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THE ELEMENTS DELIMITING THE BOSTON MOUNTAINS OF ARKANSAS AS A GEOGRAPHIC REGION*

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The geographic region is a most efficient device for studying any area. It establishes a region possessed of natural and cultural elements in a combination peculiar to it alone, although individually certain of the phenomena may extend far into adjacent lands. The geographic region is not to be confused with physiographic or economic regions which refer to distinct landform and production areas, respectively, or with any other type of region whose bounds are set by a single factor. It is possible, however, for a geographic region to be coexistent with a natural or cultural region when one element is so dominant as to mold all else around it. The difference lies in the fact that the geographic region may combine other types of regions into a unit homogeneous in its unique integration of all of the elements.

The study of a geographic region requires a careful analysis of each of the natural and cultural elements. The purpose is to show how they work together to form a unit apart from surrounding lands. A geographic region thus may often possess a distinct economic or social outlook and exhibit a certain provincialism. Our intention is not to make a complete regional study. We shall only endeavor to determine systematically which elements are most responsible for the delimitation of the Boston Mountains of Arkansas as a geographic region.

THE NATURAL ELEMENTS

Topography. The very name of our study, the Boston Mountains of Arkansas, presupposes one of the major natural elements of the region and establishes the location of the area within a political unit. Extending in an east-west direction through the central northwest quarter of the state, the Boston Mountains stand apart from any surrounding landform. The mountains, themselves an elevated plateau considerably eroded, look out upon the Salem and Springfield Platforms to the north, the Mississippi Alluvial Plain on the east, the Arkansas Valley to the south, and the Redbeds Plains on the west. They are not brooding mountains rearing shaggy heads but they do command an elevation 500 to 1500 feet above the adjacent lands and possess local relief, i.e. local difference in elevation, varying from a few hundred to possibly a thousand feet. Running water has done much to transform them into their present configuration eroding their margins into belts of hills and carving steep-sided, narrow valleys separated from one another by flat summits which are the relics of plateau days. There is no single line marking the separation of the Boston Mountains from the adjacent


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area, for all of nature's boundaries tend to be transitional, yet there can be no question of their existence as a distinct landform region, by virtue of both their elevation and local relief.

**Climate.** Climatically, the distinction between the Boston Mountains and neighboring regions is slight. Throughout the world, important differences in temperature are caused by one of two factors: (1) marked differences in latitude, (2) pronounced changes in elevation. Precipitation contrasts are noted in both longitude and latitude though principally in the former. The Boston Mountains, with a narrow latitudinal extent of 15 to 35 miles, with elevations primarily less than 2000 feet, and a longitudinal range entirely within the scope of decidedly humid conditions, fail to register any spectacular variations from the normal climatic conditions of a wide surrounding area. Despite these apparently negative considerations, we should note some minute differences, the combination of which make a microclimate, i.e., a distinct climatic type over a small area.

Due to the mature dissection of the mountains, there is much local variation while conditions vary imperceptibly within similar distances in neighboring areas outside of the mountains. The length of growing season and average summer and winter temperatures are somewhat affected by elevation and air drainage. We can illustrate the effect of the upland upon climate by comparing data for three stations located approximately on the same meridian. Eureka Springs on the northern edge of the mountains, Dutton in the very heart of our region, and Ozark on the southern edge will serve our purpose. Dutton in its mountainous location has lower average temperatures for both summer and winter. Its January average is 4.5° below Ozark and 2.5° less than that of Eureka Springs; the July average is 6.7° less than Ozark and 3.4° less than Eureka Springs. The growing season of 180 days at Dutton falls short of 225 days at Ozark and 201 days at Eureka Springs. Furthermore, Dutton has 8.44 inches of precipitation above the Ozark average and 4.28 inches more than Eureka Springs. These averages run counter to the normal, creating lower temperatures than one finds immediately to the north and greater precipitation than occurs immediately to the south. The traveler is aware of the cooler breezes he encounters in touring the region as he is also cognizant of the fact that the higher backbone of the mountains often forces condensation and a heavy fog may envelop the summits.

**Flora, Soils, Minerals.** Natural vegetation throughout the area is predominantly deciduous forest with scattered stands of coniferous trees and prairie grasses appearing under certain local conditions. There is nothing to recommend natural vegetation as a delimiting factor in this study. Soils inherit characteristics from parent material and acquire them from all of the elements of the environment. Since the surface rock of this region is chiefly sandstone and shale, the soils are of a similar nature. This tends to distinguish our area from the alluvial soils east and along the Arkansas River to the south, and from the limestone soils north and west. Sandstone and shale soils, however, are also found in the Arkansas Valley outside of the limits of alluvium so that soil marks a less distinct line on that side.
In this particular instance, the mountainous terrain has given the soils two distinct characteristics, namely (1) hill-side soil tends to be thin, rocky, and skeletal and (2) valley soils generally are deep and more productive.

The region lacks minerals of commercial value although glass sand, zinc, lead, marble, and phosphate occur along the northern flank of the mountains. Natural gas is occasionally found but potentialities for it and other mineral development are exceedingly small.

The Boston Mountains of Arkansas and Peripheral Trade Centers.

Hydrographic Factors. Investigation shows that drainage can not be listed among our delimiting factors nor is water supply of much significance in our search. The drainage pattern neither sets limits nor develops homogeneity within the region. The major stream is the White River which flows north and around the eastern end of the mountains to turn south into the Mississippi. It and the small streams to the south of the divide which flow into the Arkansas drain surrounding areas as well. Local water supplies are rather limited. The ground water is generally soft to moderately hard, depending upon what type of mantle rock or bed rock is tapped. The source of water supply is nearly always a spring, well, or cistern and rain barrel. The surrounding areas of limestone have much harder water and often resort to surface water supplies because of greater population.

