

Illustrations: Union Camp Corp.

Lake Drummond in Dismal Swamp, created, according to Indian Legend, by the "Firebird"—possibly a meteor.

Preserving 'Ye Great Dismal' for posterity

Some 210 years after George Washington led the first unsuccessful attempt to drain the swamp already long known in his day as "Ye Great Dismal," the Union Camp Corp., last week on Washington's Birthday, presented to the Department of the Interior a 49,097-acre parcel of the southeastern Virginia land as a wildlife refuge.

Although little or no virgin forest remains, and the original inhabitants, the Nansemond Indian tribe, were scattered before 1800, the Great Dismal Swamp is one of the East's last wilderness areas, home for 75 species of birds and one of the last Eastern breeding grounds for the Black Bear.

The refuge centers on Lake Drummond, named for the sole survivor of the pioneer party that discovered it.

(The first colonial governor of North Carolina, William Drummond was later hanged, drawn and quartered for his part in an insurrection.) Around the lake, forests of swamp maple, cyprus hung with Spanish moss, and the jagged-barked "prickly ash" form a dense canopy over marshes whose waters may be as dark as cola and are inhabited by blind fish.

William Byrd, who first surveyed the area, found little of promise: "The foul Damps ascend without ceasing, corrupt the Air, and render it unfit for Respiration. . . . Never was Rum, that cordial of Life, found more necessary than in this Dirty Place."

George Washington, some 40 years later, disagreed, describing it as a "glorious paradise," and setting about

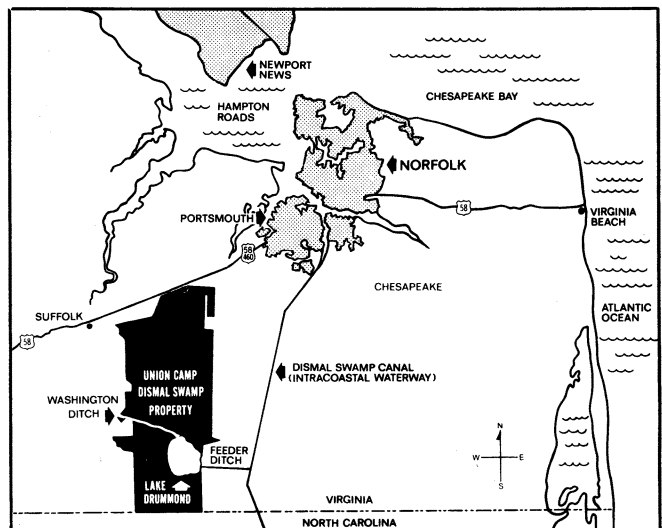
to convert the swamp for agricultural purposes. All that remains of his efforts is a five-mile-long canal from the western edge of the swamp to Lake Drummond, known as "Washington's Ditch."

Beginning with the building of an ambitious interstate canal, under the sponsorship of Patrick Henry, the Dismal Swamp gained economic importance as a source for lumber and a secluded getaway spot for an odd tourist trade. (The Lake Drummond Hotel once advertised its accommodations as being "calculated to render facilities for matrimonial and duelistical engagements.")

If the region is rich in history, it is even more abundant in legend. The best known legend originated in Nansemond tribal lore and concerns an



Peat can be 15 feet deep, as demonstrated with pole.



Portion of Dismal Swamp donated as refuge (in black).

Indian maiden who died just before her wedding night. Seeing a ghostly canoe one night on the lake, lit by a firefly lamp, her groom paddled out to meet her and was never seen again. Even today hunters and fishermen claim to have seen the "Lady of the Lake," and indeed a summer's night is filled with mysterious lights from fox-fire (luminescent fungus) and will-o-the-wisps (burning swamp gas).

In recent years public interest in the Great Dismal Swamp has increased. The swamp over-all has been reduced to only a third of its original size, and much of the original wildlife, including the cougar and wolf, has been annihilated. Logging operations have fallen off for the last quarter century, and the importance of the Dismal Swamp Canal dwindled after completion of the wider, deeper and shorter Chesapeake and Albemarle Canal.

Thus, when The Nature Conservancy, a national land preservation organization, approached Union Camp Corp. with the idea of donating their share of the land as a wildlife reserve, they found a ready customer. Union Camp will be allowed to write-off on taxes an estimated \$12.6 million on their donated land, which represents about a fifth of the swamp. Some 60 percent of the swamp is located in North Carolina, and is not affected by this agreement.

