

PRAIRIES OF THE DARBY PLAINS IN WEST-CENTRAL OHIO

Charles C. King
Ohio Biological Survey
College of Biological Sciences
The Ohio State University
484 W. 12th Avenue
Columbus, Ohio 43210

The early nineteenth century settlers of the Darby Plains in west-central Ohio were well acquainted with the numerous prairies in the area. These open grasslands provided striking contrast to the surrounding closed forests which covered most of the Ohio country. Because of the very flat terrain and slow drainage, most of the prairies were covered with water for extended periods each year. At other times the prairies became very dry, and wild fire was almost an annual event. These prairies, and accompanying soils, had developed over thousands of years since the continental glaciers had retreated from the area. However, as settlers and their progeny learned how to drain and cultivate the prairie lands, the face of the landscape became changed so thoroughly that within a century almost all vestiges of the original wet prairies were obliterated. A recent survey has located several significant small remnants of prairie vegetation. These valuable remnants provide unique opportunities and genetic material not only for restoration of wet prairie communities and ecosystems in the area, but also for restoration of human awareness of the natural heritage of the Darby Plains.

GEOGRAPHICAL DESCRIPTION

The Darby Plains, with an area of approximately 1000 sq km (385 sq miles), lie entirely within the glaciated Till Plains Section of the Central Lowland Province (Fenneman, 1938:455). These upland plains are about 16 to 48 km (10 to 30 miles) west and northwest of downtown Columbus, Ohio, primarily within the northern portion of the drainage basin of Big Darby Creek. Elevation generally ranges between 290 and 305 m (950 and 1000 ft) above mean sea level. The highest elevation of about 330 m (1080 ft) occurs near Mechanicsburg in the western section, whereas the lowest of about 232 m (760 ft) is located at the southeastern boundary near Orient along Big Darby Creek.

Big Darby Creek was originally called "Ollentangy" by the Indians according to W. M. Darlington (Smith, 1799, reprinted 1978:102). Prior to settlement, an old Wyandot Indian chief by the name of Darby (Converse, 1968:1) was living along this stream when United States surveyors were working in the area. Jonathan Alder stated that the surveyors named the stream in Darby's honor (O. E. Brown, 1965:71), and soon the surrounding region became popularly known as the Darby Plains.

Because of its popular origin and general use, the term "Darby Plains" has frequently been utilized to describe an area of imprecise dimensions. In the restricted sense, the name refers only to the interfluvium between Big Darby and Little Darby Creeks (Orton, 1878a:421). In other accounts, however, much of the gently rolling country between the Scioto, and the Great and Little Miami Rivers has been referred to as the Darby Plains (Sears, 1926:135; Transeau, 1981). As used in this paper, the Darby Plains are delineated in the following manner. The northern boundary is clearly defined by the generally distinct southern limits of the Powell Moraine in southern Union County. The western boundary is somewhat less well defined by the gradual slopes of the eastern limits of the Cable Moraine in extreme eastern Champaign County. The southern boundary is weakly defined by the northern limits of the low hummocky London Moraine across central Madison County, while the eastern boundary in western Franklin County is also weakly defined by the obscure drainage divide between the Scioto River and Big Darby Creek (Figs. 1 and 2).

GEOLOGICAL DEVELOPMENT

The Darby Plains are a nearly level to gently undulating glacial till plain which has been only slightly dissected by the major streams of the area: Big Darby Creek, Little Darby Creek, Spring Fork, Barron

Creek, Treacle Creek, Deer Creek, and Glade Run. Most relief other than that adjacent to these streams is gentle, between 1 to 4 m/km (5 to 20 ft/mile). The area in the vicinity of Plain City is one of the flattest in central Ohio (Norris, 1959:34). Indeed, the town's name, which was changed in 1877 from Pleasant Valley (Converse, 1968:8), is derived from this flat landscape.

Bedrock underlying most of the Darby Plains consists primarily of Upper Silurian dolomites of the Bass Islands Group with the Devonian Columbus Limestone on the eastern margins (Stauffer, et al., 1911; Foley, 1973:13-25). Bedrock is exposed in the Darby Plains at only a few localities: along both Big Darby and Little Darby Creeks near West Jefferson and Georgesville and along Barron Creek about 3 km (2 mi) east of Rosedale (Orton, 1878a:421, 1878b:600; Norris, 1959:26).

Generally, the bedrock is buried by glacial deposits of calcareous till interspersed with lenses of sand and gravel. These deposits range in thickness from about a meter to over 60 m (a few feet to over 200 ft) (Norris, 1959:34), but typical thicknesses over much of the area are 18 to 30 m (60 to 100 ft) (Jonathan C. Gerken, 1980, personal communication). Orton (1878a:422) early recognized this situation in his discussion of the geology of Madison County:

There is no region of the State in which the basement rock makes a more insignificant show or exerts less influence upon the present surface of the country. Even the details of the topography are seen to depend very largely on the modification of the drift surfaces and these details can, in many cases, be very well explained without any recourse to the underlying beds. All of the questions that concern the county, whether relating to its topography, its soils or its water-supply, connect themselves with the origin and history of the deep drift-deposits, by which its entire surface is now covered.

Most of the surficial glacial drift in the Darby Plains is Darby Till (Goldthwait, 1969), a Pleistocene ground moraine deposit of the Scioto Sublobe of the Erie Lobe of the Late Wisconsinian Glacier. This drift sheet, the Darby Till Plain, occupies a sizeable area of central Ohio extending considerably beyond the limits of the Darby Plains (Dreimanis and Goldthwait, 1973:92-93; see my Fig. 2).

Darby Till was produced during late Wisconsinian time or Woodfordian (Frye and Willman, 1960) in conjunction with a significant ice readvance in the Scioto Sublobe which, about 17,300 years ago, moved to the position of the Reesville Moraine (Teller, 1964:72-73; Dreimanis and Goldthwait, 1973). Goldthwait (1958, 1959) indicated that the till sheet was deposited primarily *under* advancing ice rather than by retreating ice. After development of the Reesville Moraine, relatively rapid retreat of the ice uncovered the Darby Till Plain. During this period of general ablation, minor halts or readvances constructed the Glendon, Esboro, Bloomingburg, and London Moraines and their corresponding elements within the Cable Moraine (Rosengreen, 1970:135; Quinn, 1972:29-30; see my Fig. 2). A few local shallow ponds developed on the deglaciated till plain surface (Goldthwait, 1952; La Rocque 1952), but evidence does not support the concept of a general postglacial "submergence" of the area as postulated by Orton (1878a:423-424) and interpreted by Sears (1926:133) as a "former extensive shallow lake upon the region occupied by the Darby Plains . . ." Rather, the characteristics of the sediments, the very flat topography of much of the Darby Plains, and radiocarbon dates from central Ohio indicate that retreat of the ice in that area of the Darby Till Plain was quite rapid, and that the glacial ice there during ablation was relatively clean and not heavily charged with sediments (Richard P. Goldthwait, 1980, personal communication).

This recession of the ice front occurred during the Erie Interstade (Dreimanis, 1958:81) and continued north of the Darby Plains into northern Ohio across the present Ohio River-Lake Erie drainage divide and well into the Erie Basin. There, large proglacial lakes were

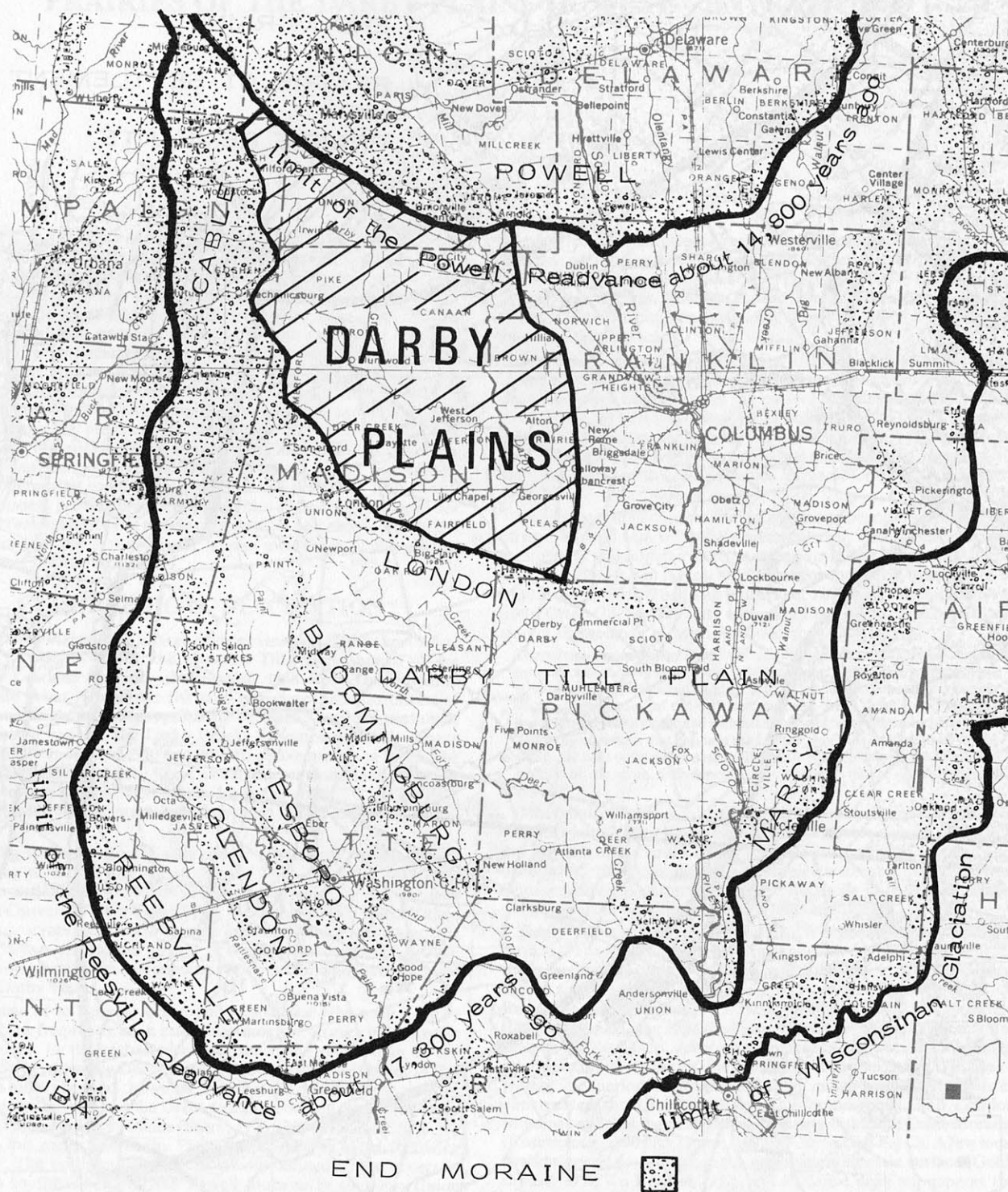


Fig. 2. Map showing relation of the Darby Plains in west-central Ohio to the Darby Till Plain and the end moraines of the Scioto Sublobe of the Erie Lobe of the Late Wisconsin Glacier. (Adapted from Teller, 1964:72-73; Goldthwait et al., 1967; Dreimanis and Goldthwait, 1973:88-95; and Möner and Dreimanis, 1973:120).

formed into which considerable amount of lacustrine clays were deposited. A subsequent readvance of the ice front incorporated much of this lacustrine material and deposited it southward as a distinctive clay-rich till sheet (Forsyth, 1965; Goldthwait, et al., 1965:88). The termination of this readvance resulted in the formation of much of the Powell Moraine about 14,800 years ago (Mörner and Dreimanis, 1973:120; see my Fig. 2).

