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BLACK BELT PRAIRIE Montgomery County, Alabama, and Vicinity

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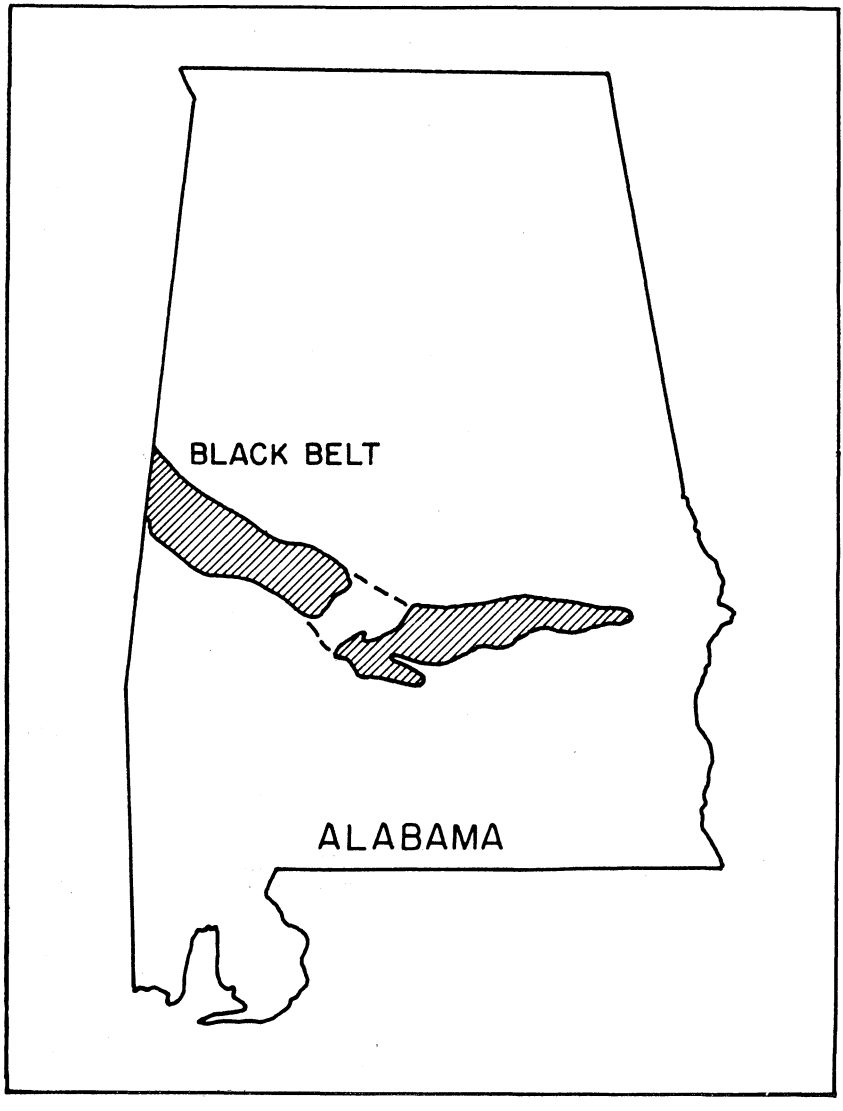

FIG. 1. This general map of Alabama showing the eastern and western sections of the Black Belt prairie was modified from Dixon and Nash *(11)*.

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BLACK BELT PRAIRIE
Montgomery County, Alabama, and Vicinity*

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THE TERM "BLACK BELT" commands immediate interest when mentioned to the southerner. This interest, perhaps, is centered more in curiosity and bewilderment than in actual knowledge. History speaks impressionably of the Black Belt in its documentation of explorations, wealth, war, and agriculture, yet relatively little information is recorded concerning the prairie regions.

Because of the productive qualities of the soil, agriculture has brought the most dramatic change to the cretaceous plains of the Black Belt. The unique forest and prairie landscape that existed prior to European settlement appears today only in remnant descriptions on the pages of the past, but even here the musty pages reluctantly give persuasive evidence depicting the region's soils, topography, and vegetation.

Descriptive information recorded in the past (both intentionally and incidentally) reveals the landscape's condition in parts of the prairie region in Alabama. Recent studies, based on quantitative and qualitative data from the original survey, have described specific prairie locations within the Black Belt *(20,33)*.

The purpose of the study reported here was to assemble and analyze those historical accounts pertaining to the eastern sector of Alabama's Black Belt prairies and to relate these prairie descriptions to more recent studies. Rostlund *(35)* employed only historical accounts and concluded that open country existed in scattered tracts throughout the Southeast. This presentation is not involved in justifying the presence or absence of open country in the Southeastern United States, but rather in pointing out cor-

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relations between the treeless tracts of Black Belt prairie and the ecological and geological factors that produced these areas of unique yet natural prairies.

DESCRIPTION OF THE BLACK BELT

The huge crescent-shaped parcel of land known as the Black Belt extends from northeastern Mississippi southeastward across south-central Alabama, Figure 1. Alabama's portion of the belt is 35 to 46 miles wide and covers approximately 4,300 square miles *(37)*. A dozen Alabama counties claim this region of distinctive soils, topography, and vegetation.

The geographic province known as the Coastal Plain incorporates the Black Belt, which is composed of sedimentary soils derived either directly from ocean sediments or from sediments modified by stream action *(25)*. McGuire *(24)* states that the prairie was once an ocean boundary. Marine shell fossils still found in the prairie regions indicate that a sea did previously exist in this area. Stephenson *(39)* declares that the chalky material of this region was undoubtedly formed as calcareous, more or less muddy ooze which accumulated at the bottom of a sea.

