominate all sites within 25 years after the last storm or fire or insect attack.

The take-home lesson of all this is that the wilderness is made of growing and living things and will change more rapidly with the exclusion of man than it would otherwise. No one should expect to return to his favorite vista or camp site in the wilderness and expect to find things the same as they were five years before. The only way to preserve the wilderness is to embalm it - a process that is not aesthetically pleasing.

Permanent destruction of the wilderness requires the bulldozers, asphalt and concrete of real estate developers, highway construction crews and the Corps of Engineers.

The precious things of wilderness can be destroyed by natural forces as well as by the wanton actions of man. More by accident than by design, most of the fields of berries and wild flowers, scenic vistas, hiking trails, spring boxes, campsites, good fishing and hunting are the products of past actions of man. Exclusion of man from the wilderness will lead to the accelerated obliteration of most of the things that man most treasures there. Whether he wants to be or not, man is a part of nature and has affected and will continue to affect the wilderness he now cherishes.

What should man's future role in the wilderness be? I would like to close this article by examining this ethical quastion in detail. I do not have the answer.

We have come to recognize that the laws of nature have priority over the laws of man and that there is a limit as to how far we can go in subjugation the wilderness without destroying everything that makes life worthwnile. This recognition is producing an over-reaction by many people. Many self-lableled ecologists are dashing about demanding that we create a "pure and pristine wilderness" by excluding man from nature.

Modern civilization is in desperate need of a new ethic - a conservation ethic. Most ethics are clear cut - thou shalt or thou shalt not. However, man by his very existence alters the world. Construction of a skyscraper or a home requires that a hole be dug to extract stone and that trees be felled to form the concrete and furnish the building. Heat for our houses requires dams on the rivers, strip mines in Kentucky and pipe lines in Alaska. Many state laws require that we take water upstream and pass it out in like quality and quantity downstream. A little thought will reveal that we can not do this in our homes, much less on a city-wide or manufacturing basis. Neither the commandment "thou shalt preserve the wilderness"

nor the commandment "thou shalt not preserve the wilderness" can be obeyed. What should the commandment be? Because we are today, tomorrow will be different. Perhaps we should simply strive to manage our lives, our consumption of energy and our cultures, so that the world will be healthful and beautiful for every living creature today and so that the life that comes after us will find the world even more healthful and beautiful.

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HELP SAVE OUR WILDERNESS !

The Wilderness Preservation Act of 1964 protected 9 million acres of wilderness land and ordered that an additional 55 million acres be considered for the same permanent legal protection. The 10 year deadline of this act is 3 years away, but so far only about 20% of the 55 million acres has been reviewed, and the pace of governmental action continues to lag. There is a danger that the land not reviewed as of the 1974 deadline will fall prey to the ravaging of the lumbering industry or else will be used for overnight camping facilities, which would endanger the ecology of these wilderness areas. The areas included under the Act but not yet reviewed must be held safe until Congress can act upon them.

President Nixon has drafted an executive order for the preservation of wilderness, insuring that the 55 million acres mentioned in the Wilderness Act of 1964 remain unharmed after the 1974 deadline until he and the Congress can consider their fate. Internal struggles in the Nixon administration are delaying the issuance of this order. You are asked to write to the President, urging him to issue the proposed Executive Order on Wilderness. Your letters could move the President to issue the order and rescue the endangered wilderness areas.

This matter is of deepest importance to all who use, treasure, and want to protect the wilderness. For information about the Wilderness Preservation Act, the Executive Order on Wilderness, and what you can do to help save our country's wild areas, write to

The Wilderness Society
729 Fifteenth Street, N.W.
Washington, D.C. 20005
(202) 347-4132

or

Donald Kindschi, M.D.
Prairie du Sac, Wisconsin 53578

MIOCA LEADERSHIP SEMINAR

by Cadaver (NYUOC)

"It says there's a covered bridge on the left!"