The Powell Moraine not only provides a distinctly topographic boundary at the northern edge of the Darby Till Plain, but also, because of its different geologic history, displays a distinctly different type of surficial till than the Darby Till which occurs immediately south in the Darby Plains. As indicated by Steiger and Holowaychuk (1971), the till of the Darby Plains is generally a strongly calcareous silt loam with a CaCO_3 equivalent of 37.6 ± 7.1 percent, while the clay-rich till of the Powell Moraine, especially that west of Marysville, is a calcareous silty clay with a CaCO_3 equivalent of only 28.8 ± 2.8 percent. A comparison of the particle-size distribution in the two tills demonstrates clearly the enriched clay composition of the Powell Moraine west of Marysville (Steiger and Holowaychuk, 1971; see my Table 1).

SOILS

Substantial information regarding the soils of the Darby Plains is provided in the soil survey reports and photomaps as published for Champaign County (Ritchie et al., 1971), Franklin County (McLoda, 1977; McLoda et al., 1980), Madison County (Gerken and Scherzinger, 1979, 1981), and Union County (Waters and Matango, 1975). Darby Till has provided the parent material in which have developed since deglaciation, most of the upland soils of the Darby Plains, for example, Kokomo (here formerly Brookston), Crosby, Celina, Lewisburg, Miamian, Hennepin, and Odell series. In a few very local locations, shallow lacustrine deposits have provided the parent materials in which the Montgomery and Patton soils have developed. Alluvium and outwash-terrace deposits associated with the major streams of the area have provided the parent materials of Sloan, Eldean, Medway, Genessee, Fox, Lippincott, Warsaw, and several other series. These soils, however, associated with riparian plant communities in the area, are of only tangential interest to this study and will not be considered further here. By far, the predominant soils of the Darby Plains are the closely associated Kokomo and Crosby series.

The most extensive soil in the Darby Plains is Kokomo (here formerly Brookston) silty clay loam. This dark-colored Mollisol, suborder Aquoll, occurs on level to nearly level upland areas that are very poorly drained. The very dark gray surface layer possesses considerable organic matter, and when drained, the reaction of the deep root zone ranges from slightly acidic to mildly alkaline. This soil is the primary "prairie soil" of the Darby Plains for it supported most of the wet prairies in the area at the time of settlement (Gerken and Scherzinger, 1979:9).

Crosby silt loam is the second most extensive soil in the Darby Plains. It is an Alfisol, suborder Aqualf, and occurs on nearly level areas to gently sloping knolls that are drained only slightly more than are areas of Kokomo soils. The grayish-brown surface layer is considerably lighter in color than is that of Kokomo silty clay loam. When drained, the reaction of the moderately deep root zone ranges from strongly acidic to mildly alkaline. This soil supported mixed oak forest in the Darby Plains at the time of settlement (Gerken and Scherzinger, 1979:9).

As relief and drainage increase on knolls and ridges, one or more of three other Alfisols may be present: Celina silt loam, Lewisburg silt loam, and Miamian silt loam. The surface layer of these soils is generally brown, quiet in contrast to the darker, more poorly drained soils. Root zones are of varying depth, and reactions range from strongly acidic to mildly alkaline. These soils also supported mixed

oak forests at the time of settlement (Gerken and Scherzinger, 1979:9).

Also on the upland, in some low areas of poor drainage and limited size, one of three other Mollisols may be present: Odell silty clay loam, Patton silty clay loam, or Montgomery silty clay loam. The surface layer of these soils is dark gray or black. When drained, the reactions of the deep or moderately deep root zones range from medium acidic to moderately alkaline. Patton soils supported wet prairies (Gerken and Scherzinger, 1979:9), whereas Montgomery soils supported swamp forest at the time of settlement (McLoda, 1977:12). Odell soils developed under a mixed influence of both forest and grassland (Steiger, 1981).

DESCRIPTIONS OF THE LANDSCAPE AND VEGETATION

From 23,000 to 17,000 Years Ago

Existing vegetation in the area of the Darby Plains sometime between 23,000 and 17,000 years ago was annihilated by the advancing Late Wisconsin ice sheet of the Scioto Sublobe (Dreimanis and Goldthwait, 1973:90). As indicated primarily by samples of buried wood from elsewhere in Ohio, numerous living trees, mostly spruce, were overridden by the ice (Burns, 1958; Goldthwait, 1958). The forests were spotty, however, and were primarily in the valleys (Dreimanis and Goldthwait, 1973:90). This evidence suggests that at that time throughout central Ohio, including the Darby Plains, the vegetation in areas not covered by glacial ice was park tundra.

Tundra and park tundra were the periglacial vegetational types in central Ohio as the ice margin near the outer Wisconsin drift limit oscillated for several thousand years. Tundra consisted primarily of grasses and sedges, whereas park tundra included widely scattered spruce and fir trees. These vegetational types generally resembled extant tundra and park tundra in northern latitudes but were probably not identical to them. This interpretation is suggested by several pollen assemblages extracted from samples of peat and organic silts obtained from borings in northwestern Fayette County (Moos, 1970:19-23). These pollen assemblages were evaluated by J. Gordon Ogden as representing the most striking "high arctic" grouping of plants that he had seen from Ohio sediments. The two layers of peat, indicating bog and tundra environments, have been radiocarbon dated at $19,735 \pm 475$ and $17,340 \pm 390$ years ago. These peat bogs and organic silts were subsequently buried about 17,300 years ago by the Reesville readvance and the accompanying deposits of Darby Till.

From 17,000 Years Ago Until Presettlement Time (1750)

Published scientific records from the Darby Plains of postglacial vegetational patterns are limited to only one palynologic investigation (Sears and Clisby, 1952), and this study, associated with the excavation of the bones of the Orleton mastodon at a site about 3 km (2 miles) west of Plumwood in Madison County (Thomas, 1952), provides information for only a limited time period. Additional pollen studies from other sites in Ohio and the Great Lakes region, however, support a substantial, although sometimes contradictory, palynologic literature but from which a generalized interpretation of the postglacial vegetational history of the Darby Plains can be developed.

On the basis of pollen data from postglacial sediments in northern Ohio and elsewhere, Sears (1948) identified a sequence of five generalized phases which typify the region's postglacial vegetational history: cold humid conifer, xerophytic conifer, mesophytic deciduous and conifer, xerophytic deciduous, and mesophytic deciduous. Re-

Table 1. Comparison of particle size distribution in Darby Till in the Darby Plains and Powell Moraine Till west of Marysville, Ohio (Steiger and Holowaychuk, 1971).

	Sand (%)	Silt (%)	Clay (%)
Darby Till from the Darby Plains and London Moraine	33.5 \pm 5.9	46.0 \pm 4.0	20.5 \pm 3.1
Till from the Powell Moraine west of Marysville	16.6 \pm 5.9	40.7 \pm 7.3	42.7 \pm 4.8

searchers in Ohio have generally corroborated Sears' sequence (Williams, 1957, 1962; Burns, 1958; Goldthwait, 1958; Kapp and Gooding, 1964; Ogden, 1966; Garrison, 1967; Shane, 1975). Pollen samples from basal sections of postglacial sediments from lakes and bogs in Ohio regularly possess spruce and fir as the dominant pollen types. The presence of these pollens has generally been interpreted as indicating that these tree species initially invaded the recently deglaciated landscape and established boreal forests as the primary plant communities. Ogden (1966:398), however, reported "open ground initially in the vicinity" of Silver Lake, Logan County, and Shane (1976:3-16) using refined analytical procedures on samples from two sites in Darke County demonstrated the existence of an initial tundra and park tundra phase in the sequence. This revised sequence is in general agreement with the postglacial vegetational history reported for eastern North America (Davis, 1965, 1967; Wright 1971; Kapp, 1977; Delcourt and Delcourt, 1979), and an adaptation fitted to the Darby Plains is presented in Table 2.

By 16,000 years ago during the Erie Interstade, most, if not all the ice of the Reesville readvance had melted out of the Darby Plains. The local climate, however, remained quite severe for the next 2,000 years during which time the glacial readvance that constructed the Powell Moraine brought the ice front once again to the northern border of the Darby Plains. Open ground, arctic tundra, and park tundra with spruce and fir trees in the more protected sites typified the region (Shane, 1976:107-115). As the climate became somewhat less severe and the ice receded to the north for the final time, areas of spruce and fir became more numerous and extensive at the expense of the tundra communities.

By 14,000 years ago, glacial ice had permanently left Ohio (Forsyth, 1965:226), and spruce and fir forests were well established in the mid-Ohio latitudes (Kapp and Gooding, 1964; Ogden, 1966; Shane, 1976:108-109). These boreal forests, or variations of them, dominated the Darby Plains for several thousand years.

About 11,000 years ago, as the climate continued to become less severe, pines became the dominant species (Shane, 1976:118-122). This forest type survived in the area for about a thousand years as indicated by the pollen record obtained from the Orleton Mastodon site near Plumwood. Sears and Clisby (1952) inferred from a 20 cm-section of sediments from just beneath and within the bone-bearing stratum that the vegetation of the area had undergone "a shift from fir-spruce forest with some pine to a forest predominantly pine, with no fir, some spruce and some deciduous trees—principally oak and hickory." This shift was interpreted to indicate a change from a cool climate to one that was somewhat warmer and drier. Material

from the bone-bearing stratum has subsequently been radiocarbon dated at $9,600 \pm 500$ years ago (Goldthwait, 1958).

About 10,000 years ago as the climate continued to become warmer and more humid on the Darby Plains, spruce and fir were eliminated and pine nearly so, while a number of deciduous tree species were favored, especially oak, elm, and hickory. By approximately 8,000 years ago (Shane, 1976:123-125), the climate had become sufficiently warm and dry that many of the deciduous trees could not survive. For the next 4,000 years (Wright, 1968), these conditions prevailed or intensified. As discussed by Sears (1942b), this is the Xerothermic Period and it also represents the late postglacial prehistoric dry period described by Transeau (1935:435) when the Prairie Peninsula extended eastward into Ohio.¹ Although some of the species currently considered to be prairie species were probably present previously, prairie as a dominant plant community and those prairie species with western affinities most likely reached their maximum extent in the Darby Plains at this time.

Over the past 4,000 years since the Xerothermic Period, a cooler and more humid climate returned. These conditions generally favored the survival of deciduous tree species and certain herbaceous species and grasses with southeastern affinities (Gleason, 1923:84-85; Stuckey, 1981). Mixed oak forests gradually expanded into the prairies of the Darby Plains. Some western species were eliminated and some southeastern species invaded the prairies which survived the significant fluctuations in regional climate. Recurrent prairie fires, ignited either by lightning or Indians, tended to retard forest encroachment (Gleason, 1923:84-85), and as described by early historical accounts, prairies and open oak groves were quite extensive within the Darby Plains just prior to European settlement.

Presettlement Time (1750 to 1795)

In February 1751, Christopher Gist in the employ of the Ohio Company traveled through the region and recorded descriptions of the landscape in his journal. Although it is problematical whether he actually passed through the Darby Plains as defined here, he certainly was in the general area (Darlington, 1893:123). His journal provides the first written records of presettlement conditions in this part of Ohio (Darlington, 1893:47):

All the Way from the Shannoah Town [Portsmouth in Scioto County] to this Place [West Liberty in Logan County] (except the first 20 Miles or 48 km) which is broken [hilly] is fine, rich level Land, well timbered with large Walnut, Ash, Sugar Trees, Cherry trees, &c, it is well watered with a great Number of little Streams or Rivulets, and full of beautiful natural

¹ On the basis of pollen data from Silver Lake in Logan County, Ogden (1966) indicated that in central Ohio this period occurred later, about 3,600 to 1,300 years ago. The apparent conflict in dating the Xerothermic Period in Ohio is discussed by Wright (1968), but additional studies are necessary to resolve the discrepancy.

Table 2. Generalized phases of postglacial vegetational history in the uplands of the Darby Plains, Ohio. Based primarily on Sears (1948) with adaptations from Sears and Clisby (1952), Kapp and Gooding (1964), Ogden (1966, 1967), Davis (1967), Wright (1968), Shane (1976), and Kapp (1977).