Fenneman *(13)* describes the Black Belt as being a peneplain of cretaceous origin lying buried in a tilting position that slopes about 30 feet per mile to the southwest. Harper *(15)* states that the Black Belt coincides exactly with the Selma chalk, or rotten limestone, which is found uniformly below the prairie soil at various depths.

At the close of the Cretaceous period (about 70 million years ago), the surface formations of the present Montgomery County area consisted of the Eutaw sands, which now form the substratum of the northern tiers of townships, and the Selma chalk, which gives rise to the black prairie soils and also forms the substratum of the red prairie lands *(25)*.

During the Pliocene (between 1 and 12 million years ago), the Selma chalk of Montgomery County was buried by a mantle of gravel, sands, and sandy clays (forming the Lafayette Formation) varying from a few feet up to 30 feet in thickness. Erosion has removed almost all the veneering sands. As a result, the Selma chalk gives rise to the alkaline soils.

Throughout the Black Belt, the Selma chalk has weathered and eroded more than the associated deposits, causing a lower eleva-

tion than the adjacent older deposits to the north and younger material to the south *(39)*. Dixon and Nash *(11)* state that the central portion of the Black Belt generally is about 100 feet lower in elevation than the adjacent regions.

The soils of the Black Belt exhibit two extremes of soil pH, representing both the most alkaline and most highly acid soils that occur in Alabama *(2)*. Alkaline soils were formed from the Selma chalk while clay deposits overlying the chalk gave rise to the acid soils *(11)*. Soils throughout the prairie areas are "spotty," indicating that the alkaline and acid soils are intricately mixed.

The Black Belt soils contain considerable amounts of montmorillonite clay, which shrinks and swells with changes in soil moisture. This makes cultivation difficult because the soil bakes hard in summer and becomes a tenacious mud in winter *(37)*. The montmorillonite clay fraction may be present regardless of the soil pH, occurring under conditions ranging from very acid to alkaline *(11)*.

In Montgomery County the Black Belt crosses from east to west. Its northern boundary is just south of Montgomery, and the southern boundary extends through LeGrand and Downing *(7)*. The northern portion of the prairie land in Montgomery County is very gently sloping and contains most of the "true prairie" soils in the county. The southern part of the county is somewhat higher and more rolling and comprises the red or post-oak prairie.

Regarding Montgomery County's climate, Burgess *et al. (7)* report average annual temperature of 65.4° F and an average precipitation of 53.6 inches based on an 83-year record. During the summer months the temperature may reach into the 90's but averages around 80° F. Strangely enough, the greatest concentration of the annual rainfall (over 15 inches) occurs during summer.

The average growing season is 250 days, hard freezes are infrequent, and wild pasture grasses and weeds usually grow throughout the winter. Droughts are not uncommon in May, June, and October.

PREHISTORIC SPECULATION

The prairie story during the period from the Pliocene to man's invasion is told principally through the geologic and climatic

agents which affected the development and distribution of plants, animals, and soils. In geological perspective, man intruded into the Black Belt environment as a biotic force only a short time ago.

While man's occupancy in the Black Belt prior to agricultural development probably modified the environment, there also is evidence that Indians influenced the landscape. Harper *(14)* says the Indians had a general practice of burning certain areas to attract deer, elk, and buffalo and that fires may have been an influence on the formation of treeless spots. Stauffer and Kyle *(38)* mention that the Indian burned the woods for thousands of years before the coming of the white man. Supposedly this practice of burning was followed to keep the forests open for growth of grass and other food plants for deer, bear, and buffalo. Bossu *(5)*, when referring to the Alabama country, said that when the tall chick grass had been dried by the frost in the winter, the Indians burned it.

Indians in Alabama evidently succeeded in cultivating fields because DeSoto mentioned fields of fruits and vegetables in 1540. The Indian fields were principally along the rivers. There is no evidence that the prairies were cultivated (probably the Indian avoided the heavy soils of the prairie), but no doubt the prairie served as a hunting ground for early man.

EARLY PRAIRIE DESCRIPTION

DeSoto's Expedition map of 1540 shows that he traversed the Black Belt at three different locations, including one crossing south of Montgomery *(10)*. Clear reference to plains, prairies, savannahs, or other types of open country is not found in DeSoto's notes on the Alabama country. In 1560, DeLuna made several expeditions to the Indian regions of the Alabama and Coosa rivers but recorded no description of the soils or vegetation. For more than one hundred years after DeLuna, no other explorers are known to have entered these regions *(21)*.

The first hint of prairie existence was recorded by the 1686 expedition led by Marcos Delgado. This expedition journeyed from Florida to the Creek Indian settlements along the Coosa and Tallapoosa rivers. The following account by Delgado *(9)* includes a region in the vicinity of where Montgomery, Macon, and Bullock counties now join:

"We traveled 2 leagues through pine woods; then 3 leagues over rough,

hilly ground without having encountered a drop of water in three days, until we came to a spring. On leaving the spring, we went north 2 leagues and crossed two small thick swamps, and then 1½ leagues over good and level ground to a stream (the Oakfuskee), and later arrived at a river (the Tallapoosa)."