Kevin Sweeny and I are following Ken Goddard's unique directions to the jumping-off point for the Leadership Seminar on Shandaken Creek. Thus far we have passed no less than two suspension bridges, one cantilever, three rope bridges, sixteen sets of stepping-stones, and a ferry crossing -- all on the left -- and seventeen covered bridges on the right. Finally we come to a crossing that fills the bill: on the left, a log across the stream with a branch overhead. We cross and head up the trail through (not over) the snow, following the footprints thoughtfully left by Ken. In our enthusiasm we don't notice they are heading the other way.

By and by we come to another crossing of Shandaken Creek. It is a long twig, about half an inch thick, the ends six feet from either bank. Halfway across is the decaying carcass of a mountain goat that slipped and drowned. On its hooves are instep crampons.

Well, I don't make it either. It takes Kevin a half hour to thaw me out. We go on, and just as we begin to pick up speed again we bang into a box containing a guest book!! After much weeping and wailing, we add our names to the list, which includes the Ranger, who installed a fresh book around New Years, then a party of campers, then a team from the Cryogenics Society, then the Arkville coroner, then Ken Goddard.

Walking along the riverbank in the deathly stillness a distant voice is heard. Across the creek, then some yards away, is Ken, in the fabled Shandaken Creed lean-to, yelling at the top of his lungs. He tells us to broad-jump across. We plan to throw him in but are too tired.

Nothing can be cooked since the fuel is frozen, so we get into our sleeping bags, shivering a bit. Later arrivals say the lean-to looks like it was full of giant spastic caterpillars.

Later events are sort of blurry. There are meals, and a discussion of leadership theory and past fatalities, and hikes, and everybody singing around a fire that isn't big enough to fit everybody aroun . A few sounds penetrate the sheet ice around our minds.

"Hey! It's cold!"
"WHAT shall we do with a drunken sailor ..."
"Aaah, this isn't real winter mountaineering! The stream's not frozen!"
"Who filled my hat with snow!?!"
"I hope you all have your first aid kits."
"I'm hungry!"
"If this was really winter mountaineering we wouldn't have a wood fire going."
"Hey! The fire just went out!"
"How the hell do you expect to hike in bedroom slippers?"
"Why are there blazes on the backs of trees too?"
"In case the ones on the front wear out from being looked at too much!"
"Then why can't we just follow these blazes back?"
"Oh no; they're just spares. This is a one-way trail."
"This oatmeal has LUMPS!!"
"I'm cold!"
"...shave his chest with a rusty razor..;"
"UPHILL?!?"
"Get off my poncho with those crampons!"
"I wore my spring shoes, so this can't really be winter mountaineering, can it?"

"In that case let's put on bathing suits and have a heat wave!"
"'If it hurts, you know it's still there!'"
"Haven't you ever heard of phantom pain?"
"I wanna go HOME!!"
"You know, I guess maybe this is kind of like winter mountaineering after all ..."

(Taken from Puckerbrush 3(5). Editor, Ellis Lader. The newsletter of the New York University Outdoor Club.)

WOODLAND MATHEMATICS

(Taken from Puckerbrush, Vol. III, no. 5. The newlletter of the New York University Outdoor Club. Editor, Ellis Lader.)

Several important constants from physics and chemistry can be of great use to the outdoorsman. When crossing streams over narrow boards, the hiker can greatly reduce the danger to himself by properly applying Planck's Constant. Survival in the tropics is facilitated by remembering Avocado's Number. Also, to simplify calculations with large figures, the woodsman need only cut down several trees and lash them together to construct a usable log table. And speaking of logs, when you build a fire, remember that there's no fuel like an old fuel!