	Name	Typical Vegetation as Indicated by Pollen Analysis and Extant Vegetation	Climate Characteristics	Approximate Years Before the Present
I	Arctic tundra and park-tundra	Sedges, grasses, bog and open country herbs and shrubs with widely scattered spruce and fir	Cold, arctic and subarctic	16,000-14,000
II	Cold humid conifer	Spruce and fir forests	Cold, moist	14,000-11,000
III	Xerophytic conifer	Pine and scattered pines with some oak, elm, and open country with grasses and sedges	Cool, dry	11,000-10,000
IV	Mesophytic deciduous	Mixed deciduous forests with elm, oak, hickory, walnut, and maple	Warming, moist	10,000-8,000
V	Xerophytic deciduous (the Xerothermic Period)	Extensive prairies with scattered oak and hickory groves and forests	Warming, dry	8,000-4,000
VI	Mesophytic deciduous	Mixed oak and hickory forests and groves interspersed with prairies	Cooling, moist	4,000 to present

Meadows, covered with wild Rye, blue Grass and Clover, and abounds with Turkeys, Deer, Elks and most Sorts of Game, particularly Buffaloes, thirty or forty of which are frequently seen feeding in one Meadow . . .

Possibly the first published account of prairies on the Darby Plains was presented by Col. James Smith who, in 1755 at the age of 18 had been captured by Indians in Pennsylvania. They carried him to the Ohio country and adopted him into one of their families. Before escaping in 1759, Smith (1799, reprinted 1978:114) recorded the following in his journal: "A considerable way up Ollentangy [Big Darby Creek] on the southwest side thereof, or betwixt it and the Miami, there is a very large prairie, and from this prairie down Ollentangy [Big Darby Creek] to Sciota [Scioto River] is generally first rate land." Smith (1799:107) also reported shooting a buffalo (bison) on a winter hunting trip in the vicinity of the Darby Plains.

The Darby Plains were frequently used for hunting expeditions by Indians. On the south bank of Big Darby Creek, about 3 km (2 miles) above Milford Center, was a favorite Indian camping ground which, after settlement, was known locally as the "Indian Fields" (Durant, 1883:289). Mansfield (1883:263) described a more permanent village:

The principal haunt of the red men before they were disturbed by the pioneers, was on the banks of Big Darby, just northwest from Plain City. They dwelt here in considerable numbers about the year 1800, in wigwams built of bark and covered with brush. Their chief subsistence was game, although the squaws cultivated small patches of corn.

Under the pressure of more settlers, hunting expeditions eventually ceased, and Indians had been forced from the area by 1820 (Brown, 1883:249-251).

The first white settler in the Darby Plains was Jonathan Alder, for whom the local school district in the Plain City area is currently named. As an eight-year-old boy in Virginia, he had been captured by Indians in 1782, and as with James Smith earlier, he was carried to the Ohio country and adopted into an Indian family. Alder became completely integrated into the Indian (Mingo) way-of-life and learned much about large portions of Ohio. Shortly after the signing of the Treaty of Green Ville in 1795 (which, except for hunting and fishing privileges, required all Indians to move to northern Ohio), Alder married a squaw and built a cabin near the present site of Plain City. He related this event as follows (Davison, 1935:44):

As soon as that treaty was confirmed and made, I concluded my arrangements with Barshaw and we was finally married according to the Indian custom and we immediately began to prepare and arrange our business to move to Darby as this was the greatest and best hunting ground of the whole Indian territory.

Alder also related an earlier hunting experience in the Darby Plains (Davison, 1935:55):

I went out one day, that was before peace was made [Treaty of Green Ville, 1795] whilst I was staying on the Darby Plains before there was any whites here, to make a ring fire and capture a few deer that way. The grass was very nice and dry for burning. I went out two or three miles [3.2 or 4.8 km] southwest from Pleasant Valley [Plain City] and commenced my fire. I cut some of the long grass and made a torch and set it afire and then ran with it and I circled round and took in three or four thousand acres [1200 or 1600 ha] and then got inside of my ring and it soon made a fine fire all around and I very soon saw deer running from one side to the other. And in my ring I killed seven deer. When I would kill one, I dragged it into a thicket where there was no grass and scrapped the leaves away so as not to have the hide injured by fire. But at last the fire began to close in onto me and it burned very rapid. I could see no good place of escape. I looked me out a good piece of ground where there was no brush and when the fire began to get pretty warm, I put my powder horn under my arms and fired off my gun then leaped. I had wrapped my blanket tight around me—head and face all covered. I could not see a particle; I was perfectly blindfolded. I turned my face in the direction that I wanted to run before I covered it. The fire was then a perfect blaze, ten or fifteen feet [3 or 4 m] high, and I started and ran through it. The main blaze was not more than thirty or forty feet [9 or 12 m] wide, but I ran about two hundred yards [180 m] before I was uncovered. I was out of the main fire, but it was still burning—I had to run farther to get entirely out of the fire on account of my powder horn. My moccasins was entirely ruined and my leggings and blanket was nearly spoiled. I then hunted up the deer and skinned them. Some of them had their hair pretty well singed off, but the hides were not injured—But that was my last ring fire.

Eventually Barshaw returned to her family in the Upper Sandusky reservation, and in 1805 Alder returned to his in Virginia. There he married a Virginian but soon came back with his family to live in the Darby Plains because he was much impressed with the beauty of the region. A cabin that Jonathan Alder built in 1806 still exists. It has been restored by the Madison County Historical Society and relocated on the Plain City-Georgesville Road (Madison County Route 7)

about 1 km (0.6 mile) north of the intersection of Interstate 70 on a site adjacent to Foster Chapel Cemetery where he was buried in 1849.

From the Time of Settlement (1795) to the Present

General Accounts

European settlers quickly moved into the area after the Treaty of Greene Ville was signed in 1795. They generally located along the streams where the land was more elevated and drier, and where the best timber grew. Mosquitoes, however, were extremely abundant and as reported by Durant (1883:281): "the fever and ague [malaria] prevailed so generally in the fall seasons as to totally discourage many of the settlers."

The first settlers referred to the wet prairies as "barrens" and considered them entirely unfit for agriculture except for pasture (Brown, 1883:341). Atwater (1827), after considerable study, rejected the term "barrens" for these lushly vegetated landscapes, and Holder (1883:162), in his history of Union Township in Union County, reported:

. . . the central and southern portion [of Union Township] are a part of the celebrated "Darby Plains," noted for their level surface and deep, rich soil consisting of black vegetable mold. Originally, as the first settlers found these plains, they consisted of prairie and oak openings, the former covered with an exuberance of grass, which in some portions grew to an enormous height; some of the settlers testifying that, as they rode through it on horseback, they could grasp a handful on each side of the horse, and tie them together over the rider's head.

Mansfield (1883:218) stated that the small patches of timber on the plains in Darby Township, Union County, consisted primarily of bur oak and hickory. Bur oak, according to Dobbins (1937:68) was the first tree to become established in the wet prairies, and it commonly occurred as an individual tree or in groves. Mansfield (1883:218) also reported clusters of hazel bushes in addition to thickets of wild plum trees which produced "a luscious variety of fruit." As indicated by John A. Littler (1980, personal communication), a longtime resident, Plumwood in Madison County probably was named for the many wild plum trees which formerly grew in the area.

Gowey (1881:561) described the portion of the Darby Plains in Champaign County:

In the early history of the country, the southern part [of Rush Township] was covered by a dense growth of prairie grass, interspersed here and there with swamps covered with a profusion of rush . . . in the southern portions is mostly oak with here and there a shellbark hickory.

Dr. Jeremiah Converse, a physician of Plain City and an 1848 graduate of Starling Medical College in Columbus, Ohio, described the prairies of Madison County (Brown, 1883:341-342) in this manner:

This whole country was a sea of wild grass, and flowering herbs. . . There were many other varieties that grew upon the prairie besides those that were found skirting, and in the oak-openings; such as the daisies, buttercups, wild pink, coxcomb, lilies and many others equally beautiful. It was, indeed, a grand sight to a nature-loving mind, to look over these extensive prairie fields and behold them mantled with so luxuriant a growth of vegetation and decorated so lavishly with an almost endless variety of flowers, variegated with all the colors of the rainbow . . .

Nearly every spring or autumn, prairie fires swept over the Darby Plains. These fires were vividly described by Dr. Converse (Brown, 1883:341):

It was majestically grand to see these prairies on fire, fifty years ago! The blaze of the burning grass seemed to reach the very clouds; or, when driven by a fierce wind, would leap forty or fifty feet [12 or 15 m] in advance of the base of the fire. Then add to all this a line of the devouring element three miles [4.8 km] in length, mounting upward and leaping madly forward with lapping tongue, as if it were trying to devour the very earth, and you have a faint idea of some of the scenes that were witnessed by the early settlers of this country.

As more settlers moved into the area, they tended to control the wild fires out of fear of burning their crops and buildings. Within a few years, the luxurious growths of grass accumulated and became a "wet thick mass of decay" (Mansfield, 1883:231). During 1822 and 1823, a great epidemic (probably malaria) swept the area and made sad inroads on the human population of the sparsely settled Darby Plains. According to Dr. Converse (Mansfield, 1883:228-231):

There was scarcely a family but what had its sick or dying . . . All business transactions ceased, gloom brooded over the minds of the people and many a stout heart was made to tremble over the impending doom . . .

There were a few instances where the father was compelled to construct the rude coffin, dig the grave and deposit beneath the clods of the valley the loved form of his child. The territory invaded by this epidemic extended from a short distance east of Big Darby to perhaps the same distance west of Little Darby.

The epidemic was generally believed to have occurred "because of failure to burn out the sedge" (Ohio Historical Records Survey Project, 1941:4) and the resulting decomposition of the vegetable matter. Another deadly disease in the area was milk sickness. It developed when cattle ate white snakeroot (*Eupatorium rugosum*) and people subsequently used the milk. Milk sickness was reputed to have been responsible for nearly one-fourth of the deaths of the early settlers in Madison County (Moseley, 1941:7). Increasing agricultural use and drainage of many of the wet prairie sites soon followed and no other outbreaks of either disease developed in the area (Lauferweiler, 1960:47).

The settlers extensively pastured the wet prairies. Efforts to drain them, however, soon began, and as reported by Orton (1878a:426): "As soon as the surface water is withdrawn . . . *Poa pratense*, or Kentucky Bluegrass, comes in to displace the wild grasses that have occupied the ground hitherto, and it comes to stay." The transformation of much of the wet prairie to blue grass pastures was so successful that, by the middle of the nineteenth century, London, Ohio, had become a nationally recognized center for the shorthorn cattle industry (Ohio Historical Records Survey Project, 1941:5).

Further draining the wet fertile soils, however, and planting them to corn and wheat provided for even greater levels of agricultural production (Holder, 1883:162). Orton (1878a:425) accurately observed: "Madison county is found to be one of the finest agricultural districts of the State. There is scarcely [sic] a foot of waste land in it and most of it, if not already highly productive, is easily susceptible of being made so." Private and public enterprise, assisted by drainage laws passed by the Ohio Legislature, accelerated the drainage projects and gradually changed the face of the landscape (Brown, 1883:342).

Katharine D. Sharp of London, Ohio, studied and appreciated the local flora around the turn of the twentieth century. She was the wife of a local physician and expressed her apparent mixed emotions about these changes in the landscape when she wrote (Sharp, 1913:20): "But bogs [wet prairies] are growing fewer yearly in Madison County, owing to the network of tiling in the low fields and meadows. That way lies health and wealth." These prairie lands still rank as the most productive for agriculture in the area (Lauferweiler, 1960:64) and the Darby Plains have some of the best farm lands in the state.

Floristic Accounts

The prairie plants of west-central Ohio, including those of the Darby Plains, were observed, described, collected, and recorded by several Ohio naturalists throughout the nineteenth century. These workers included Caleb Atwater (1818, 1827, 1828), John L. Riddell (1834, 1835, 1836), Johnathan R. Paddock, William Starling Sullivan (1840, 1842), Leo Lesquereux, William Ashbrook Kellerman and William C. Werner (1893), and Katharine D. Sharp (1913).