David Taitt *(43)* came through Montgomery and Lowndes counties while traveling to the Upper Creek Nation. He gave this landscape description:

". . . we then went on our journey NNE about eleven miles to a large creek called Cathoma [sic] running NNW into the Coosa River, . . . between this creek and our last camp (beside Big Swamp Creek) we passed through several little savannahs entirely clear of trees with rows of trees or underwood in the middle, and surrounded with rows of trees between each savannah making a very pleasant prospect for a considerable distance and appearing more like the works of art than of nature."

It is significant that Taitt mentions "savannahs" as occurring between Big Swamp Creek in Lowndes County and Catoma Creek in Montgomery County because this region today contains considerable acreage of prairie soils. Hawkins *(18)* gives the following description:

". . . This good land extends to the Alabama, and down it for 30 miles, including the plains. These are 17 miles through, going parallel to the Alabama south 20° west. They are waving, hill and dale, and appear divided into fields. In the fields the grass is short, no bush; the soil in places is a lead color, yellow underneath, within the abode of the ants, and very stiff. In the wooded parts the growth is generally post oak, and very large, without any bush, beautifully set in clumps. Here the soil is a dark clay, covered with long grass and weeds, which indicate a rich soil. One observation applies to all the fields; in the center the land is poorest, the grass shortest, and it rises gradually to the wooded margins, where it is tall, and the land apparently rich."

The landscape descriptions became more detailed and reliable as professional men came to explore the Black Belt country. William Bartram, a botanist and naturalist, journeyed across Alabama around 1777 and described the prairie landscape in Montgomery County *(3)*:

"We continued on our journey, entering the great plains . . . we continued over these expansive illuminated grassy plains, or native fields, about twenty miles in length, and in width eight or nine, lying parallel to the river which was about ten mile distance; they were invested by high forests, extensive points or promotions which project into the plains on each side, dividing them into many vast fields opening on either hand as we passed along, which present a magnification and pleasing sylvan landscape of primitive, uncultivated nature."

Immediately after passing through the plains, Bartram crossed "several considerable creeks." (These were likely Pintlalla and Pinchony creeks of west central Montgomery County.) He described this region in the following manner:

> ". . . these rivulets were ornamented by groves of various trees and shrubs, which do not spread far from their banks; I observed amongst them the wild crab (*Pyrus coronaria*) and *Prunus Indica* or wild plum, *Cornus Florida,* and on the grassy turf adjoining grew an abundance of strawberry vines; the surface of the plains or fields is clad with tall grass, intermixed with a variety of herbage; the most conspicuous both for beauty and novelty, is a tall species of Silphium."

Besides the vegetative description of the "plains," Bartram also described the soils associated with the grassy plains:

> ". . . the upper stratum or vegetable mold of these plains is perfectly black, soapy, and rich, especially after rains, and renders the road very slippery. It lies on a deep bed of white, testaceous limestone rocks, which in some places resemble chalk and in other places are strata or subterrene banks of various kinds of sea shells, as ostrea (oyster) and so on; these, dissolving near the surface of the earth and mixing with the superficial mold, render it extremely productive."

Benjamin Hawkins in his 1798-99 sketches of the Creek Country *(18)* mentions the Black Belt prairie which lies along the border of Montgomery and Macon counties. The area mentioned here is probably the same general area in which Delgado passed. Apparently both Delgado and Hawkins were in the area drained by Oakfuskee Creek (presently Line Creek) and its numerous tributaries. Featherstonhaugh *(12)* described Oakfuskee Creek as forming "the boundary betwixt the Creeks and the State of Alabama."

Since it is probable that Taitt, Hawkins, and Bartram followed a similar course across Montgomery County, it would be profitable to trace in some detail this route. Cruickshank *(3)* plots Bartram's route as passing from the Tallapoosa River east of Montgomery and continuing through Snowdoun and across route 31 near Fort Deposit. Harper *(4)* traces Bartram's path across the county as going through or near Mitylene, Oak Grove Church, Pinedale, and across Catoma Creek toward Snowdoun. Peter Brannon *(6)* perhaps gave the most detailed description of Bartram's route. The following was taken from his description:

> ". . . the main trail diverged at a point . . . three miles west of Mt. Meigs to proceed southwest to cross Catoma Creek, some ten miles south of Montgomery west of old Chambers post office, to Snowdoun, south and

