

## Barrens Vegetation in Illinois

Arthur G. Vestal

*University of Illinois, Urbana, Illinois*

In a recent search into descriptions of early conditions in Illinois, the writer was impressed by the frequency of mention of the *barrens*, and although very little botanical information about them was found, their former generality of occurrence was evident. One wonders what they may have been like and what became of them.

It is now recognized that the extensive barrens of Kentucky were in most cases outlying areas of prairie vegetation, and it seems plausible that some of the prairie uplands of southern Illinois, cut off from larger prairies by dissected and forested stream valleys, were sometimes labeled barrens instead of prairies, particularly if they were being invaded by sumac or hazel or by young trees. Very open stands of post-oak with grassy ground-cover (there is reason to believe that post-oak flats were commonly of this character) might also have been known as barrens. Although cultivation has obscured part of the vegetational history, there are in Cumberland County and elsewhere, upland areas which (judging from soil-types) at one time were tree-covered, later perhaps (this before the days of white settlement), swept by fire, and then occupied by grassland plants. These however failed to include some of the most characteristic prairie herbs, such as the Silphiums. These areas also differ from normal prairie by the frequency or local dominance of plants usually occurring in the herbaceous ground-cover of open forest or of glades, for example *Danthonia spicata*. This is definitely a grassland, but a grassland with an unusually high proportion of forest herbs, and lacking many prairie plants. Such vegetation might have been recognized by discriminating early residents and travelers as barrens rather than prairie. There seems to be no good reason why present-day remnants of it should not today be recognized as a survival of at least one kind of barrens vegetation.

With the several types of mixed forest and prairie vegetation representing replacement of disturbed prairie by forest, and with varieties of areas in stages of reforestation following burning or clearing, we are not primarily concerned, though many of these were given the term barrens.

We therefore concentrate upon treeless upland areas dominated by grasses or by grassland containing numerous dicot herbs, which for one or another reason differs from prairie vegetation as commonly recognized in the early days and at present. Rolling hill areas in the south-

ernmost counties as well as in Marion county were described as barrens by Henry Engelmann in the 1860's. Their progressive replacement by forest was considered by him as likely to be completed within relatively few years. One reason for the former common recognition of barrens and the present unawareness even of their former existence may thus be that such barrens have long ago passed out of the picture, partly from extension of agriculture, partly from encroachment of forest as witnessed by Engelmann. His "tall barren grass" is believed by some botanists to be an *Andropogon*.

Lewis C. Beck, between 1823 and 1828, described barrens near St. Louis, some on the Illinois side of the Mississippi. Forest (and prairie) herbs listed by him as occurring in barrens include some of the plants which today can be observed as common species of forest openings, forest borders, cut-over areas of xeric forest, and of forested narrow spur-tops exposed to sun (also to wind: thus kept free from a cover of dead tree-leaves). These also come to occupy strip-mine ridges, road-cuts, cut-over sunny hillsides, and railroad rights of way in forested country. They are common in some abandoned fields, particularly on hill-tops of the Illinois Ozarks. Many such areas will become forested, but many others give indications of continuing as a semi-natural grassland of indefinite tenure. These are the present-day barrens.

The plant list includes perennial sunflowers, asters and goldenrods, *Antennaria*, numerous other composites, prairie grasses (which are grasses of the forest region also in most cases), *Ceanothus*, *Baptisia leucantha*, *Potentillas*, *Lespedezas*, *Tephrosia*, *Desmodiums*, *Gerardias*, *Frasera*, *Pycnanthemums*, *Pteris*, xeric sedges.

Attention of botanists is invited to modern barrens. Economic ecologists will also do well to study them. Here is already at hand a selection of the hardiest native plants for use in soil conservation, particularly in erosion control.