Possibly the first herbarium specimens of plants from the Darby Plains were those collected by John L. Riddell while he was teaching at the Reformed Medical College in Worthington, Ohio, from 1832 to 1834. Because he sold many of his specimens, much of his herbarium has been destroyed or widely scattered (Stuckey, 1978:273). However, Riddell (1835) identified many Ohio prairie plants in his *Synopsis of the Flora of the Western States* in which he reported ten taxa (as listed below) occurring specifically in prairies on the Darby Plains. In 1836, he added another taxon (indicated by an asterisk) in *A Supplementary Catalogue of Ohio Plants* (Riddell, 1836). Although Riddell's use of the term "Darby Plains" was not geographically precise, and although the modern taxonomic equivalents of some of his taxa are uncertain in the absence of voucher specimens, he provided the basis for the initial scientific listing of prairie species for this area. Riddell's names when different from the species of Fernald (1950) are in parentheses:

<i>Cassia fasciculata</i> (<i>C. chamaecristata</i>)	Partridge-pea
<i>Eryngium yuccifolium</i> (<i>E. aquaticum</i>)	Rattlesnake-master
<i>Helianthus laetiflorus</i> var. <i>rigidus</i> (<i>H. scaberrimus</i>)	Showy sunflower
<i>Lespedeza violacea</i> (<i>L. divergens</i>)	Bush-clover
<i>Populus heterophylla</i>	Swamp cottonwood

<i>Silphium laciniatum</i>	Compass-plant
<i>Silphium laciniatum</i> (<i>S. gumniferum</i>)	Compass-plant
<i>Silphium terebinthinaceum</i>	Prairie dock
<i>Silphium terebinthinaceum</i> (<i>S. pinnatifidum</i>)	Pinnatifid prairie dock
* <i>Stenanthium gramineum</i> (<i>Veratrum angustifolium</i>)	Featherbells
<i>Vernonia fasciculata</i> var. <i>corymbosa</i> (<i>V. corymbosa</i>)	Western ironweed

Of these eleven taxa, the author is aware of extant populations in the Darby Plains of only three: *Cassia fasciculata*, and the typical and pinnatifid forms of *Silphium terebinthinaceum* (Table 4).

Undoubtedly, additional prairie species of the Darby Plains were included in Riddell's *Synopsis*, but their specific distribution is masked by such annotations as "borders of prairies," "grassy prairies," "wet prairies," and "Central Ohio." He specifically annotated eight additional species as occurring in the Darby Plains:

<i>Hypericum</i> sp. (<i>H. densiflorum</i>)	Indeterminable species
<i>Hypericum</i> sp. (<i>H. galioides</i>)	Indeterminable species
<i>Lilium philadelphicum</i>	Wood lily
<i>Lonicera prolifera</i> (<i>L. flava</i>)	Grape honeysuckle
<i>Polygonum hydropiperoides</i> (<i>P. mite</i>)	Mild water-pepper
<i>Quercus stellata</i> (<i>Q. obtusiloba</i>)	Post oak
<i>Ranunculus flabellaris</i> (<i>R. lacustris</i>)	Yellow water crowfoot
<i>Sparganium chlorocarpum</i> (<i>S. angustifolium</i>)	Green-fruited bur-reed

Johnathan R. Paddock was a colleague of Riddell at the Reformed Medical College, and he also assembled a collection of central Ohio plants (Stuckey, 1978:273). In contrast to that of Riddell, Paddock's herbarium remained intact, and in 1919 it was acquired by the Herbarium, University of Illinois, Urbana (Anonymous, 1920), into which it has now been integrated. Specimens of ten species (as listed below) which were collected from the Darby Plains have been recorded from Paddock's herbarium (Stuckey and Roberts, In preparation). One specimen (as indicated by an asterisk) was collected from Big Darby Creek. Species names are from Fernald (1950) with Paddock's names and year of collection, when known, in parentheses:

<i>Baptisia leucantha</i> (<i>B. alba</i>)	White false indigo
* <i>Ceratophyllum demersum</i> (<i>Myriophyllum</i> , 1833)	Hornwort
<i>Cuscuta gronovii</i> (<i>Cuscuta</i> , 1839)	Gronovius' dodder
<i>Desmodium canadense</i> (<i>Hedysarum canadense</i> , 1833)	Showy tick-trefoil
<i>Desmodium cuspidatum</i> (<i>Hedysarum bracteosum</i> , 1833)	Large-bracted tick-trefoil
<i>Gentiana puberula</i> (<i>G. Catesbii</i> , 1837)	Downy gentian
<i>Nuphar advena</i> (<i>N. sagittifolia</i> , 1839)	Yellow pond lily
<i>Polygala senega</i> (<i>P. senega</i> , 1835)	Seneca snakeroot
<i>Quercus macrocarpa</i> (<i>Q. obtusiloba</i>)	Bur oak
<i>Silene regia</i> (<i>S. regia</i> , 1835)	Royal catchfly

These valuable specimens from Paddock's herbarium probably are the oldest existing specimens from the Darby Plains.

Surprisingly, Riddell and Paddock experienced some confusion with their different uses of the name "*Quercus obtusiloba*." Riddell's "*Q. obtusiloba*" is definitely *Q. stellata* (post oak) as interpreted from his annotations for the species (Riddell, 1835:354). Paddock's "*Q. obtusiloba*" is definitely *Q. macrocarpa* (bur oak) as determined from his herbarium specimen (Stuckey and Roberts, In preparation; Almut G. Jones, 1980, personal communication). Both species are still present in the Darby Plains as discussed below.

William S. Sullivan, a son of the founder of Columbus, Ohio, was a successful businessman who became interested in botany (Rodgers, 1940). In his travels in the Darby Plains about 24 km (15 mi) west of Columbus in the late 1830's and early 1840's, Sullivan obtained three very rare taxa that have not been seen there since. Two of these species were named and described as new to science: flat-stemmed spike rush, *Eleocharis compressus*, by Sullivan (1842; Braun, 1967:191); and a sunflower, *Helianthus cinereus* var. *sullivantii* by Torrey and Gray (1843). The latter has been determined to belong to the hybrid, *H. x cinereus*, as discussed by Heiser et al. (1966:208). The third is a carrot-like species, *Perideridia americana* (*Eulophus americanus*), which Sullivan noted on a specimen mount at the Gray Herbarium, Harvard University, as "always in dry meadows 1/2 to 1 mile [0.8 to 1.6 km] west of Lafayette Madison Co."

Sullivant also collected "Near Columbus, Ohio," the specimen from which the species Sullivant's milkweed (*Asclepias sullivantii*) was named (Gray, 1848:367). "Near Columbus, Ohio," likely could have been in the Darby Plains as Sullivant usually did not record on his specimen labels the actual location where he obtained the specimen (Stuckey, 1974).

Sullivant, Leo Lesquereux, a close botanical associate of Sullivant, and William A. Kellerman, a botanist at The Ohio State University, were poetically entwined with the Darby Plains in a verse written by Katharine D. Sharp (1913:133-134):

***Helianthus kellermanii*.**

When August beams with sultry rays
Along luxuriant country ways,
When verdure droops and brooks are dry,
Rejoicing in the summer sky,
The *Helianthus* opes her gold,
Her gorgeous beauties all unfold,
And to her lord, the blazing sun,
She lifts her bright eyes, one by one.

On Darby's plains and to the west
The prairie decks her bounteous breast
With many a flower of varied hue;
And here our Sullivant and Lesquereux,
Earliest among the pioneers,
Unchecked by solitude or fears
Of deadly, lurking, savage foe,
Into these wilds devoutly go
And on this wealth of nature pore
With zeal of scientific lore.

Along Scioto's plains, I wist,
Ohio's later botanist
Has crowned his wanderings aestival,
His part in nature's festival
By blending in discovery's thought
His name with *Helianthus* wrought.

Oft as the boscage wild I scour
I long to hap upon some flower
By page botanical unkennd,
Whereto my name I may append,
As here along the summer lea
I find the *Sullivantii*,
Or that *giganteum*'s form obscure
Which *Kellermanii* shall endure.
But, ah! no flower unknown thus far
Has crowned my vision like a star.
Yet happy fate it were for me
To rear some flower of Poësy.

O Muse, to whom the power belongs,
Inspirer of our sylvan songs,
Grant to this verse one touch divine
To link those gracious names with mine!
August 21, 1899.

Limited plant collecting continued in the Ohio prairies west of Columbus in the twentieth century, and the resulting herbarium records added to the expanding information base regarding the distribution of Ohio flora as reported primarily by Schaffner (1932) and Braun (1961, 1967). Sears (1926) using the annotations of Riddell (1835), as referred to above, developed reconstructed species lists for treeless areas throughout Ohio. Other species lists have been published for Ohio prairie plants including those collected from, but not necessarily limited to the wet prairies of west-central Ohio: Dobbins (1937:124-127), Jones (1944), Gordon (1969:58-59), and Troutman (Cusick and Troutman, 1978:49-55). A fragmentary species list of the flora of the Madison County area was presented by Sharp (1913:33-35). Among rare and endangered wetland species, Stuckey and Roberts (1977) recorded five species for Madison County: lake cress, *Armoracia aquatica*; lesser prickly sedge, *Carex sterilis*; flat-stemmed spike

rush, *Eleocharis compressus*; inland rush, *Juncus interior*; and marsh arrow-grass, *Triglochin palustre*. A complete checklist of plant species collected from the Darby Plains is not available, but a list of vascular plant species with Ohio prairie affinities as suggested by Troutman (Cusick and Troutman, 1978:52-55) having extant populations within the Darby Plains is presented in Table 4.

Floristic and ecological research on the prairies of west-central Ohio, and indeed on the original vegetation of the entire state, developed in the 1920's with the appearance of papers by Sears (1925, 1926) and the initiation of the Ohio Vegetation Survey under the direction of Edgar N. Transeau, the Department of Botany, The Ohio State University (Gordon, 1969:2-5, 1981; Stuckey, 1981). Transeau had been studying (Transeau, 1981) and mapping original prairies in the area for some time while preparing the map of the Prairie Peninsula in his classic paper (Transeau, 1935), but the most detailed mapping of original prairies in the Darby Plains and adjacent areas was done by one of his students, Raymond A. Dobbins.

Dobbins mapped the primary vegetational types on a block of twenty 15' United States Geological Survey topographic maps of west-central Ohio. These vegetational maps were never published as such, but they formed the basis for the several vegetational maps in his dissertation (Dobbins, 1937). Of special interest to this paper is his prairie map (p. 113 and 114) which has provided the information from which the original prairies of the Darby Plains have been mapped in Fig. 1. Gordon (1966) also relied heavily upon Dobbins' data for the west-central portion of his map of the natural vegetation of Ohio. Dobbins used various sources of information, including original land surveys, local histories, soils data, extensive field surveys, and word-of-mouth records from elderly residents who were well acquainted with the area. These original topographic maps of Dobbins are currently preserved in the archives of the Ohio Biological Survey.

By the mid-1930's, Dobbins (1937:117) reported that prairie remnants which contained characteristic plants were scarce and fragmentary. Although he did not identify specific sites, Dobbins indicated that some of the best prairie remnants in his study area were in the Darby Plains in southern Union County and northern Madison County near Plain City and in north-central Madison County near Plumwood.

Thomas (1932) reported the presence of prairie vegetation along roadsides west of West Jefferson. He also mapped prairie remnants stretching for miles along roads in Madison County where not a single prairie plant exists today (Thomas, 1980).

EXISTING PRAIRIE REMNANTS

Sites Previously Known to the Scientific Community

The scientific community in Ohio, for the past several decades, has been aware of only two prairie remnants in the Darby Plains. One is in a metropolitan park and the other is a pioneer cemetery (Thomas, 1963).