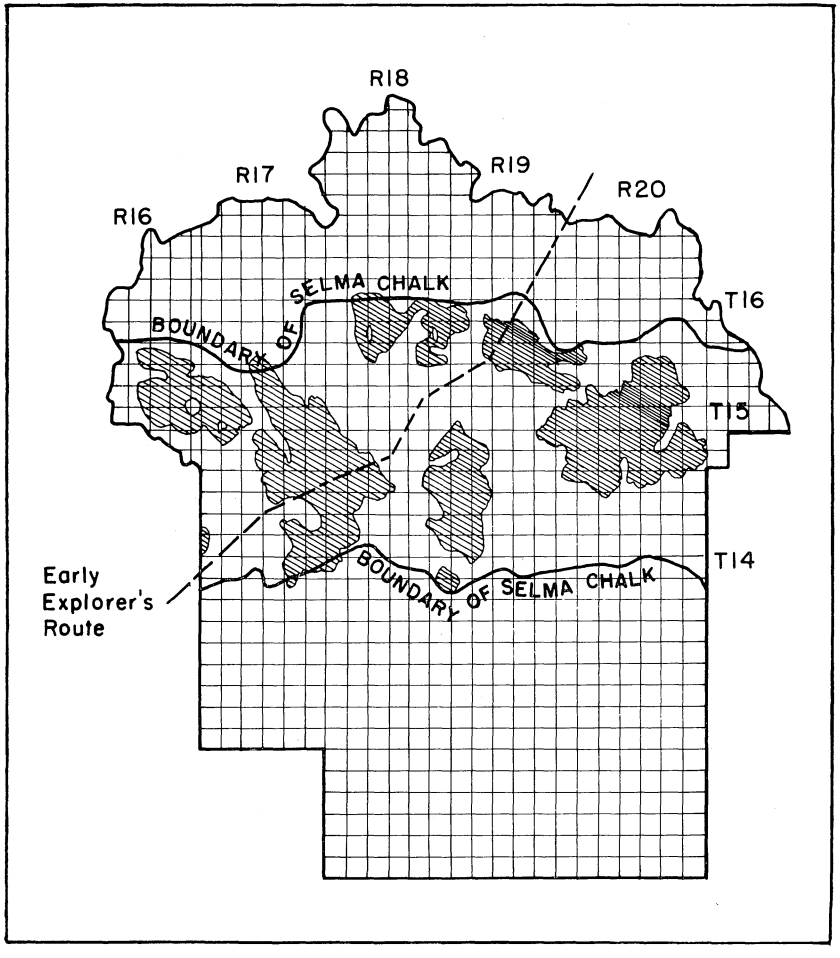

FIG. 2. Black Belt region in Montgomery County, showing the prairie patches (shaded areas) as they occur on the township plats of the 1845-46 land survey.

west to cross the present Mobile Highway US 31 half a mile north Moseley's store, having crossed Pinchona Creek . . . thence southwest. . . ."

This trail probably joined the Old Federal Road near Ft. Deposit and then continued toward Mobile.

The explorers route, when traced on soil survey maps, appears to have traversed those soils classified as Black Belt prairie types (Sumter, Houston, Catalpa, Oktibbeha, Vaiden, and Alluvial types). It is along this route that the more complete prairie descriptions are found, figures 2 and 3.

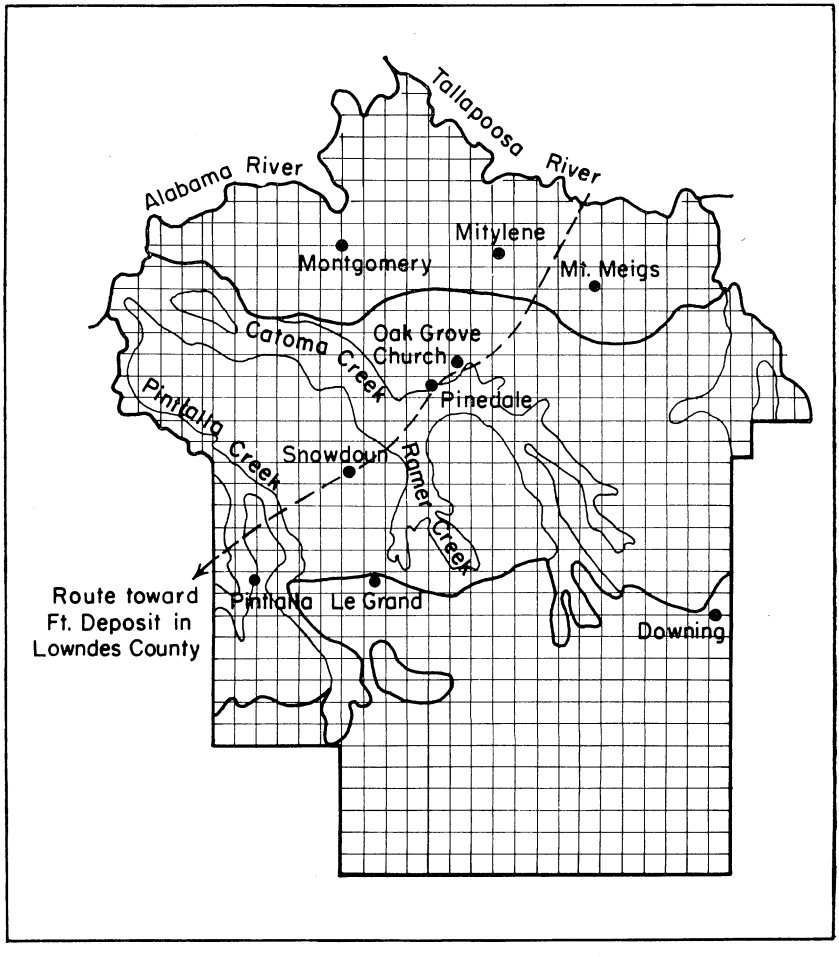

FIG. 3. This general soil map of Montgomery County showing the prairie soils and stream bottom lands within the central prairie regions of the county was modified from Burgess *et al.* (7).

James Stuart *(41)*, while traveling by stage south of Montgomery, gave this description of the landscape:

> "Not long after leaving the river, the stage passed through the first prairie land that I had seen, consisting of large undulating pastures, which never seem to have been covered with wood; on the skirts of which are fine forest trees, and frequently dropping trees, and clumps of wood adorning the plains . . . it (the prairie) consisted of waving ground, necessarily of good soil, from the beautiful sward of grass rising from it. This is the character of a great part of the prairie land. . . ."

Apparently the "plains" of Bartram and Hawkins, the "savannahs" of Taitt, and the "prairie" of Stuart were all within the same vicinity, Montgomery County. Figure 2 shows the path of the exploration route in relation to the prairie patches which were observed and sketched at the time of the original land survey (1845-46). This trail probably crossed the patch of prairie which lay between Mt. Meigs and Oak Grove Church. After the trail passed over the Catoma Creek bottom land, it traversed the large prairie which surrounds Snowdoun.