At a presentation ceremony in the Department of the Interior, all parties emphasized the need for more such donations to assure adequate land for America's wildlife. Speaking for ailing Secretary of the Interior Rogers Morton, Under Secretary John Whitaker expressed the hope that "this will serve as a model for future actions by major companies." □

Mission possible: Repair for multiple sclerosis

Multiple sclerosis is a disease of the brain and spinal cord. A half-million Americans are estimated to have it or a related disease. About a third of the victims of multiple sclerosis, a recent Israeli study shows, suffer emotional or intellectual disturbances. Victims may be afflicted with partial blindness, loss of speech, loss of equilibrium or other neurological symptoms. Sometimes multiple sclerosis strikes silently, deadly. A recent autopsy of a 27-year-old woman who committed suicide showed that she had severe brain damage from multiple sclerosis. Yet her only symptom of the disease while alive was a slight tremor. Most victims of multiple sclerosis, regardless of the extent of brain or spinal cord damage they suffer, live many years. There is no ef-

fective treatment to date.

If scientists have learned anything over the past 40 years about the action of multiple sclerosis at the cell level, it is that the disease constitutes a destruction of the fatty (myelin) sheaths that coat nerve fibers. Certain cells in the brain or spinal cord, known as astrocytes, react to myelin damage by forming their own kind of fibers. These astrocytic fibers, or scar tissue, many investigators believe, keep nerve fibers from making new myelin. In other words, the astrocytic fibers prevent nerve fibers damaged by multiple sclerosis from healing. But there has been no evidence to back this hypothesis.

Now, after some years of research, scientists at the Stanford University School of Medicine have what may be preliminary support for such a hypothesis, or at least a means of chemically testing the hypothesis. They have iden-



Bignami/Brain Research

Astrocytes surround a blood vessel.

tified a protein that is an important constituent of astrocytic fibers. This is the first time that anything has been learned about their chemistry.

The finding was reported by two of the Stanford investigators, Doris Dahl and Amico Bignami, this week at the annual meeting of the American Association of Neuropathologists in Washington. Their findings are also in press in *BRAIN RESEARCH*.

Dahl, Bignami and their co-workers first noted that there was a lot more of a certain kind of protein in the brains of multiple sclerosis victims than in the brains of other persons. They set about trying to isolate, purify and identify the protein from both multiple sclerosis brains and from healthy brains. They have now accomplished their aim. They have found that the protein makes up about 20 percent of astrocytic fibers, is found only in the brain and spinal cord and is different from

all other known brain proteins.

The Stanford researchers would now like to get a better idea of how the protein might keep myelin damaged by multiple sclerosis from regenerating. Their long-range goal is to try to find some way of blocking the protein, or the total astrocytic fiber, with radiation, hormones or chemicals. They believe that if they can find an effective block, it might be used to treat multiple sclerosis patients. In other words, such a block would keep astrocytic fibers (scar tissue) from forming and would allow multiple sclerosis-damaged myelin to repair itself. There is evidence that such repair is possible.

The finding is certain to change approaches toward fighting the disease. Jans Muller of Indiana University School of Medicine and chairman of the pathology meeting told *SCIENCE NEWS*: "Over the past 30 or 40 years, almost all research in multiple sclerosis has had to do with the breakdown of myelin. Now Dahl, Bignami and their colleagues have added a new note to this work, that the myelin is not what we should be looking at, but the protein." □

The bitter and sweet of saccharin research

Three years ago the Food and Drug Administration outlawed the use of cyclamates as a food additive (*SN*: 10/25/69, p. 369). At the time, the artificial sweetener had been under attack for several years. Diarrhea in children, deformities in chickens and, finally, cancer in rats had been linked to cyclamates. But it was the cancer find that forced the FDA to take the chemical off the market. The Delaney amendment of the Food, Drug and Cosmetic Act absolutely prohibits the use of any food additive that causes cancer in animals or man. Now there is a chance that the Delaney law might be called down again—this time on saccharin, the only artificial sweetener still on the market.

With the cyclamate scare, fear was voiced that saccharin too might be carcinogenic. The National Academy of Sciences investigated this possibility and ruled that saccharin "does not pose a hazard" (*SN*: 8/1/70, p. 96). The NAS did, however, point out that all the facts were not in.

Now the facts are coming in. Last year the Wisconsin Alumni Research Foundation reported that rats fed a five percent solution of saccharin developed large malignant tumors. The FDA has conducted a similar study and found suspicious bladder tumors in saccharin-fed rats. Pathology and histology studies of these tumors are just