Battelle-Darby Creek Metropolitan Park Bluff Prairie

This 1.6 ha (4 acre) dry prairie occupies a narrow strip on the east bank of Big Darby Creek between the stream and hilltop in Battelle-Darby Creek Metropolitan Park about 1 km (0.6 mile) northeast of Georgesville in western Franklin County (Cusick and Troutman, 1978:20; Stahl, 1978; see my Table 3, Fig. 1). Big Darby Creek continually erodes the base of this hill of glacial till which causes the hillside to be heavily eroded. The well-drained soils at this site have been mapped as eroded Hennessee and Miamian loams on 25 to 50 percent slopes (McLoda et al. 1980:photomap 49). The area was purchased for a park on 5 October 1962 by the Columbus and Franklin County Metropolitan Park District.

The prairie vegetation occurs in scattered small clumps on the heavily eroded bluff. Although grasses are well represented, the diversity of forbs provide "the spectacular aspect of this small prairie" (Stahl, 1978). A total of 50 species of prairie plants has been recognized of which five are known from no other station within the Darby Plains (Table 4): ground nut (*Apocynum americanum*), Canadian milkvetch (*Astragalus canadensis*), purple-headed sneezeweed

Table 3. Known sites of significant prairie remnants in the Darby Plains in west-central Ohio. Numbers identify sites in Figure 1 and Table 4. All sites except 1 and 2 were discovered from 1976-1981 in cooperation with the Prairie Survey Project of the Ohio Biological Survey.

	County-Township	Location	Ohio Prairie Plant Taxa Recorded**	Remarks	References
1. Battelle-Darby Creek Metropolitan Park Bluff Prairie	Franklin-Pleasant	1 km NE of Georgesville on E bank of Big Darby Creek in park.	50	Dry prairie on heavily eroded bluffs. Good display of forbs including purple coneflower, wild bergamot, and blazing star.	Cusick & Troutman, 1978:20; Stahl, 1978; see this paper
1a. Prairie Reconstruction	Franklin-Pleasant	Off road W of Georgesville-Plain City Rd (Co 281), 1 km NW of Georgesville.	—	Reconstructed prairie, started in 1975 using local and non-local ecotypes. Park property.	None
1b. Prairie Reconstruction	Franklin-Pleasant	0.5 km S of Georgesville, E of Georgesville-Wrightsville Rd (Co 139).	—	Reconstructed prairie, started 1980 by Jack H. McDowell, using only local ecotypes. Park property.	McCutcheon, 1980
2. Bigelow Cemetery State Nature Preserve	Madison-Pike	On Rosedale (Weaver) Rd (Co 25 in Madison County & Co 56 in Union County) 0.4 km S of jct with Ohio Rt 161, 2.3 km W of jct Ohio Rt 161 & Ohio Rt 38 at Chuckery.	29	Formerly known as Chuckery or Boerger Cemetery. Graves date to 1814. Good forbs including purple coneflower, royal catchfly, stiff goldenrod, and whorled rosinweed.	Cusick & Troutman, 1978:30; Carr, 1981; King, 1981; Overton, 1981; see this paper
3. Bradley Cemetery	Madison-Monroe	2 km SE of Plumwood, 0.8 km W of Lafayette-Plain City Rd (Co 5).	9	Well-drained site with purple coneflower, butterfly-weed, and flowering spurge. Surrounded by private property.	Cusick & Troutman, 1978:30
4. Dayton Power & Light Co. Right-of-way at Van Ness Road	Champaign-Goshen	Along Van Ness Rd (Twp 243) 1 km E of jct Ohio Rt 4.	6	Disturbed right-of-way, a continuation of the one at Milford Center Prairie, which see. Private property.	Cusick & Troutman, 1978:13
5. Debolt Road Roadside	Madison-Darby & Union-Darby	Along Debolt Rd (Twp 129 in Madison County & Twp 54 in Union County) just S of jct Ohio Rt 161.	6	Big bluestem sod.	Cusick & Troutman, 1978:42
6. Garrette Site	Madison-Jefferson	0.8 km NE of West Jefferson on either side of railroad on E bank of Little Darby Creek.	17	Abundant butterfly-weed, short green milkweed, and partridge pea. Discovered by Jack H. McDowell. Private property.	None
7. Georgesville Railroad Site	Franklin-Pleasant	1.5 km W of Georgesville along railroad either side of intersection with Alkire Rd (Co 11).	20	About 0.4 km of railroad right-of-way mostly W of intersection with Alkire Rd. Discovered by Jack H. McDowell.	None

Table 3. (cont.) Known sites of significant prairie remnants in the Darby Plains in west-central Ohio. Numbers identify sites in Figure 1 and Table 4. All sites except 1 and 2 were discovered from 1976-1981 in cooperation with the Prairie Survey Project of the Ohio Biological Survey.

		County-Township	Location	Ohio Prairie Plant Taxa Recorded**	Remarks	References
8.	Graessle Road Bluff Site	Franklin-Pleasant	2.0 km W of Darbydale on E side of Graessle Rd (Twp 285) and unnamed stream, 0.2 km S of Ohio Rt 665.	27	Habitat and species similar to Battelle-Darby Creek Metropolitan Park Bluff Prairie. Abundant New Jersey tea and stiff gentian. Discovered by Jack H. McDowell. On Big Darby Wildlife Area managed by Ohio Division of Wildlife.	None
9.	Lilly Chapel Site	Madison-Fairfield	3.5 km W of Lilly Chapel & 0.5 km S of Lilly Chapel-Georgesville Rd (Co 102).	3	Sullivant's milkweed is common. Owners claim land was never plowed, but used as hog pasture. Private property.	Cusick & Troutman, 1978:30
10.	Martin Cemetery	Champaign-Rush	120 m N of jct Lincoln Rd (Twp 209) & Martin Rd (Twp 210), 1.8 km N of Woodstock.	1	Unmowed cemetery. Vigorous population of royal catchfly. Surrounded by private property.	King, 1981
11.	McMahill Road Roadside	Champaign-Rush	Along Twp 206 immediately S of jct U.S. Rt 36.	1	Big bluestem sod.	Cusick & Troutman, 1978:12
12.	Milford Center Prairie	Union-Union	3 km SW of Milford Center on Dayton Power & Light Co. Right-of-way primarily between Connor Rd (Co 81) & Ohio Rt 4.	57	Largest assemblage of prairie plants located thus far in Darby Plains. See description in this paper. Private property.	Cusick & Troutman, 1978:42; see this paper
13.	Ohio Rt 38 Roadside	Madison-Deer Creek	Along Ohio Rt 38 for 3 km immediately S of jct Ohio Rt 29.	5	Intermittant stands of prairie grasses.	None
14.	Phellis Cemetery	Madison-Pike	0.6 km E of Rosedale (Weaver) Rd (Co 25) on N side of Barron Creek, 1.7 km NE of Rosedale.	1	Sullivant's milkweed has survived pasturing. Surrounded by private property.	Cusick & Troutman, 1978:31
15.	Pinnatifid Prairie Dock Site	Madison-Jefferson	On NE-facing slope 0.2 km SW of U.S. Rt 42 bridge at Little Darby Creek.	4	An exceptional stand of a pinnatifid-leaved form of prairie dock. Plowed in 1981. Private property.	Fisher, 1966; Cusick & Troutman, 1978:31; see this paper
16.	Railroad Right-of-way Between Plain City and Unionville Center	Union-Darby	Along railroad tracks between Co 57 & Co 55.	12	A highly disturbed area with typical and pinnatifid-leaved forms of prairie dock. Railroad property.	Cusick & Troutman, 1978:43
17.	Railroad Right-of-way Between West Jefferson and London Including Plymell Cemetery	Madison-Jefferson, Deer Creek, & Union	Along railroad tracks for about 12.5 km between West Jefferson and London.	45	A highly disturbed area with intermittent, but sizeable populations of prairie plants. Discovered by Jack H. McDowell. Railroad property.	See this paper

Table 3. (cont.) Known sites of significant prairie remnants in the Darby Plains in west-central Ohio. Numbers identify sites in Figure 1 and Table 4. All sites except 1 and 2 were discovered from 1976-1981 in cooperation with the Prairie Survey Project of the Ohio Biological Survey.

		County-Township	Location	Ohio Prairie Plant Taxa Recorded**	Remarks	References
18.	Scheiderer Road at Railroad	Union-Darby	Along railroad at intersection with Co 44, 2 km W of Unionville Center.	15	Tall coreopsis, prairie dock and Sullivant's milkweed. Railroad property.	Cusick & Troutman, 1978:43
19.	Silver-Forrest Site	Madison-Jefferson	1.5 km N of jct US Rt 40 and Ohio Rt 29.	34	Scattered openings and edges on upland S of Little Darby Creek. Arrow-leaved violet, round-headed bush clover, pinnatifid prairie dock, and prairie dropseed. Discovered by Jack H. McDowell. Private property.	See this paper
20.	Smith Cemetery	Madison-Darby	N of Boyd Rd (Co 42), 0.8 km W of jct with Converse Chapel Rd (Co 41), 5 km W of Plain City.	30	Occasionally mowed but not manicured. Purple coneflower, stiff goldenrod, white wild indigo, big bluestem, little bluestem, purple milkweed, gray willow. Private property.	See this paper
21.	Township Road 403	Champaign-Rush	Between U.S. Rt 36 & McMahl Rd (Twp 206) at Union-Champaign County Line.	2	Abandoned roadway with big bluestem, cord grass, and 13-lined ground squirrels.	Cusick & Troutman 1978:12
22.	W. Pearl King Prairie Grove	Madison-Monroe	West side of jct Mechanicsburg-Sanford Rd (Co 27) and David Brown Rd (Co 119).	18	Excellent prairie grasses including rare prairie dropseed in mixed oak grove. Private property.	Thomas, 1980, 19 Oct; see this paper
23.	Wilson Road at Railroad	Madison-Fairfield	Along railroad tracks at intersection with Wilson Rd (Co 103)	18	Disturbed area along abandoned railroad. Discovered by Jack H. McDowell.	None

**As suggested by Troutman (Cusick and Troutman, 1978:49-55).

Table 4. Alphabetical list of 96 vascular plant taxa with Ohio prairie affinities (as suggested by Troutman in Cusick and Troutman, 1978:52-55) which have extant populations (or recent records as indicated) at sites of significant prairie remnants in the Darby Plains of west-central Ohio. Sites are described briefly in Table 3 and located in Figure 1. Scientific names are primarily from Fernald (1950).