The same explorers route plotted on a generalized soil map, Figure 3, reveals that at a point about 2 miles south of Mitylene (2½ miles west of Mt. Meigs) prairie soils are present. Soil maps from the 1926 and 1957 soil surveys indicate that the upland alkaline Sumter soils are dominant here. These limestone soils occupy the identical region labeled "prairie" by the original land survey.

The explorers route from Pinedale southwest passed the lowland alluvial clays of Catoma Creek, entering the large prairie that separated Catoma and Pintlalla creeks, a distance of 5 or 6 miles. This prairie is of the olive gray Sumter soil, typical of these Black Belt areas. Rankin *(33)* found that over 50 per cent of the section corners occurring within prairie areas were of the upland-alkaline soil types. Tree density data from the land survey of 1845-46 indicate that few trees existed on the upland-alkaline soils that correspond to prairie occurrence. Rather high tree densities did occur within the Black Belt, but principally in stream bottoms and acid clays. The association of alkaline soils with low tree density and acid soils with high tree densities agrees with the finding of Jones and Patton *(20)* in their study of Sumter County, Alabama (this county lies in the western section of Alabama's Black Belt).

Oliver and Calloway *(31)*, in their description of the area along Ramer and Catoma creeks, stated that prairie soils were the most common type in the area and that such soils were found in patches over all the central portion of the county. They estimated that the prairie soil occupied from half to three-fourths of the region.

W. Roberts, a surveyor, commented on that part of the Black Belt which lies south of the Alabama River. His descriptions *(34)* include land presently in Montgomery, Dallas, and Lowndes

counties. The following descriptions by Roberts were published in the 1818 *Emigrant's Guide*:

> "This tract of country, bounded on the north and west by the river, on the east by the boundary line, and on the south by the ridge, is probably the largest body of good land to be found anywhere within the limits of the treaty, south of Tennessee River. It comprehends an area of sixty townships, or about 2000 square miles, a considerable portion of which is of the first quality. . . . The river cane bottom land, we suppose to be equal in fertility to any on the continent, and may average in width a half, or three quarters of a mile, the river winding through it in a serpentine course, and leaving the cane land sometimes on this side and sometimes on that. The outside of the swamp joining the high land, as on most rivers, is low, wet, and cut up with ponds and lagoons. Next to the river swamp, and elevated above it by a bluff of from 10 to 15 feet in height, we enter upon an extensive body of level rich land, of fine black, or chocolate coloured soil. The principal growth is hickory; black oak, post oak, dogwood, and poplar, are also common, but pine timber is rather scarce. This portion of land is interspersed, more or less, with reed marshes, out of which issues constant running water; and also in many places with flat, wet weather ponds, holding water in winter, and becoming dry in summer. After this, comes in the prairies. These are wide spreading plains, of a level, or gently waving land, without timber, clothed in grass, herbage, and flowers, insulated by narrow skirts of rich interval wood land; and exhibiting, in the month of May, the most enchanting imaginable. The soil is generally of a fine black rich cast, and has the appearance of great fertility. Should they prove to be as productive as the soil promises, they will be of great value, as the expense and labour of clearing land will here be saved; and the soil being of such a quality as will not wash away, the land must be very durable. The prairies extend nearly, or quite to the ridges; and as the country is open, dry, and airy, it promises to be healthy. The only objection to this part of the country seems to be the want of water. . . ." Several large creeks water this district, which will afford good winter navigation for small boats, of sufficient size to transport the produce of the incumbent farms to the river. The principal of these are the Catoma, Pinchona, Pohlahla and Big Swamp Creek, all of which afford extensive bottoms of rich cane brake and beech swamp."

McGuire *(24)* made no particular reference as to where he witnessed prairies, but he did write this regarding the size and vegetation of prairies in Alabama:

> "There are open prairies of every size from one hundred to one thousand or twelve acres, mixed and interspersed in every form and mode with timbered land of all kinds; some producing only black-jack and post oak, not exceeding fifteen or twenty feet in height; others again covered with the most majestic oak, poplar, elm, hickory, walnut, pecan, hackberry, grapevine, and cane."

McGuire used rather picturesque language in describing the prairies as they appear in the spring and summer, calling upon the liveliest imagination to witness the rich clother vegetation:

> ". . . The absence of large trees is amply repaid by the rich garniture of grass, flowers, and shrubbery. The odors of the wild rose, hawthorne, and etc. load the summer's breeze with the most delicious perfumes."

Lyell *(22)*, who visited in an area south of Montgomery, seemed especially impressed by the fossil shells of Cretaceous age. He described the area in this manner:

> ". . . about three miles south of the town there is a broad zone of calcareous marl, consisting what is called prairie, or canebrake country, bare of natural wood, and where there is so great a want of water, that it was at first difficult for settlers to establish themselves upon it. . . . A proprietor told me he had found it very difficult to get trees to grow on the prairie land, but he had succeeded, with great care, in rearing a few mulberries. . . ."

Smith *(36)* gave good coverage of the geology, soils, and vegetation of the prairie region. His soil descriptions were based on actual samplings, and the vegetation was referred to by specific names. He described the cretaceous plain as consisting of both bald and wooded prairies. He compared the flora of the Alabama plains to the grassy plains of the Northwestern States, mentioning coarse Silphium or rosin-weed (*S. laciniatum*), *S. laevigatum, Rudbeckia triloba,* and late flowering species of *Helianthus* (sunflowers), such as *H. astrorubens, H. mollis,* and *H. tomentosus,* as being present. He mentioned *Prunus umbellata* as a common shrub and *Paspalum distichum, Panicum sanguinale, Cassia occidentalis, C. obtusifolia,* and *C. marilandica* as common herbs of the cretaceous plain. Interesting abstracts about the prairie regions of Catoma and Pintlalla creeks also were included in Smith's report.