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TECH TOPIC: BOOT GREASE

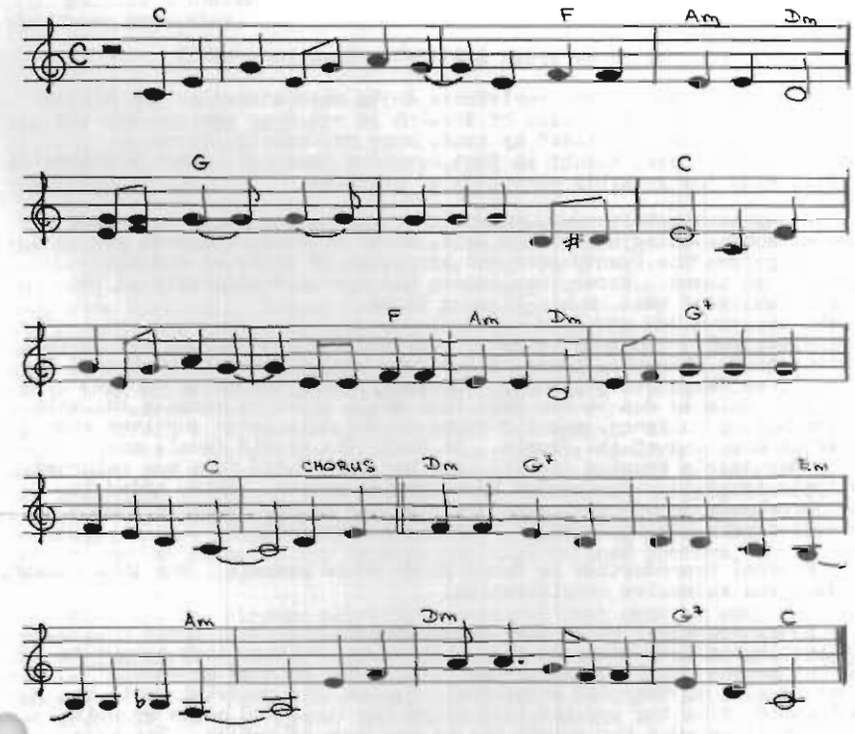
by Blake Bacon

Two common brands of boot grease are sno-seal and sno-proof. I've heard no comments on sno-seal. My experience and that of some other people with sno-proof is that it makes the boots fall apart in about a year - the stitches rot out. Peter Limmer sells a German brand consisting of animal (instead of petroleum) grease and silicone. He figures animal leather- animal grease.

In summer grease your boots and then leave them in a car all day. The grease soaks in quite nicely that way.

I CAN'T STAND THIS PASSAGE ANYMORE

by Tom Paxton, Steve Derby, and Barry Kirchner



Through this muddy hole I grovel like a mole,
And I crawl through passages that wind.
By the flame of carbide light I explore the darkest night
And it seems that I have lost my mind

CHORUS
And I can't stand this passage anymore, anymore.
And I can't stand this passage anymore.

As I crawl on through the mud, my mouth gets filled with crud
And I think that I've just lost my shoe.
All the people that I see look as grubby as can be
And I think that they've been caving too.

Well, I had some skin one time on an elbow dark with grime
But I left it in a passage far away.
And the skin on my knee I never more shall see -
Why do I take my pleasure in this way?

Well, I had a friend who caved and of the sport he raved
And his underground travel took him far.
After years of cuts and bruises, we find that now he chooses
To stay under the weather at the bar.

Now if you see me crawling by and you sit and wonder why
And you think you'd like to be a caver too,
Grab your grungies and your light, we leave at ten tonight
For caving is the thing we love to do.

A SELECTIVE TREATISE ON THE FLORA AND FAUNA OF THE GREEN MOUNTAINS OF VERMONT

by Robert Roth (NYUOC)

(reprinted from the Puckerbrush 2(9):2-3 , December, 1971)

The most common lower vertebrate to be encountered on the hiking trails of the Green Mountains of Vermont is not Homo sapeins but the porcupine. Called "porkies" by some, more accurately termed "#$))%?&!!" by most; hikers in fact consider them the lowest vertebrates of all, with the possible exception of peepers.

A unique metabolic arrangement enables the porcupine to thrive on a diet of nothing but common salt, which he obtains almost exclusively from the sweaty gear and trappings of primates who hike through his biome. Water then enters his system osmotically as the concentration of salt in his tissues rises.

"Porkies" are physiologically equipped for both sexual and asexual reproduction. However, there is a strong evolutionary trend toward the asexual, or "vegatative", mode, especially among the males of the species. This is due to the fact that while in other mammals the male can engage in polygamy, among porcupines the male never survives even a single mounting of the female. In fact, the gravid female must carry her mate's remains impaled upon her back until they are returned to their constituent molecules by bacterial action. This, added to the normal strain of bearing and rearing the young, exerts a strong selection pressure in favor of vegetative reproduction.