		Battle-Darby Creek Metropolitan Park Bluff Prairie ²	Bigelow Cemetery State Nature Preserve ³	Bradley Cemetery	Dayton Power & Light Co. Right-of-way at Van Ness Road	Debolt Road Roadside	Garrette Site ⁷	Georgesville Railroad Site ⁷	Graessle Road Bluff Site ⁷	Lilly Chapel Site	Martin Cemetery	McMahill Road Roadside	Milford Center Prairie	Ohio Rt. 38 Roadside	Phellis Cemetery	Pinnatid Prairie Dock Site	Railroad Right-of-way Between Plain City and Unionville Center	Railroad Right-of-way Between West Jefferson and London Including Plymell Cemetery ⁷	Schneider Road at Railroad	Silver-Forrest Site	Smith Cemetery	Township Road 403	W. Pearl King Prairie Grove	Wilson Road at Railroad ⁷
Identifying number on Table 3 and Fig. 1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total taxa with prairie affinities		50	29	9	6	6	17	20	27	3	1	1	57	5	1	4	12	45	15	34	30	2	18	18
<i>Allium canadense</i>	Wild garlic	x							x									x			x			
<i>A. cernuum</i>	Nodding onion	x					x		x				x					x						
<i>Andropogon gerardii</i>	Big bluestem	x	x	x	x	x		x	x	x		x	x	x			x	x	x	x	x	x	x	x
<i>A. scoparius</i>	Little bluestem	x			x			x	x								x	x		x			x	x
<i>Anemone canadensis</i>	Canadian anemone	x	x	x			x	x	x				x					x		x				x
<i>Antennaria plantaginifolia</i>	Plaintain-leaved everlasting	x							x										x					
<i>Apios americana</i>	Ground nut	x																						
<i>Asclepias purpurascens</i>	Purple milkweed																				x			
<i>A. sullivantii</i>	Sullivant's milkweed	x ⁶				x	x			x					x			x	x	x				x
<i>A. tuberosa</i>	Butterfly-weed	x		x			x	x	x				x					x		x				x
<i>A. verticillata</i>	Whorled Milkweed	x ⁶																						
<i>A. viridiflora</i>	Short green milkweed	x					x												x					
<i>Aster laevis</i>	Smooth aster																			x				
<i>A. novae-angliae</i>	New England aster	x			x								x			x	x	x					x	
<i>Astragalus canadensis</i>	Canadian milkvetch	x																						
<i>Baptisia leucantha</i>	White wild indigo																	x		x				
<i>Blephilia ciliata</i>	Downy wood mint	x																		x				
<i>Cacalia tuberosa</i>	Tuberous Indian-plantain	x							x															
<i>Camassia scilloides</i>	Wild hyacinth	x											x											
<i>Cassia fasciculata</i>	Partridge-pea	x					x																	
<i>C. marilandica</i>	Wild senna												x											
<i>Castilleja coccinea</i>	Indian paintbrush	x							x															
<i>Ceanothus americanus</i>	New Jersey tea	x							x															
<i>Cicuta maculata</i>	Spotted water-hemlock												x					x			x			
<i>Cirsium discolor</i>	Oldfield thistle						x						x					x		x		x	x	x
<i>Comandra umbellata</i>	Bastard toadflax	x	x						x				x											
<i>Coreopsis tripteris</i>	Tall coreopsis		x ⁴															x	x					
<i>Cornus racemosa</i>	Gray dogwood	x	x			x		x					x				x	x	x					x
<i>Corylus americana</i>	Hazelnut	x	x	x				x					x				x	x						
<i>Desmodium canadense</i>	Showy tick-trefoil	x	x					x					x					x	x	x			x	
¹ <i>D. canescens</i>	Hoary tick-trefoil												x							x				
<i>Echinacea purpurea</i>	Purple coneflower	x	x	x														x		x				
<i>Elymus canadensis</i>	Canada wild rye	x						x										x						
<i>Equisetum laevigatum</i>	Smooth scouring-rush	x											x											
<i>Eupatorium altissimum</i>	Tall boneset						x	x	x				x				x	x						x

Table 4. (cont.) Alphabetical list of 96 vascular plant taxa with Ohio prairie affinities (as suggested by Troutman in Cusick and Troutman, 1978:52-55) which have extant populations (or recent records as indicated) at sites of significant prairie remnants in the Darby Plains of west-central Ohio. Sites are described briefly in Table 3 and located in Figure 1. Scientific names are primarily from Fernald (1950).

		Battle-Darby Creek Metropolitan Park Bluff Prairie ^{2,7}	Bigelow Cemetery State Nature Preserve ³	Bradley Cemetery	Dayton Power & Light Co. Right-of-way at Van Ness Road	Debolt Road Roadside	Garrette Site ⁷	Georgesville Railroad Site ⁷	Graessie Road Bluff Site ⁷	Lilly Chapel Site	Martin Cemetery	McMahill Road Roadside	Milford Center Prairie	Ohio Rt. 38 Roadside	Phellis Cemetery	Pinnatid Prairie Dock Site	Railroad Right-of-way Between Plain City and Unionville Center	Railroad Right-of-way Between West Jefferson and London Including Plymell Cemetery ⁷	Scheiderer Road at Railroad	Silver-Forrest Site	Smith Cemetery	Township Road 403	W. Pearl King Prairie Grove	Wilson Road at Railroad ⁷
Identifying number on Table 3 and Fig. 1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total taxa with prairie affinities		50	29	9	6	6	17	20	27	3	1	1	57	5	1	4	12	45	15	34	30	2	18	18
<i>Euphorbia corollata</i>	Flowering spurge	x	x	x	x		x	x	x				x				x	x	x	x				
<i>Gaura biennis</i>	Biennial gaura	x ⁶		x	x								x					x					x	
<i>Gentiana quinquefolia</i>	Stiff gentian	x							x															
<i>Gerardia tenuifolia</i>	Slender foxglove	x					x																	
<i>Helenium autumnale</i>	Sneezeweed	x											x											
¹ <i>H. nudiflorum</i>	Purple-headed sneezeweed	x																						
<i>Helianthus grosseserratus</i>	Saw-toothed sunflower	x ⁶	x ⁴		x								x				x	x	x				x	x
<i>H. laetiflorus</i>	Showy sunflower												x											
<i>H. strumosus</i>	Pale-leaved wood sunflower	x	x					x					x					x		x				x
<i>Heliopsis helianthoides</i>	Ox-eye	x		x				x					x					x		x				x
<i>Hypoxis hirsuta</i>	Yellow stargrass	x							x											x				
<i>Ipomoea pandurata</i>	Wild potato-vine	x ⁶		x			x	x					x					x						x
<i>Krigia biflora</i>	False dandelion	x																						
<i>Lactuca canadensis</i>	Tall wild lettuce	x	x															x						
<i>Lathyrus venosus</i>	Veiny pea												x											
<i>Lespedeza capitata</i>	Round-headed bush-clover																		x					
<i>Liatis aspera</i>	Rough blazing-star								x															
<i>L. scariosa</i>	Blazing-star												x											
<i>L. squarrosa</i>	Scaly blazing-star	x							x											x				
<i>Lilium michiganense</i>	Michigan lily												x											
<i>Lithospermum canescens</i>	Hoary puccoon	x							x															
<i>Lobelia spicata</i>	Pale-spike lobelia	x							x											x	x			x
<i>Lycopus americanus</i>	Water-horehound	x											x											x
<i>Lysimachia lanceolata</i>	Lance-leaved loosestrife		x										x											x
<i>Lythrum alatum</i>	Winged loosestrife												x							x				
<i>Melica nitens</i>	Tall melic grass												x											
<i>Mirabilis nyctaginea</i>	Wild four-o'clock												x						x					
<i>Monarda fistulosa</i>	Wild bergamot	x	x				x						x					x		x	x			
<i>Panicum virgatum</i>	Switchgrass	x ⁶					x							x				x					x	x
<i>Penstemon digitalis</i>	Foxglove beardtongue	x ⁶																		x				
<i>Physostegia virginiana</i>	Obedient plant		x ⁵																					
<i>Polygala senega</i>	Seneca snakeroot	x	x ⁴						x				x											
<i>P. verticillata</i>	Whorled milkwort																						x	
<i>Polygonatum commutatum</i>	Giant solomon's-seal	x	x						x				x					x						
¹ <i>Prunus americana</i>	Wild plum	x ⁶	x					x					x					x						
<i>Psoralea onobrychis</i>	Sainfoin		x					x					x					x					x	

Table 4. (cont.) Alphabetical list of 96 vascular plant taxa with Ohio prairie affinities (as suggested by Troutman in Cusick and Troutman, 1978:52-55) which have extant populations (or recent records as indicated) at sites of significant prairie remnants in the Darby Plains of west-central Ohio. Sites are described briefly in Table 3 and located in Figure 1. Scientific names are primarily from Fernald (1950).

		Battelle-Darby Creek Metropolitan Park Bluff Prairie ⁷	Bigelow Cemetery State Nature Preserve ³	Bradley Cemetery	Dayton Power & Light Co. Right-of-way at Van Ness Road	Debolt Road Roadside	Garrette Site ⁷	Georgesville Railroad Site ⁷	Graessie Road Bluff Site ⁷	Lilly Chapel Site	Martin Cemetery	McMahl Road Roadside	Milford Center Prairie	Ohio Rt. 38 Roadside	Phellis Cemetery	Pinnatifid Prairie Dock Site	Railroad Right-of-way Between Plain City and Unionville Center	Railroad Right-of-way Between West Jefferson and London Including Plymell Cemetery ⁷	Scheiderer Road at Railroad	Silver-Forrest Site	Smith Cemetery	Township Road 403	W. Pearl King Prairie Grove	Wilson Road at Railroad ⁷
Identifying number on Table 3 and Fig. 1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Total taxa with prairie affinities		50	29	9	6	6	17	20	27	3	1	1	57	5	1	4	12	45	15	34	30	2	18	18
<i>Pycnanthemum virginianum</i>	Virginia mountain-mint	x					x						x					x		x			x	
<i>Quercus macrocarpa</i>	Bur oak	x	x										x					x		x			x	
<i>Ratibida pinnata</i>	Gray-headed coneflower	x	x		x		x	x	x	x			x					x	x	x				x
<i>Rosa blanda</i>	Smooth rose												x											
<i>R. carolina</i>	Pasture rose	x	x										x						x					
<i>Rudbeckia hirta</i>	Black-eyed susan	x	x		x				x				x			x		x	x	x				
<i>Ruellia humilis</i>	Wild petunia	x ⁶	x				x		x				x							x			x	
<i>Salix humilis</i>	Gray willow																				x			
<i>Silene regia</i>	Royal catchfly		x								x		x					x						
<i>Silphium terebinthinaceum</i>	Prairie dock		x ⁴										x				x	x	x	x				
<i>S.t. (pinnatifid hybrid)</i>	Pinnatifid prairie dock												x				x	x	x	x				
<i>S. trifoliatum</i>	Whorled rosinweed	x	x				x	x	x				x					x		x				
<i>Sisyrinchium albidum</i>	White blue-eyed grass												x											
<i>Solidago rigida</i>	Stiff goldenrod		x				x	x					x					x			x			x
<i>Sorghastrum nutans</i>	Indian grass	x	x						x					x				x	x	x			x	
<i>Spartina pectinata</i>	Prairie cord grass				x								x	x				x	x		x	x	x	x
<i>Spiranthes gracilis</i>	Slender ladies tresses	x																						
<i>Sporobolus asper</i>	Rough dropseed												x	x						x				
<i>S. heterolepis</i>	Prairie dropseed																			x			x	
<i>Teucrium canadense</i>	Germander												x					x						
<i>Thalictrum revolutum</i>	Skunk meadow-rue		x										x					x		x				
<i>Tradescantia ohiensis</i>	Ohio spiderwort												x					x					x	
<i>Veronicastrum virginicum</i>	Culver's-root							x					x					x	x					
<i>Viola sagittata</i>	Arrow-leaved violet																			x				
<i>Zizia aurea</i>	Golden alexanders	x							x				x							x	x			

¹ Not included on Troutman's list in Cusick and Troutman (1978:52-55) but added with his approval.

² James E. Stahl, 1980, personal communication; and Richard E. Moseley, Jr. 1980, personal communication.

³ Carr, 1981.

⁴ Species previously reported but absent in 1978.

⁵ Observed August 1976 about 200 m (600 feet) south of cemetery along roadside by Charles C. King. Not included in total species for the cemetery.

⁶ Not on prairie but on adjacent park property. Not included in total species for the bluff prairie.

⁷ Jack H. McDowell, 1981, personal communication.

(*Helenium nudiflorum*), false dandelion (*Krigia biflora*) and slender ladies tresses (*Spiranthes gracilis*). The site is managed by the Park District to protect and enhance the prairie species. Nine additional species are also present on nearby park land (Table 4).

A small prairie reconstruction using local and non-local propagule sources was initiated on park land in 1974 (Fig. 1 see 1a) with the assistance of Gary Moore, Chris Toops, and Jack McDowell, all park employees. Also, at a site on recently purchased park land just south of Georgesville (Fig. 1 see 1b), Jack McDowell initiated in October 1980 a sizeable reconstruction project using only local ecotypes (McCutcheon, 1980).