Historical references to the Black Belt prairies emphasize variation and diversity regarding the features of the landscape. Phrases such as "rough ground," "good level land," "rolling land," "undulating plains" all indicate variation yet offer little definitive information. A journey across the Black Belt would naturally depict contrast and differences. It is apparent that the prairie regions of Montgomery County were not a single extensive plain. Most early explorers described the prairie country as being both open and forested, the insinuation being that both the vegetation and soils were "patchwork."

Topography descriptions indicate variation from a continuous level plain. Topographic differences surely influenced the occurrence and distribution of various soil types which, in turn, influenced the distribution of vegetation. The abiotic factors of soil texture, moisture, mineral nutrition, and pH collectively govern the vegetation that may develop in a location. Throughout the early descriptions, bottomlands and ridges were pictured as being forested land while prairies occurred on intermediate elevations.

Soil diversity was apparent in early Black Belt descriptions, which varied from "perfectly black and rich" to "white ash-colored limestone balds." A study of Black Belt soils verifies that variation and mixing of soils is factual. This patchwork occurrence of soil types may be exemplified in a statement made by an old Black Belt resident in Macon County: "As a young boy, I remember collecting chestnuts and fossil sea shells side by side."

Consistent throughout most early accounts is the fact that prairies were observed and described. Township plots of the original land survey contained sketches of prairie areas. The occurrence of these unique treeless tracts, however small, can be attributed to the natural biotic and abiotic factors which influence any environment thereby commanding the landscape's pattern.

Such treeless areas within Alabama's Black Belt should be recognized as being of a true prairie nature, not only because trees were and are conspiciously absent, but because the topography, soils, herbage, and grasses are "prairie."

PRAIRIE DESCRIPTIONS SINCE 1900

Publications appearing at the last of the nineteenth century and the beginning of the twentieth century gave more complete coverage of the soils and vegetation of the Black Belt than did earlier accounts. The work of Charles Mohr *(29)* is the first full volume devoted to the distribution, association, and adaptations of plants in Alabama. He wrote other accounts that describe vegetation in the Black Belt *(26,27)*.

In describing the central prairie region of Alabama, Mohr *(29)* categorizes the vegetation into xerophile forests, mesophile forests, mesophile herbaceous plant associations, campestrian plant

associations, and cultural plant formations. He included post-oak prairies and hill prairies in the xerophile forests, stating that the post-oak prairies occurred in the higher swells and ridges where drifted deposits formed a sand or clay loam soil supporting Spanish oak, black oak, post oak, and post oak with mockernut and pignut hickories. Mohr further stated that where the limestone strata came near the surface, oak and hickory gave way to small trees and shrubs which included: *Crataegus coccinea* (scarlet haw), *C. molle* (black haw), *C. crus-galli* (cockspur thorn), *C. flava* (summer haw), *C. viridis* (red haw), *Pyrus angustifolia* (southern crab apple), *Prunus umbellata* (prairie plum), *Bumelia lycioides* (false buckthorn), *Rhamnus caroliniana* (Carolina buckthorn), and *Ptelea trifoliata* (trefoil hop tree).

Mohr's hill prairies occurred on the borders of the plain both north and south and also on the highest ridges within the plain. Here shortleaf pine and hardwoods mingled with some longleaf pines on the most abrupt summits. Areas where the rich black prairie soils were exposed had white oaks, hickories, or cedar hammocks. Mohr observed, however, that most of the hill prairies were under cultivation (around 1900) and that abandoned fields supported shortleaf and loblolly pines.

Under the general classification of mesophile forests, Mohr *(29)* listed prairie region and cedar hammocks. He explained that the term "prairie region" referred less to the timberless tracts which originally formed a small fraction of its area than to the black, calcareous, highly fertile soil of these uplands. He said this soil closely resembled the soil of the western prairies but that prior to white settlement this region was largely covered by forests. By 1900 the uplands were already cleared of timber, but the river basins and tributaries were still heavily timbered. Tree species on these uplands and mingled with the bottom land species were: tulip tree, linden, mulberry, magnolias, hackberry, and red bay. The mesophile timber of the bottom lands, which were subject to overflow, included: cow oak (*Quercus michauxii*), overcup oak (*Q. lyrata*), laurel oak (*Q. laurifolia*), water oak (*Q. nigra*), red or sweet gum *(Liquidambar styraciflua),* beech *(Fagus americana*), mockernut hickory (*Carya tomentosa*), bitternut hickory (*C. cordiformia*), and elm (*Ulmus alata*) all draped with spanish moss (*Tillandsia usneoides*). Mohr had no doubt about the pecan (*Carya illinoensis*) being indigenous to this region, stating that

groves of full-grown trees were remembered by very old inhabitants.

The cedar hammocks to which Mohr *(29)* referred were restricted to highest swells where the rotten limestone was covered by lighter loams poor in humus but deep and of perfect drainage. Mixed tree growth of *Fraxinus americana, Quercus laurifolia, Celtis laevigata, Quercus texana, Ulmus americana,* and *Acer saccharum* spp. barbatum occurred with cedar on the hammocks. Mohr stated that red cedar (*Juniperus virginiana*) originally formed 30 per cent of this tree growth and often extended over detached tracts of many square miles.

