pressly forbidden by the constitution to discuss or vote on such a matter. The by-laws of the society must be approved by the Minister of Education. It is provided that at least two thirds of the corresponding members must be Italian. At present less than one third are so, and the new constitution provides that no non-Italians be admitted to membership until the desired ratio is attained.

DISCUSSION

ORIGIN OF THE SOUTHERN APPALACHIAN GRASS BALDS

WITH the opening of the Smoky Mountain National Park the attention of an increasing number of scientists will be directed to the southern mountain bald problem. At the higher altitudes local grass areas varying from 1 to 100 acres in size are to be found sharply delimited in a setting of either balsam-spruce forest or the high altitude deciduous trees, such as northern red-oak or chestnut. Andrews Bald (alt. 5,860 feet) on the end of a south spur of Clingman's Dome Mountain, near the center of the park, is an excellent example of a grass bald. Roughly approximating a square in outline it presents 75 acres of nearly pure mountain oatgrass (*Danthonia compressa*), changing to a sedge (*Carex flexuosa*) at its upper wet margin. This luxuriant, deep-sodded, local grassland contrasts most amazingly with the dark virgin balsam-spruce forest which arises sharply on every side of it. From the depth of the humus layer and from the asymmetric growth of the trees bordering it, the area is known to antedate the settling of the region by white men.

To plant ecologists of the eastern United States, the origin of the grass balds has been an unsolved riddle. If natural forces (including fire) have been involved, why haven't much larger areas of the high mountains in the last ten or twenty centuries gone over into "bald"? But the balds are mere dots on the mountain landscape.

On the basis of intensive studies made during the past summer, the hypothesis is presented here that many of the grass balds are in reality ecological artifacts of Indian origin; they represent old Indian, high mountain, summer camp sites, which when abandoned went through a ruderal stage into the oatgrass subclimax, a community which under the climatic conditions of the high ridge and mountain tops of the southern mountains is able to resist the invasion of the original forest almost entirely and to a marked degree the shrubs of the environment as well.

The Indian encampment hypothesis is supported by the following facts: Indians preferred the ridge trails for travel and hunting. The grass balds are generally located on broadly rounded ridge or knob tops (never on sharp ridges useless for camp purposes) and on the warm southern exposures of these. Unusually good springs may be found at or near the lower margins of the grass areas. Disturbed areas in certain balds were found in which the plant succession leading to the grass was taking place, a succession never noted following the destruction of the forest by logging or fire.

This grass bald succession into a subclimax may be observed frequently on the high altitude trails. In fact, many long trail sections in rather open forest are nothing but linear grass balds, showing in every respect the true bald character. And the initiation of these trail balds is wholly due to human interference operating at the soil level.

Fire in balsam-spruce is universally followed by the "fire-cherry" community, which under repeated fire succeeds itself by basal shoot regeneration. Fire alone can not explain the origin of the grass balds nor, it is believed, can any other natural factor or combination of natural factors.

A fuller presentation of this hypothesis is in preparation which, it is believed, will go far in solving the riddle of the origin of the Southern Appalachian grass balds.

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BEHAVIOR OF THYROID FOLLICLES IN THE HARVEY-LOOMIS CENTRIFUGE MICROSCOPE

AT Uppsala Universitet, with the collaboration of Professor The Svedberg and Kai O. Pedersen, I observed the extrusion of the colloid from the thyroid follicles in the ultra-centrifuge at a centrifugal force of 100,000 to 200,000 times gravity and the precipitation of thyroglobulin in the colloid immediately after its extrusion. It was observed that the thyroid cells were heavier than the colloid. In order to observe the details of this process I have placed rat and Necturus thyroid in the Harvey-Loomis centrifuge and observed it while subjected to a centrifugal force of 10,000 times gravity. This force is not sufficient to cause the colloid to pass through the connective tissue capsule of the thyroid follicle at any appreciable rate. However, the mechanism of its liberation from the thyroid follicle itself can be seen. Occasionally a number of cells of the thyroid follicle break loose and fall through the colloid, thus leaving a hole in the follicle through which colloid could escape if it could get out through the connective tissue layer. Since in the living animal there are lymph spaces and blood