Asexual reproduction is found in no other mammals. For this reason, it deserves extensive consideration.

Every schoolboy knows that porcupines do not shoot their quills. Few people realize, however, that this is not because they cannot do so, but because they choose not to do so. Why do they so choose? First of all, if they did shoot their quills, any predator worth his salt could trick the porkies into skewering trees and rocks by swift footwork, then grab the animal one he was bare of quills. But more imp rtant, the porcupines know that their quills are more valuable as reproductive organs than for defensive purposes. A fully-quilled porcupine has such a large surfact-to-volume ratio that, if he has not eaten for a few days, he may be wafted about by the wind as easily as dandelion seeds. The biological significance of this is fairly obvious: if the environment does not provide enough food for its porcupine population, they will soon be blown elsewhere. This maintains the species until conditions are ripe for asexual reproduction.

The porcupine reproduces vegetatively during the heavy rains that periodically cover the Eastern deciduous forests of North America. Sensitive natural barometers tell the animal when such a storm is approaching. His instinctive response to this stimulous is to increase his salt intake as much as possible by consuming anything that contains the least bit of sodium chloride. (This is one of the traits that so endear this little beast to hikers who find themselves tentless as the clouds darken and lower.) As the deluge begins, the porcupine's body contains so much salt that he soaks up water like a dehydrated sponge. His body swells to critical mass. When the mass (m), body radius (r), and average quill length (Q) obey the relation

$$\log(m/r - Q) = p_1$$

a startling change occurs. The animal's body breaks up into as many parts as there are quills. The quills themselves bedome flexible, and each attaches itself to its share of the body. What was once a porcupine is now hundreds of flagellated spores, which disperse by swimming through the rain-water. Chemical sensors seek out favorable, i.e. salty, locations. When such a spot is found, the flagellum anchors itself and the head of the spore slowly grows into a new porcupine.

Such is the life cycle of one of the strangest common animals of the Green Mountains.

The porcupine is a distinct nuisance to hikers, but there is another organism to be found on the trails that is a definite menace. It is a comparitively new entity, having evolved to its present form at some time around 1900 C.E. This organism is the rapidly spreading Trailblaze Fungus.

Actually a lichen, the Trailblaze Fungus was first discovered on the trunks of trees growing near the Long Trail in the Green Mountains -- specifically on those trees visible from the Trail. There it took, and continues to take, the form of a rectangular white patch with the long side vertical. Inasmuch as it grows approximately five feet from the ground, the lichen is indistinguishable from the white blazes used to mark the Long Trail; hence its name. This insidious plant is beginning to evolve new colorations along side trails blazed in colors other than white, although the genetice phenomenon of incomplete dominance makes most of the new forms appear more pale than the actual blazes. Given time, however, the lichen is expected to evolve a gene pool containing every solid color in the visible spectrum, as well as new shapes and new orientations to the ground. Already mutations are beginning to appear that resemble the "bullseye" - style blazes, i.e. a colored spot on a white field. Forest Rangers and groups dedicated to the preservation of America's remaining wild hikers are taking special pains to try to wipe out this refined species, thus far without success.

What are the strange selection pressures that evolved such an organism? The answer is one of the strangest to be found in natrue. The Trailblaze Fungus, it seems, has equipped itself with an entirely new method of synthesizing its food. Very few trail markings, and hence even fewer Trailblaze Fungi, are green. Thus photosynthesis is not practical in this plant, the accessory pigments in the red, orange and yellow varieties being inefficient at best. Chemosynthesis, investigation has shown, does not occur either. The complicated method used by the Trailblaze Fungi, accounting for their late evolution, is known as sonosynthesis. Auditory organs in the lichen actually convert sound waves of the proper frequencies into energy for the synthesis of carbohydrates from carbon dioxide and water. And now, the most astonishing fact of all: the most useful frequencies of sound for this process are those constituting human curses, ")($?!" and "&"/(+)#?$&¢" being ideal. Hence the lichen's resemblance to trail markings assures them an ample supply of usable sound frequencies, even on (or rather slightly off) trails that are only moderately traveled.

Hikers in the Green Mountains are asked to investigate these organisms further while waiting for searching parties.

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