Mohr *(29)* referred to the canebrakes as being the principal component of the mesophile herbaceous plant association. The large cane (*Arundinaria macrosperma*) inhabited the alluvial bottoms, and the small cane (*A. tecta*) prevailed in the open as well as in the forest and low plains.

Bald prairies were described by Mohr as being the true home of the original campestrian flora. Here the limestone was near the surface, and the land was destitute of arboreal growth. Grasses common to the open prairie included: *Paspalum laeve, P. distichum, Panicum flexile, P. autumnale, Andropogon furcatus, Sieglingia sesterioides, Bouteloua curtipendula, Ergrostic capillaris, E. refracta, E. purshii, Poa compressa, Elymus virginicus, Bromus unioloides,* and *Chasmanthium latifolium.*

Mohr *(28)* mentioned in a magazine article that some of the oldest settlers of the cretaceous plain remembered the original condition in this way:

> ". . . its upland covered with open forests of oaks and hickories, or with dense forests of mixed growth of deciduous leaved trees and of the sombre red cedar. The red cedar formed a conspicious feature, interrupted by extensive grassy glades, resembling in the assemblage of their plants the western prairies. . . ."

Harshberger *(17)* described the central prairie territory which crosses Alabama and gave information on the flora of the various regions. Here the central prairie was subdivided into post-oak formation, prairie forest formation, cedar hammock formation, and treeless prairie formation. Topography and dominant tree species for each formation were described.

Owen *(32)*, writing about the canebrake region, said the forests covered only about one-fourth of the region and these wooded areas were confined to swampy bottoms and poor ridges. He

estimated that only 20 per cent of the trees were evergreen, with common trees being sweetgum, shortleaf pine, post oak, hackberry, red oak, and willow oak.

Harper *(14)* found several writers who mentioned that the Black Belt contained many natural treeless areas. He explained how cultivation practices have tended to destroy the location and extent of these scattered areas. Harper estimated that in 1913 not more than 25 per cent of the area was forested. He further stated that the Black Belt had fewer sawmills per square mile and inhabitant than other areas in the State. Those few sawmills cut species of pine, oak, poplar, sweetgum, ash, cypress, hickory, cottonwood, gum hackberry, and sycamore. In another source, Harper *(16)* listed weed species of the Black Belt.

Often names applied to various habitats within the prairie tended to describe both soil and vegetation. For example, Mohr *(29)* divided the central prairie region into post-oak prairies, hill prairies, prairies region, cedar hammocks, canebrakes, and bald prairies. Harshberger *(17)* used similar divisions. Stubbs *(42)* employed these divisions in his soil descriptions: "hammocks" (where the upland oak prairie slopes off to the creek bottoms), "black-jack prairie" (areas where the black prairie subsoil approached the surface and became the soil), and "bald prairies" (where the rotten limestone approaches the surface and mixes with the soil).

Information concerning both native and introduced vegetational species is listed in county soil survey reports. Burgess *et al. (7)* stated that the prairie had as the original vegetation: "open prairie and intermingled deciduous forests; hardwood forests along the streams; eastern red cedar on the highest swells." They gave the following as the general productivity of native forage plants: "an abundance of little bluestem, Indian grass, switchgrass, Panicums, Paspalums, and many others; original vegetation only in scattered areas." McLendon and Mann *(25)* stated that some areas of the Houston clay series (often mapped as Sumter) have not been forested within the memory of man; others originally supported forests of post oak, hickory, hawthorn, wild plum, and ash.

Settlement in the Black Belt obviously had altered the natural landscape prior to and during the period of the twentieth century accounts. Both Harper and Mohr confirmed that agricultural practices devastated the natural landscape.

Mohr explained that only small groves of the splendid forests

of oak and hickory remained and that only isolated tracts of cedar hammocks with their valuable timber of red cedar, white ash, white oak, red oak, and hackberries were left around 1893. Canebrakes were reduced to narrow strips covering stream banks subject to overflow, he noted, and bald prairies with their thinner soil were utterly exhausted or removed by wind and rain. He said native plants of this prairie soil were found only on waste lands and along the borders of cultivated fields.

Yet throughout these more recent references, it is made clear that prairie regions did indeed exist. The term "prairie" apparently was used interchangeably to describe both vegetation and soil distinctives. Most writers included a treeless grassland type plant association within their written descriptions. Stubbs' and Mohr's "bald prairies," Harshberger's "treeless prairie formation," Owen's "canebrake region," Harper's "natural treeless areas," and Burgess' "open prairie" attest to the presence of natural Black Belt prairies.

LAND USAGE

Land purchase records of Abernathy *(1)* showed that the prairies were being encroached upon by 1828, but at this time the greater part was still unsettled. Moore *(30)* stated that settlement on the edges of the Black Belt was started about 1817; however, planters avoided the black prairie before 1830 because they had not learned to master the sticky soils. Cleland *(8)* said that title to practically all the land was acquired between 1819 and 1839. According to the USDA expansion of settlement map *(23)* the area including Montgomery County had a population of two or more persons per square mile around 1830.

From the earliest settlement the interests of Montgomery County have been agricultural. Stroud *et al. (40)* stated that the prairie soil, river terraces, and sandy uplands in the northern part of the county were the first lands to be cultivated. Development of the county was fairly rapid. By 1835, Montgomery was the most important city in Alabama, and in 1846 it became the state capital. The surrounding country kept pace with this growth *(25)*.