Bigelow Cemetery State Nature Preserve

This 0.2 ha (0.5 acre) pioneer cemetery is in Pike Township in northern Madison County along Rosedale (Weaver Road) about 2.5 km (1.6 miles) west of Chukery (Thomas, 1963, 1975; Cusick and Troutman, 1978:30; see my Fig. 1). For many years, ecology classes from The Ohio State University visited this site and referred to it as "Chukery Cemetery." It is designated as "Boerger Cem" on the Plumwood, Ohio, 1961, United States Geological Survey 7½' topographic map. Graves date from 1814 to 1892 (Overton, 1981), and most of the cemetery occurs on Crosby-Lewisburg silt loams with Kokomo (Brookston) silty clay loam on the northern margin (Gerken and Scherzinger, 1979, 1981:photomap 2).

The cemetery combines a valuable assemblage of native wet prairie plants (Carr, 1981; see my Table 4) with the fascinating history of the first settlers from New England and Pennsylvania who struggled for survival in the prairies and oak groves of the Chukery area (Overton, 1981). Upon the recommendation of the Prairie Survey Project of the Ohio Biological Survey (King, 1978), the Pike Township Trustees transferred administration of this cemetery to the Division of Natural Areas and Preserves, Ohio Department of Natural Resources (Thomas, 1979). On 3 October 1978, this valuable remnant of the human and natural history of the area officially became the Bigelow Cemetery State Nature Preserve commemorating the name of the family of settlers who early owned the tract and many of whom are buried there (Ohio Division of Natural Areas and Preserves, 1979:6).

Chukery as a settlement is gone from the intersection of Ohio Routes 161 and 38 on the east bank of Little Darby Creek. Agricultural fields now replace the very sites of former buildings. As indicated by Maude Ellen King Burns (1978, personal communication), a lifelong resident of the area, the name "Chukery" was assigned to the small settlement by Henry King, an early resident, because of the numerous "chuckholes" in the Old Post Road (now Ohio Route 161) and the other roads in the immediate area. The chuckholes undoubtedly resulted when roads were built across the poorly drained Kokomo silty clay loam and Crosby silt loam so widespread in the area.

Sites Discovered by the Prairie Survey Project

During August 1976 in cooperation with the Prairie Survey Project of the Ohio Biological Survey, the author initiated a continuing search for other sites possessing significant prairie communities or populations in the Darby Plains. Species indicative of such communities as suggested by the Prairie Survey Project (Cusick and Troutman, 1978:1-3) include the following:

<i>Andropogon scoparius</i>	Little bluestem
<i>A. gerardii</i>	Big bluestem
<i>Echinacea purpurea</i>	Purple coneflower
<i>Helianthus grosseserratus</i>	Saw-toothed sunflower
<i>Liatris</i> spp.	Blazing-stars
<i>Ratibida pinnata</i>	Gray-headed coneflower
<i>Silphium terebinthinaceum</i>	Prairie dock
<i>Sorghastrum nutans</i>	Indian grass

Additionally, I have included Sullivant's milkweed (*Asclepias sul-livantii*) in this list.

This search is primarily being accomplished by scanning the landscape for indicator species from public roads and those private roads associated with railroads. For those railroads which do not have adjacent passable roads, I am conducting the survey by walking the tracks. Thus far, many public roads have been surveyed on numerous

occasions, and all public roads and most private roads and railroads have been checked at least once. All of the cemeteries in the Darby Plains indicated on the United States Geological Survey 7½' series topographic maps and several additional cemeteries have been examined at least once. Upon observation of an indicator species, an intensive investigation of the general area is made to ascertain and record the presence of any additional Ohio prairie species as suggested by Troutman (Cusick and Troutman, 1978:49-55). When merited, voucher specimens are collected for deposit in the Herbarium, The Ohio State University.

I have observed specimens of a few indicator species, especially big bluestem, Sullivant's milkweed, gray-headed coneflower, and saw-toothed sunflower, at numerous roadside locations. However, only 23 additional sites have been found which possess either significant assemblages or populations of prairie species (Table 3, Fig. 1). Although most of these remnants are small and have only a few prairie species, five sites as described below are very noteworthy, namely: Milford Center Prairie, Railroad Right-of-way between West Jefferson and London including Plymell Cemetery, Silver-Forrest Site, Smith Cemetery, and W. Pearl King Prairie Grove.

Numerous old-age bur oaks and fewer post oaks (*Quercus stellata*), common prairie associates, still survive in the Darby Plains, some from presettlement times. I have made no attempt to record their specific locations, but they generally occur in oak groves (virtually all of which are subjected to continual grazing), in yards around homesteads, and in fields where they stand out as isolated, rounded sentinels. Unfortunately, their numbers are constantly decreasing, and there is very little regeneration of these species on this intensively managed landscape. Each year, lightning, wind, and chainsaws deliver sudden destruction to a few more of these venerable links to the prairies of past centuries on the Darby Plains.

Milford Center Prairie

Milford Center Prairie is located about 3 km (2 miles) southwest of Milford Center in Union Township, Union County. It occupies about 2 km (1.3 miles) of a former railroad right-of-way which is now used for an electric power line by the Dayton Power and Light Company, Dayton, Ohio 45401. The right-of-way is about 0.3 km (0.2 mile) west of and parallel to Ohio Route 4, and prairie plants occur from about 1 km (0.6 mile) northeast to about 1 km (0.6 mile) southwest of Connor Road (Union County No. 81). As described by Thomas (1977), the best exposure of prairie plants occurs southwest of Connor Road and Treacle Creek.

The charter for the original railroad was granted 21 March 1850. This railroad, which was the first one constructed in Union County, was completed from Springfield to Delaware, Ohio, in the spring of 1854, and had its first train run on 29 March 1854 (Durant, 1883:417). Ownership changed several times and at one time it was known as the Delaware Branch of the Cleveland, Cincinnati, Chicago, and St. Louis Railway Company from whence was derived its commonly known nickname of "the Big Four." On 24 October 1962, The Dayton Power and Light Company officially purchased the right-of-way, and upon constructing a power line, has been managing it as a power line right-of-way to the present. (Harper, 1980; Ullmer, 1980).

The right-of-way demonstrates considerable evidence of past uses and disturbances. Coal ashes, old charred and weathered ties, and other fill materials are abundant. Some common Eurasian species have invaded the area, but the right-of-way continues to provide a refugium for at least 57 prairie taxa virtually all of which have been eliminated from the fertile adjacent agricultural lands, and 12 of which are known from no other station within the Darby Plains (Table 4). Annually, during July, August, and September, portions of the right-of-way are reminiscent of the "almost endless variety of flowers, variegated with all the colors of the rainbow" as described above by Dr. Jeremiah Converse for the original prairies in the Darby Plains. Original prairie occurred at this site as indicated by Dobbins (1937; see my Fig. 1). This presence of prairie is corroborated by the extensive occurrence of the prairie soil, Kokomo (Brookston) silty clay loam, directly on portions of the right-of-way and in adjacent fields as mapped by Waters, et al. (1975:photomaps 42, 47). Other soils on the right-of-way include Montgomery silty clay loam in the low area just south of Treacle Creek, and Crosby and Celina silt loams on the gently sloping areas. The former presence of the railroad obviously presents the possibility that some of the existing prairie species and/or

populations may have gained access to the site via railroad transportation. However, in view of the historic and soil records, the extant prairie plants here, most probably, represent progeny of original Darby Plains prairie plants.

Populations of at least six noteworthy species are present. Three which have been designated as endangered species in Ohio are royal catchfly (*Silene regia*), tall melic grass (*Melica nitens*), and vetchling or veiny pea (*Lathyrus venosus*); one which is designated as threatened is smooth rose (*Rosa blanda*); and two which are potentially threatened are stiff goldenrod (*Solidago rigida*) and wild petunia (*Ruellia humilis*) (Ohio Division of Natural Areas and Preserves, 1980; Cooperrider, ed., In press).

Royal catchfly, with its spectacular scarlet blossoms in July and August, is known currently from only five other locations in Ohio (King, 1981). This population with approximately 800 flowering stems is the largest in the state, and possesses more flowering stems than the four other stations combined. Tall melic grass, recorded from only three other Ohio counties (Braun, 1967:91), has a small but vigorous population here. Vetchling or veiny pea is a rare legume which blooms in May and June. Troutman (Cusick and Troutman, 1978:53) suggested that the species was known in Ohio only from herbarium records and that it was probably extirpated from the state. Allison W. Cusick (1980, personal communication) confirmed that the small Milford Center Prairie population is the only one known currently in Ohio. Smooth rose, recorded from eight other counties in Ohio (Braun, 1961:214), is well established here; stiff goldenrod is very abundant; and wild petunia is common.

Another significant, but small, population is that of blazingstar (*Liatris scariosa*) which blooms in late August and September. This population is possibly a hybrid between *L. scariosa* and *L. scabra* (Barbara Schall, 1979, personal communication).

Milford Center Prairie has the highest prairie species diversity of any prairie remnant identified thus far in the Darby Plains. Curiously, four generally occurring species have not been observed: little bluestem, Indian grass, Sullivant's milkweed, and purple coneflower. Nevertheless, the entire assemblage of prairie species is a very valuable resource, especially as a seed and propagule source for prairie restoration projects within the Darby Plains.

Harry Reed, now deceased, tilled the fields adjacent to Milford Center Prairie for many years. During a conversation in 1977, this 95-year-old, retired farmer told me that he had watched many Big Four trains go by his farm. Occasionally, sparks from a passing train would set fire to the right-of-way and adjacent fields. He said that dry summers with nearly ripe grain in the fields were especially nervous times for himself and his neighbors. He was not familiar with prairie plants and was quite surprised when I informed him that much of his farm had once been prairie. He was well aware that there was prairie in Illinois. His grandmother had died there after having become lost in the tall grass one stormy night and contracting pneumonia. At the time, her husband was a soldier in the Civil War. Mr. Reed's father became a virtual orphan and eventually returned to central Ohio. How ironical that Harry Reed lived most of his life on this farm so close to some of the prairie species which in Illinois, had played such a significant role in the scenario that resulted in his living in the Darby Plains.

Silver-Forrest Site

The Silver-Forrest Site was discovered by Jack H. McDowell. It is a privately owned area with numerous bushy openings and edges associated with the woods on the south side of Little Darby Creek about 3.0 km northwest of the junction of U.S. Route 40 and Ohio Route 142 in West Jefferson. Soils are silt loams of the Lewisburg-Celina, Crosby-Lewisburg, and Miamian series (Gerken and Scherzinger, 1981:photomaps 20, 21).

The site, for which 34 prairie plant species have been recorded (Table 4), is noteworthy because it contains the only known populations in the Darby Plains of round-headed bush-clover (*Lespedeza capitata*) and arrow-leaved violet (*Viola sagittata*) in addition to small but vigorous populations of prairie dropseed (*Sporobolus heterolepis*), short green milkweed (*Asclepias viridiflora*), scaly blazing star (*Liatris squarrosa*), and pinnatifid prairie dock. Some of the populations of prairie species appear to be decreasing because of encroaching trees and shrubs.

Railroad Right-of-Way Between West Jefferson and London Including Plymell Cemetery

This right-of-way and cemetery have been investigated for the presence of prairie plants by Jack H. McDowell. The right-of-way exhibits typical disturbances commonly associated with railroads; but it also possesses good to excellent populations of numerous prairie species growing intermittently along 12.5 km of tracks between West Jefferson and London. Plymell Cemetery, a 0.2 ha (0.5 acre) site is contiguous to the railroad right-of-way on the south side, 0.5 km east of the intersection of the railroad and Glade Run Road (Co. Rt. 70). Most of the soils on the right-of-way are Kokomo silty clay loam, Crosby-Lewisburg silt loam, Lewisburg-Celina silt loam, and Crosby silt loam; there are smaller areas of Eldean silt loam, Sloan silty clay loam, Wea silt loam, and Westland silty clay loam (Gerken and Scherzinger, 1981:photomaps 24, 26, 29).