Outside of the landform itself, then, the natural elements have but minor individuality. The soils, ground water supply, local variations in climatic and weather elements and the lack of commercial mineral resources are lesser distinguishing factors. We must remember, however, that it is the combination of all of these, no matter how insignificant each may be individually, that creates distinctiveness within a region. At this point, then, we can establish the fact that the Boston Mountains form a natural region. This, however, falls short of being a geographic region and we must continue our delimitation by an investigation of the cultural factors.
THE CULTURAL ELEMENTS

The People. It would not be expected that the people who inhabit an area no larger than this would possess characteristics distinct from their neighbors in surrounding areas. The percentage of persons in each age group does not differ from that throughout the rest of the state; literacy is uniform. There are, however, a surprising number of distinctive factors. Population density is lower than in the adjacent areas beyond the limits of the mountains. There is an average of fewer than twenty persons per square mile except under local conditions and this is too great a burden on the land resource. The low density is despite the fact that the mountain area has a high birth rate, reproduction being far beyond replacement needs. Many people, of course, go to the cities and other areas of greater economic opportunity than exists within the Boston Mountains. The fact remains, however, that there is too great a population remaining on the land in relation to the land's carrying power. No other area in the state except the Ouachitas has so great a population pressure.

In addition, we might note that this region has very low percentages of foreign born and Negro peoples. The foreign born population of the state as a whole is insignificant, but the Boston Mountain region has fewer foreign peoples than the surrounding areas. There are virtually no Negroes in the mountains. The few reported for Boston Mountain counties are found in the towns and townships outside of the mountains themselves.

The people exhibit a certain provincialism which is strongest in the more inaccessible part of the mountains and diminishes outward. Isolation has fostered an independent and deliberate nature. They are keen observers and their senses are sharply attuned to the physical environment. They are, as a rule, slow to make friends and to mix with people from outside of their community but once you have won them there is nothing that they would not do for you. In reverse, hate lasts a long time, the area being not unlike the Appalachians in respect to human associations.

Cities and Transportation. One very distinct characteristic of the region is the lack of trade centers of size. Except for small villages and cross-roads settlements, all agglomerations of people are found on the periphery. Thus, a line connecting Van Buren, Ozark, Clarksville, Heber Springs, Newport, Batesville, Harrison, and Huntsville and Fayetteville almost outlines the Boston Mountains. It is dominantly a rural population, both farm and non-farm, with no center within the mountains having the required 2,500 people to be called an urban community.

Transportation facilities also reflect the distinctiveness of the mountain region. There is no east-west highway through the area, although of course one can find state and county roads which wander from settlement to settlement. Only two highways make their way from north to south and those are for the purpose of connecting Springfield, Missouri and other northern points with Little Rock and Ft. Smith rather than in response to a local demand within the mountains. Railroads, too, mirror this situation, only one traversing the mountain area at the present.
Economy. Self-sufficiency is the keynote of the economy of the Boston Mountains. It is reflected in many ways. There is a very small proportion of tenancy not equalled elsewhere in the state except in the Ouachitas. People own and work their own land. Absentee ownership is discouraged, no doubt, by the lack of any major cash crop which can be grown easily and profitably by tenant farming. The very heart of the district has the lowest percentage of farm tenancy, Washington, Madison, Newton, Searcy, and Stone Counties having 31.2%, 30.5%, 27.4%, 33.1% and 31.7% respectively. This differs radically from the 40% + average found on all sides except the central north where a certain amount of similarity exists between the Salem and Springfield Platforms and the Boston Mountains.

Another trait of the economy is the small proportion of mortgaged farms, Madison, Newton, and Searcy Counties having the lowest percentages in the state. It reflects the independent nature and self-sufficiency of the people but at the same time it implies a general lack of modern equipment and such improvements as farmers with few cash products must usually borrow money to have.

The percentage of total value of farm products used by farm households is our real index to self-sufficiency. In Newton, Searcy, and Stone Counties an average of 60 per cent of all produce raised on the farms is used there. This percentage diminishes in Washington and Crawford Counties where available transportation and greater local market make self-sufficiency less necessary.

Agriculture in the Boston Mountains must be of such a nature that diversity enables self-sufficiency to exist. This means a variety of staple crops and animals, with some products to be sold for those necessities and luxuries which cannot be produced at home. The high percentage of land in slope minimizes crop agriculture and places emphasis upon livestock. This becomes increasingly true as the importance of conservation is realized by the people. Also, over half of each of the mountain counties is forested, partly as a result of the location of the Ozark National Forest in the area. Madison, Newton, Searcy, and Stone Counties have 67%, 76%, 69%, and 75%, respectively, of their total area in commercial forest. Much of this forest land can also be grazed.

Although the land is ideally suited for sheep raising, cattle tend to be more important, probably because they are harder, have higher value, and are not in danger from the predatory animals of the area. Nevertheless, there are more sheep and fewer cattle than in the surrounding non-mountain area. Goats are few in number but the main production in the state is found in the mountains. They are ideally suited to the terrain and although are of little actual monetary value they are often kept to help clear the land of brush. Swine are more important than in the adjacent areas. Many of them are half-wild, feeding on mast and given some corn to help fatten them. Chickens are of less importance than in neighboring areas, probably due to difficulty of transportation and lack of local market. The absence of many dairy cattle can be explained in the same way.