Alabama's cotton production was centered around Montgomery in 1850, and the agricultural wealth of the community was high. During this period the area was characterized by large

plantation-type holdings organized principally for extensive cotton production with slave labor. Hodgson *(19)* stated that this section was well settled by intelligent and wealthy planters.

Prosperity was brought to a temporary halt by the Civil War. During the war the Black Belt was called the "granary of the Confederacy" because of its large production of corn *(45)*. At the close of the Civil War, the plantation system was deprived of slave labor, and tenant farming gradually developed. It was during this period of cotton and corn production that the productiveness of the soils declined *(40)*. Later, as commercial fertilizers became popular, leguminous crops such as cowpeas, beans, and peanuts were grown in conjunction with corn.

From 1909 to 1954 cotton acreage declined 91 per cent in Montgomery County while pasture land increased from 11,000 to over 350,000 acres *(44)*. This decline in cotton acreage resulted primarily from the ravages of the boll weevil, with the greatest decrease being on the heavy Black Belt soils.

According to Stroud *et al.* in 1926 *(40)*, Montgomery County's cash crops consisted of cotton and johnsongrass hay, with corn, cowpeas, hay oats, velvetbeans, soybeans, and a few other forage crops also being grown. Farmers recognized the Houston, Catalpa, Trinity, and Congaree soils as being well suited for corn and johnsongrass, while the Sumter, Oktibbeha, and Eutaw soils were preferred as natural pastures.

PRAIRIE OBSERVATIONS AND CONCLUSIONS

Aerial photographs included in the 1957 Montgomery County Soil Survey by Burgess *et al. (7)* show forested land scattered throughout the Black Belt region; however, soil types typical of the prairie support scarcely any woody vegetation. Field observations confirmed that wooded areas occurred principally on acid soils outside those areas outlined as prairies on the township plots. The more dense forests lay in the large creek bottom lands along Catoma, Pintlalla, and Ramer creeks.

Some lowland areas within the prairies support fine timber of hickory, oak, and ash while other lowland sites produce species of hawthorn, hackberry, and osage-orange. Spanish moss is an obvious landscape feature in lowland areas that support large trees. Small trees, when present in the understory, formed a sparse open cover. Herbaceous and woody vines of honey-

suckle, poison ivy, virginia creeper, greenbriar, and supple-jack occurred in the understory among various grasses and herbs.

Water-logged soils in areas experiencing periodic flooding have always been in timber. Huge specimens of oak, ash, and cypress stand as evidence of minimal disturbance in these areas.

Other lowland sites consist of swamps with bald cypress and oak trees draped with spanish moss. Such areas dot the prairie area, often occurring where upland prairie converges into stream bottoms. It was in such areas that bison and buffalo once fed in the swamp grasses and canebrakes.

The red acid clays of the uplands and ridges sustain a variety of woody plants, with oak, hickory, pine, and hawthorn being characteristic. On the "fringe areas," where acid and alkaline surface soils converge, the population of tree species becomes more diverse.

Timber on the upland acid sites is composed of smaller trees representing a successional subclimax. Most of the red upland soils have at one time been under cultivation. Several woodland areas retain the "furrow scars" from row crop operations of the past.

Old cemeteries and other areas not recently disturbed yield species of osage-orange, hackberry, black locust, honey locust, elm, buckthorn, dogwood, and eastern red cedar. Cedar, although not uncommon, is not a dominant feature in Montgomery County's prairie land.

The upland alkaline soils that once favored the fibrous roots of grasses now lie damaged and weakened by the practices of primitive and modern agriculture. Woody and herbaceous species have been introduced and allowed to invade the prairie soils. Osage-orange and hackberry are the most conspicious woody species. Hackberry is probably a natural invader, but osage-orange is an introduced species that in recent years has become a plant pest.

Practically all the upland alkaline land is clear of indigenous woody species. Much of the alkaline prairie soils continues to support pasture land and hay crops. Observations from 1966 to 1969 indicate that soybean production on the prairie soils is on the increase.

The most extensive prairie in Montgomery County consists of the alkaline Sumter soils around Snowdoun, between Catoma

and Pintlalla creeks. Little row-cropping is practiced here; the chief agricultural interest on this rolling limestone land appears to be dairying and hay crops. It was in this general area that many of the early travelers crossed enroute between Mobile and Montgomery.

Surveillance throughout the prairie region impresses that the past is present while the present is passing. The "prairies" that were so carefully drawn on Montgomery County's township plots did occur as a natural landscape feature. No doubt mosaic vegetation patterns of almost every description occurred on the variable Black Belt soils, but today only remnant pieces of the mosaic may be found.

The prairie continues to change as modern man encroaches. Home builders that once avoided these unstable clay soils now produce sprawling suburban homes on concrete slab foundations. Small farms with ultramodern homes dominate the Black Belt scene southeast of Montgomery. Cattle and pleasure horses graze in fields where small ponds have been cupped out of the stiff clays. Even with these changes, however, something distinctive remains.

Alabama's prairies, though sometimes compared to other prairies found in the United States, are unique in this Black Belt. The parent soil material (a calcareous chalk or marl), the climate (humid yet drought-prone), and the vegetation (carbonate tolerating grasses) combine with other factors to make these patches of prairie distinctive. Yet the landscape that was witnessed by the early explorers is gone. Disturbances brought about by man's influence over the past 150 years have so changed the natural successional pathways that there is little chance for a return to anything reminiscent of the landscape that once existed.

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