A total of 45 prairie plant species has been recorded thus far for the right-of-way (Table 4). It possesses substantial populations of big bluestem, little bluestem, switch grass (*Panicum virgatum*), prairie cord grass (*Spartina pectinata*), Ohio spiderwort (*Tradescantia ohioensis*), sainfoin (*Psoralea oblongifolia*), Sullivant's milkweed, purple coneflower, gray-headed coneflower, whorled rosinweed (*Silphium trifoliatum*), and prairie dock. A small population of eight flowering stems of royal catchfly is located in the right-of-way in the Deer Creek flood plain, and New Jersey tea (*Ceanothus americanus*) occurs in Plymell Cemetery.

A sizeable population of prairie dock with pinnatifid (deeply lobed) leaves occurs here. Basal leaves of many plants in this population are deeply lobed and very similar to those of compass-plant (*Silphium laciniatum*). The upper stems, however, are typical of prairie dock (*S. terebinthinaceum*): branched, leafless, and glabrous. Riddell (1834:502) referred to this taxon on the Darby Plains as *Silphium pinnatifidum*. Schaffner (1932:196) listed it as *S. terebinthinaceum pinnatifidum* and recorded Ohio populations from Madison County and Clark County. Fisher (1966) working with a Marion County, Ohio, population indicated that the taxon was a hybrid between *S. terebinthinaceum* and *S. laciniatum* with backcrossing and hybrid segregation in the direction of *S. terebinthinaceum*. Populations of typical prairie dock are known from several sites in the Darby Plains (Cusick and Troutman 1978:42-43; see my Table 4), but neither extant populations nor herbarium records of compass-plant are known for the Darby Plains. Riddell (1834:502), however, as indicated above, recorded the presence of compass-plant in the Darby Plains in the 1830's. Presumably the hybridizing occurred many years ago. The primary value of this site is that it preserves a sizeable genetic reservoir of this and other uncommon prairie taxa.

Smith Cemetery

Smith Cemetery is a privately owned cemetery with a unique assemblage of prairie species for the Darby Plains. It is about 0.2 ha (0.5 acre) in size and is located about 5 km (3 miles) west of Plain City in Darby Township, Madison County, just north of Boyd Road (Madison County Road 42). Graves date from 1816 to 1884 (Mrs. Edgar Yarian, 1980, personal communication).

The cemetery is located on Crosby-Lewisburg silt loams (Gerken and Scherzinger, 1979, 1981:photomap 3) and is flanked on the north and east by five old-aged bur oaks. Although subjected to frequent mowing, the cemetery appears to have been spared treatment with herbicides since it possesses abundant and vigorous populations of forbs. Purple coneflower and stiff goldenrod are especially numerous (Thomas, 1980, 14 Sep.). Big bluestem is very abundant, and little bluestem, Indian grass, and prairie cord grass are also present in lesser amounts. Smith Cemetery possesses the only known population in the Darby Plains of purple milkweed (*Asclepias purpurascens*), smooth aster (*Aster laevis*), and gray willow (*Salix humilis*).

Thus far 30 native prairie plant species have been recorded from Smith Cemetery (Table 4) in addition to several Eurasian species. With appropriate management the Eurasian invaders could be minimized or eliminated, and the prairie elements could be enhanced. Smith Cemetery offers great potential for an exceptional nature preserve complementing Bigelow Cemetery State Nature Preserve, 8 km (5 miles) to the west.

W. Pearl King Prairie Grove

W. Pearl King Prairie Grove is a privately owned, mixed oak grove interlaced with exceptional stands of native prairie grasses. It is about 5.6 ha (14 acres) in size and is located about 7 km (4.5 miles) southeast of Mechanicsburg in the northwestern corner of Monroe Township, Madison County, immediately west of the intersection of David Brown Road (Madison County Road 119) and Mechanicsburg-Sanford Road (Madison County Road 27). The site has about equal areas of Kokomo (Brookston) silty clay loam and Crosby-Lewisburg silt loams (Gerken and Scherzinger, 1981:photomaps 6, 10).

Prairie dropseed (*Sporobolus heterolepis*) grows here vigorously and abundantly (Thomas, 1980, 19 Oct.). It has been designated as an endangered species in Ohio (Ohio Division of National Areas and Preserves, 1980; Cooperrider, ed., In press), and this is the largest known extant population of the species in the state. In addition to Madison County, the species has been recorded in Ohio from only two adjacent counties, Franklin and Champaign. A Franklin County record was obtained within the Darby Plains at Georgesville in 1892 by William G. Werner (Herbarium, The Ohio State University). The Champaign County records are from two localities west of the Darby Plains, Cedar Bog (Frederick, 1974:19) and Blue Clay Railroad Cut (Cusick and Troutman, 1978:10-11). The previous Madison County record came from a specimen collected 80 years ago by Katherine D. Sharp in 1900 and deposited in the Herbarium, The Ohio State University. She cited London as the collection locality which suggests that W. Pearl King Prairie Grove was not the source of her specimen. In October 1980, Jack H. McDowell also discovered a small population at the Silver-Forrest site as described above.

Other prairie grasses are also well represented here. Little bluestem and Indian grass are very abundant while big bluestem, prairie cord grass, and switch grass are present in lesser amounts. Forbs, however, are not abundant and are limited to only a few species (Table 4), the most abundant of which is Virginia mountain-mint (*Pycnanthemum virginianum*) and pale-spike lobelia (*Lobelia spicata*). The dominant trees include young to old-aged specimens of bur oak, white oak (*Quercus alba*), shingle oak (*Quercus imbricaria*), and post oak. Also present are shagbark hickory (*Carya ovata*), slippery elm (*Ulmus rubra*), and honeylocust (*Gleditsia triacanthos*).

According to Chester A. Clime (1980, personal communication), manager of the farm of which the grove is a part, the site has long been used as a pasture but apparently has never been plowed. A natural water course crossing the area, however, has been channelized to increase drainage of adjacent fields. Recent annual burnings by Mr. Clime in an effort to eliminate multiflora rose (*Rosa multiflora*) and brambles (*Rubus* spp.) have undoubtedly enhanced the expression of the prairie grasses.

W. Pearl King Prairie Grove is one of the most significant prairie groves in Ohio. The presence of prairie dropseed and the other prairie grasses in combination with mixed-aged oaks provides not only an exceptional genetic reservoir but also an irreplaceable remnant of the presettlement landscape in the Darby Plains. The site offers exceptional features for a unique nature preserve not only for the Darby Plains but also for the eastern portion of the Prairie Peninsula.

CONCLUSIONS

The pristine prairies of the Darby Plains were sizeable, complex, and intricate ecosystems that survived on the Ohio landscape for thousands of years. In some ways they were very durable and rugged, whereas in other ways they were very fragile. These prairies required thousands of years to develop. Yet, in less than 200 years, they have been almost totally obliterated. Only a few depaupered remnants still survive. But these remnants assume major significance by providing the only available genetic reservoirs of a once-abundant resource. While this resource still exists, one or several tracts of prairie soil of ample size should be restored to the crowning glory of prairie to ensure perpetuation of an unique gene pool and to afford modern society the privilege of experiencing, in at least a small measure, the natural heritage that was the prairie on the Darby Plains.

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HISTORY OF BIGELOW (CHUCKERY) CEMETERY STATE NATURE PRESERVE, A PIONEER PRAIRIE CEMETERY IN NORTHERN MADISON COUNTY, OHIO

Julie M. Overton
Ohio Genealogical Society
405 North Winter Street
Yellow Springs, Ohio 45387

Bigelow Cemetery, formerly known as Chuckery, Boerger/Burgher, or King Cemetery, is an approximately 0.2 ha (0.5 acre) plot in Pike Township on the west side of Rosedale Road (County Route 25), just south of the border between Union and Madison Counties, Ohio. The history of this cemetery is important because of its early human history as well as being a preserved prairie remnant in west-central Ohio. This cemetery has been used extensively as a field trip site for the plant ecology courses of The Ohio State University which were taught by Edgar N. Transeau, Robert B. Gordon, John N. Wolfe, and Gareth E. Gilbert. The vascular plants of this site are listed in Carr (1981), and King (1981) has discussed the flora, geology, and history of the area surrounding Bigelow Cemetery, the Darby Plains. On 3 October 1978, the cemetery was officially dedicated as Bigelow Cemetery State Nature Preserve, commemorating the name of members of this family buried there. The preserve is a public nature sanctuary classified as "interpretative" in the state nature preserve system.

Most of the families composing the Green Settlement were very large, many of them numbering from ten to twelve souls. By this it can be seen that we were not destitute of material to receive the benefits of free schools, which were soon put into operation, my father being the first teacher. But sickness soon made its appearance among us to an alarming extent, in a short time decimating the inhabitants by death (*History of Union County, Ohio*, 1883:172).

EARLY CEMETERY BURIALS

Indeed, John Sabin's observation was correct: in 1814 his brother, Hiram, died of milk sickness and his father, Nehemiah Sabin, died at the age of forty-four. Nehemiah's tombstone documents the first known burial in Bigelow Cemetery. His death was followed within five days by that of Elizabeth McCloud. She was a daughter of Charles McCloud, an early settler from Vermont, who located in the McCloud Settlement, Darby Township, Union County.

The land chosen for the cemetery was apparently unoccupied and unsurveyed. It was part of the Virginia Military District. In July 1815 Benjamin Hough, a Virginian from Ross County, Ohio, had the area surrounding and including the cemetery surveyed. The boundaries of this area were established according to the following directions: "beginning at three bur oaks, two of them from one root, the survey line went to three bur oaks from one root, to two bur oaks and a hickory . . . to a stake in the prairie, thence to another stake in the prairie, and thence to the beginning." Three months after it was officially marked off, Benjamin Hough received this land for his past military services. Thirteen months later in November of 1816, he sold the acreage for \$344 to Russell Bigelow. After burying one son, three daughters, and two grandchildren there, Russell Bigelow and his wife, Lucy, sold the cemetery in 1822 to Uriah Wood who died two years later.

Henry King and his family moved into Madison County in 1818. Originally from Schuylkill County, Pennsylvania, they first settled in Ross County, Ohio, about 1811 or 1812. The Kings had six children who grew to adulthood and married into the New England families who have previously settled along the Post Road in Union County. The first burial of a member of the King family in Bigelow Cemetery was in 1844. The cemetery was used primarily by the original New Englanders and their descendants. Other area residents who migrated from New York, New Jersey, Delaware, Pennsylvania, Virginia, Kentucky, and Ireland were also interred there. Three veterans of the War of 1812 are listed in the *Cemetery Location* book as having been buried in this cemetery: John Harrington, Nathaniel Newman, and Robert Russel. The last known burial occurred in January 1892, when Miranda Kent, born Miranda Harrington in 1807 at East Montpelier, Vermont, was inhumed.

EARLY HISTORY

Soon after the Revolutionary War, Canada encouraged settlers to locate within its boundaries by offering cheap sections of land. Many New Englanders, especially those from the mountainous areas of Vermont and western Connecticut, moved their families and worldly possessions to an area then called Canada East. However, the War of 1812 between Great Britain and the United States generated deep patriotic unrest among many of the new settlers. Once they realized they were on "the wrong side of the fence," they packed up their belongings and "took up their line of march for the far West." Perhaps attracted by New England friends and relatives who had already settled at Worthington, Ohio, a small group of about eight families came to Franklin County where they spent the winter.

When the spring of 1813 arrived, the leaders of this small group looked for suitable lands on which to make their new homes. They were not as fortunate as those New Englanders who had received free lands in the Refugee tract east of Columbus because of personal losses incurred during the Revolutionary War. The group located in what is now southern Union County, Ohio, because they did not want to be too far removed from the Worthington and Refugee tract residents. The lands they chose were in what was then considered a barren waste, the prairies. These "wastes," however, had the distinct advantage of being priced at about one-half the cost of more desirable forested acreage. By the time winter arrived, the families had built cabins and were ready to welcome the next group of settlers who were following their path. This area became known as the "Green Settlement" on what was later named the Post Road.

One of the first group's leaders was Nehemiah Sabin whose son later recalled: