

ORIGINAL TREELESS AREAS IN WEST VIRGINIA

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The statement is generally made that the original vegetation of the middle Appalachian region consisted of some type of forest cover. It is well known, however, that thousands of acres of this area were treeless at the time of the first exploration by European colonists.

George Washington, in his *Journal* (Toner, 1892), refers to Old Fields and Wild Meadows, and the editor, Toner, gives the following explanation: "There were many small, timberless tracts of land on the mountains and in the great valleys of Virginia and Pennsylvania, in regions which were generally, prior to the occupation and the clearing of the country by the white man, densely covered with trees. Large tracts of such timberless land existed in the region now embraced within the counties of Berkeley, Jefferson and Frederick . . . In some respects these openings resembled the treeless prairies of the west. No satisfactory explanation of this frequently observed condition has ever been given. Many of these meadows were the favorite pasturing grounds of the large game and were . . . of special interest to hunters. Clearfield County, Pa., it is believed, got its name . . . [from] natural clear fields and meadows."

The investigation of these areas and the presentation of a satisfactory explanation of their original treeless condition is necessarily a difficult task at this late time, in view of the universally disturbed conditions, whereby even the precise location of many of the areas is now in doubt. Several possible explanations are here set forth and evidence from observed and recorded facts is advanced to provide what seems to be a satisfactory account.

1. *These areas may correspond to alpine meadows or tundra known to exist above timber line in many parts of the world.*

It is well known, however, that the Southern Appalachians do not afford elevations sufficient for the development of this type of vegetation. Timber line in the Rocky Mountains at the latitude of West Virginia is at approximately 10,000 feet above sea level. Spruce Knob, the highest point in West Virginia, is only 4860 feet above sea level. Furthermore, the original treeless areas, while found almost entirely within the mountain counties, were by no means confined to the higher elevations; as a matter of fact, most of them occur in mountain valleys.

2. *The areas may be of the same origin as the grass balds of the Southern Appalachians.*

Wells (1937) describes 23 *grass balds* of the southern Blue Ridge and the Great Smoky Mountains. Most of these, he states, are on gentle south slopes of rounded ridge tops or gaps near high bold springs. The explanation of these balds has been an enigma to naturalists for centuries. Wells proposed the theory that their

apparent artificial nature points towards their development as fields about Indian camp sites, where mountain grasses, particularly *Danthonia compressa*, obtained such a firm establishment as to be able to compete successfully against woody plants. Wells cites numerous facts in substantiation of this theory, particularly the location of the balds on gentle warm southern slopes near springs. Such descriptions are not applicable to original treeless areas in West Virginia and it may be assumed that Wells' theory, whether satisfactory or not for the balds, has no bearing on the present situation.

3. *The areas may represent heath scrub such as is developed on extremely acid soil in many parts of the world.*

The *heath balds* of North Carolina and Tennessee, in the same region as the grass balds, have also provoked much discussion on the part of botanists (Cain, 1930). Farther north, in the Alleghenies of West Virginia, there are areas which have some features in common with these balds. These Allegheny areas are locally called *huckleberry plains*. Numerous flat-topped mountain ranges above 4000 feet in elevation are covered with a type of vegetation dominated by ericads, particularly species of *Gaylussacia* and *Vaccinium* which are locally of some economic value to mountain folk. Thousands of acres of uninhabited, rolling, treeless barrens are swept by winds often of terrific force, explaining the name Roaring Plains, applied to the largest such area. Scarcely any evidence of a possible earlier forest cover is to be found and it is easy to form the conjecture that the vegetation for centuries has been similar to that existing at present. It has been shown, however, that there is historical proof that the region was once covered with a fine forest which has been destroyed by repeated fires (Core, 1939).

4. *The areas may have represented relict prairies such as are known from Ohio.*

Transeau's classic studies (1935) of the "Prairie Peninsula" are well known, and his location of the eastern boundaries through soil studies, floristic studies, historical records and the like, have reached a high degree of accuracy. While some of the prairie species are represented in the flora of the Alleghenies, the treeless areas of West Virginia have no more than superficial resemblance to prairie lands. The soil types characteristic of climax grasslands, for example, do not occur in the grassy areas of the Alleghenies, nor do the floristic lists coincide. Regardless of the theories that may be accepted to account for the eastward extension of prairies, there seems no reason to doubt the general accuracy of Transeau's map, which represents the eastern outliers at about central Ohio.

5. *The areas may have been fields cleared and cultivated by the aborigines, on which successional processes of a secondary nature were under way.*

There is abundant evidence that at least a few of the areas may be so explained. Early white explorers told of the primitive agriculture practised by the Indians and a few cleared fields existed in the neighborhood of their villages. Warner's map (1738) mentions "Shawno, Indian Fields". Mayo (1737) refers to "Old Fields", and "Shawno Indian Fields". Frye and Jefferson (1751) mention "Shawno Fields".

Kercheval (1833) identifies "Indian Old Fields" as follows: "On the Wappatomaka [The South Branch of the Potomac River], a few miles below the forks, tradition relates that there was a very considerable Indian settlement on the farm of Isaac Vanmeter, Esq. On this water course in the County of Hardy, when the county was first discovered, there was [sic] considerable openings of the land, or natural prairies, which are called the 'Indian old fields' to this day. Numerous Indian graves are to be seen in the neighborhood". A post office, Old Fields, exists at this point.

Butcher (1912) has the following definition: "'Old Fields' is a common expression for land that has been cultivated by the Indians and left fallow, which is generally overrun with what they call 'broom grass'".

These areas were doubtless very numerous, although small in size. In addition to the Old Fields post office, mentioned above, there is an Old Field Branch in Greenbrier County, an Old Field Fork in Lewis County and another in Pocahontas County, an Old Field Mountain in Greenbrier County and an Old Field Ridge in Pocahontas County. There seems no reason to doubt the explanation of their origin, as related by the early settlers. Nevertheless, they were very temporary and in a few years would doubtless have become forested again, unless maintained as cleared fields by the white successors to the original cultivators. They by no means account for the many areas where the treeless condition was apparently natural and of indefinite duration. It becomes necessary to look further for an explanation of these.

6. *The areas may be regarded as natural grasslands representing a vegetational type which may be called a glade.*

The term *glade*, according to the Century Dictionary and Cyclopaedia was not found in middle English or Anglo-Saxon, but is derived from the Middle English word *glad*, smooth, bright, joyful, derived from the Anglo-Saxon *glæd*, shining, bright, cheerful (the origin of modern *glad*). In its original sense it was "a smooth bare place or perhaps a bright, light, clear place, as in a wood" (cf. Spenser's *Faerie Queene*, VI. iv. 13). The *Dictionary of American English* defines glade as "a natural or artificial opening or clearing in a forest." A tract of low swampy land, sometimes inundated and often overgrown with grass; an everglade". It may now be profitable to examine some of the early accounts of the Appalachian glades.

The *Blackwater Chronicle* (Kennedy, 1853), an account of a visit to the Blackwater River section, in Tucker County, has numerous references to glades in the then trackless forests: p. 89: "We at length descended into a beautiful little glade—more properly a dale in the mountains—some two hundred yards wide and two or three miles long"; p. 90: "rode on down the middle of the wild meadow, through green grass, knee-high, and waving gently in the summer wind, until we reached a small stream, whose banks were overgrown with osiers and other delicate shrubs"; p. 102: "winding through the long grass by a track made by the deer" . . . p. 118: "We came to the head of a glade, through which a stream of some size ran and threw ourselves down upon the soft, beautiful grass, knee-high everywhere around".

A Visit to the Virginian Canaan (Strother), written in 1857, has several references to the same region: p. 25: "After a march of six miles they entered a green glade of great beauty, watered by an amber rivulet, which they leaped with their packs and guns. . . . About five o'clock in the afternoon they emerged from the dreary forest into another waving glade, and at the farther border Thornhill gave the welcome order to halt for the night. . . . The horses, relieved of their burdens, were tethered in the glade, up to their bellies in grass".

In the autobiography of the famous hunter Meshach Browning (c. 1859), *glades* are mentioned in about 25 passages, of which the following are representative: p. 102: "proposed removing to the Glades, where we would be sure of plenty of grass for our stock"; p. 104: "proposed to walk a little through the beautiful glade, which was covered with grass knee high, and intermixed with wild flowers of all the kinds and colors that nature had ever produced; p. 361 et seq.: "The glades are, or then were, clear, level meadows, covered with high grass, which was altogether different from what is there produced now, being of a much better character, growing nearly as high as rye, with a blue tassel at the top. The blades were set very thick on the stalk, to the height of three or four feet [doubtless *Calamagrostis canadensis*]. I have often seen that grass tied in a knot over a horse's withers while his rider was sitting on him; and when it was cut in good season, it wintered cattle equally as well as timothy. There were then hundreds, if not thousands, of acres of this grass growing where there is now nothing but bushes, and a rough and very inferior kind of grass. . . . It was a grand sight to watch the tall grass, rolling in beautiful waves with every breeze which passed over its smooth surface, as well as the herds of deer. . . . The glades . . . are large, level bodies of lands, a part of which are open, natural, wild meadows, with a wet, marshy soil".

From these accounts it is readily apparent that the original glades were wet areas and it may be assumed that they represented poorly drained mountain valleys where the vegetation could be classified as a grass-sedge meadow, or *fen*, being a successional stage in the development of the climax deciduous forest characteristic of the region.

Certain areas are still more poorly drained and are characterized, not by a covering of tall grass, but by a mat of sphagnum, in which both the large and small cranberry may be found. These areas may be designated ecologically as *cranberry glades*, since their structure does not resemble exactly the bogs or muskegs (see Scott, 1949) of the North, to which they have been compared. The most famous of these areas is Cranberry Glades (Darlington, 1943), a 600-acre tract in Pocahontas County, but innumerable smaller cranberry glades occur in many places throughout the mountain counties. These areas are covered with peat, varying in thickness from a few inches to 10 feet or more. Acidity is usually very high. Most of the areas are partially covered with sphagnum, with such low seed plants as *Drosera*, *Menyanthes*, and numerous sedges, in addition to the cranberries.

It may be concluded, therefore, that the original treeless areas in the middle Appalachian region represented a relatively small number of "old fields" per-

sisting temporarily from Indian agriculture, but to a much greater extent intermediate stages of succession in the development of the climax association.

In the preparation of this paper, the writer has been greatly aided by use of the book, *West Virginia Place Names, their Origin and Meaning, Including the Nomenclature of the Streams and Mountains*, by Hamill Kenny, published in 1945 by The Place Names Press, Piedmont, West Virginia.

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