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## Hill Prairies Within the City of Dubuque, Iowa

HOWARD W. HINTZ<sup>1</sup>

*Abstract.* Strips of prairie several hundred feet wide cover certain uninhabitable hillsides within the city. Three major strips comprise a total length of about two miles. They support a varied flora. Parts of the area are often burned, but grazing has been absent for half a century. Exact locations are given, and brief notes on some of the flowering plants and insects are included.

The purpose of this paper is to give the location, present condition, and recent history of several prairie remnants within the city limits of Dubuque, Iowa. The three principal areas add up to a strip about two miles long with an average width of about 300 feet. These areas have been relatively undisturbed except for burnings since at least the turn of the century. In midsummer they may be recognized from a distance by a unique bluish-green color and in fall and winter by a somewhat reddish or russet hue.

Accounts of hill prairies along the Mississippi River and elsewhere in Iowa and Illinois have been written by Sampson (1921), Shimek (1924), and Evers (1955). Other brief accounts, including some areas in Wisconsin, have been given by Marks (1942), Davidson (1960), and Hartley (1960). There has been a steady and continuing destruction of prairies during the last half century. The first prairie preserve was established in Iowa in 1945. Dr. Ada Hayden, who led the movement for prairie preserves, published a summary (1946) of promising prairie areas. At this time she did not include any Dubuque areas, and personal correspondence a few years later indicated she had not seen them up to that time.

Since these areas are on rocky slopes almost impossible to use as building sites, they will be destroyed slowly even without protection. However, their uniqueness is unknown by the community. Proper publicity will aid their survival, since at present they are looked upon as weed patches even by park workers, who would mow them all if it were not for the rocks.

### LOCATIONS

The eastern half of Dubuque County which borders the Mississippi river is characterized by deeply dissected, hilly, rocky terrain. Some of the highest hills extend 500 feet above the

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river level, and 200 and 300 foot differences are common. Dubuque is centered in a wide portion of the Mississippi valley. Broadly ridged hills extend into the widened valley from the north and on certain steep sides of these hills the prairie vegetation continues to survive. The hillsides are studded with limestone boulders and outcrops and have a thin soil derived from the bedrock. The average annual precipitation is 33 inches with about 67% falling during the growing season. Average January temperature is 19.6°F and the average July temperature is 74.6°F.

*Kaufman Avenue Prairies.* A long prairie band occurs on southwest-facing hillsides of the lower part of the Kaufman Avenue valley. Hempstead Street comes into Kaufman opposite about the center of the band. A few acres of prairie are on each side of Hempstead itself. Valeria Street follows the bottom of the hill on which the prairies grow. The prairie extends from 23rd and Valeria to the junction of Kane Street, Springgreen Court, and Kaufman. The area is most easily explored by walking up the hillsides from somewhere along Valeria. No streets or roads cross the half-mile long area but it is split by several wooded ravines. A great variation in drainage and exposure is provided by spurs, coves, and outcrops.

*Central Avenue Prairies.* Central Avenue runs the length of that part of Dubuque which lies in the river valley. At its northern end it enters a narrower branch valley about five blocks wide. The eastern hillsides of this valley face west by southwest and support considerable prairie from 25th Street to 32nd Street over a distance of nearly a mile. Pinard Street runs along the base of the hillsides. On the top of the hill at the southerly end is Marquette Place. It is easy to walk down onto one portion of prairie from Marquette Place.

*Rhomberg Avenue Prairies.* There are three major prairies on hills along the west side of Rhomberg Avenue. These hillsides face southeast and are the west side of the Mississippi valley at this point. *Area 1.* The longest band is between Ascension Street and Roosevelt Street above Prescott Street which runs along the base of the hillside. The area is best explored by driving out Windsor Avenue to Linwood cemetery and going up to the east side of Linwood. Within the undeveloped part of the cemetery are several acres of dense stands of tall prairie grass. The hill prairies are reached by walking from the northeast corner of the cemetery down into the hillsides. *Area 2.* An excellent area off of Roosevelt Street is readily reached by going up the drive to the Dubuque County Nursing Home. At the hill-top the prairies are seen to the left of the mowed grounds.

*Area 3.* On the hillsides around the water tower located in Eagle Point Park are several small areas interesting because they merge with undisturbed woodland.

#### VEGETATION OF THE DUBUQUE PRAIRIES

The sites are not typical of the vast areas which have been plowed, but the composition of species is similar to the dry, well-drained areas of the prairie formation. No doubt there are unusual extremes of temperature and evaporation on these hillsides. The limestone outcrops support lichens, mosses, ferns, and other plants not typical of the prairie proper.

The most mesic areas are within Linwood cemetery. Here are a few spots where the vegetation is difficult to penetrate in mid-summer. Culvers Root is abundant. Practically all the rest of the hill prairies have a short or sparse vegetation which is easily traversed.

The vegetation of the central portions of the hill prairies is entirely herbaceous. Grasses of about ten species are more or less dominant with *Sorghastrum nutans* L. and *Andropogon scoparius* Mx. being most conspicuous. *Bouteloua curtipendula* (Michx.) Torr. is common and *A. gerardi* Vitman is present. In the Kaufman Avenue and Marquette Place prairies the golden-rods (*Solidago rigida* L. and *S. nemoralis* Art.), compass plant (*Silphium laciniatum* L.), lead plant (*Amorpha canescens* Pursh.), *Euphorbia corollata* L., and *Liatris* are abundant. The rigid golden rod, compass plant, and *Liatris* are absent from much of the Rhomberg Avenue prairie below Linwood. Prairie clover (*Petalostemum* Mx.) is almost absent from Kaufman Avenue, abundant at Marquette Place, and very abundant at Linwood. Other legumes such as *Desmodium* are also present. The milkweed, *Asclepias verticillata* L., is widespread. It is one of the few species which occur in man made environments such as pastures and roadsides. *Anemone cylindracea* Gray is characteristic of protected coves. *Lactuca*, *Eupatorium*, and old field goldenrods frequent the borders.

Lead plant, compass plant, and prairie clover bloom in June and July. *Liatris* and *Euphorbia* bloom in July and August. Rigid goldenrod starts blooming in mid-August and by September is accompanied by blossoms of *Aster sericeus* Vent. and other asters and goldenrods. Earlier in the year there are patches of bloom of *Oxalis violacea* L., *Viola pedata* L., *Campanula rotundifolia* L., *Lithospermum canescens* (Mx.), *Sisyrinchium campestre* Bicknell, *Hypoxis hirsuta* (L.), and others.

Along the edges of the prairies and in disturbed portions dog-

wood, bittersweet, grape, sumac, and other woody vegetation form a rapid transition. Various cultivated plants, European species, and weeds (Queen Anne's Lace, mullein, bergamot, vervain thistles, white and yellow clover) which may thrive in pastures or grow right at the edge of the prairie are unable to invade the hill prairie community.

#### INSECTS ASSOCIATED WITH THE PRAIRIES

Compared to adjacent disturbed areas the prairie has few insects. Certain groups and species common to weedy disturbed areas move into the prairie. Examples of these are spittlebugs and the alfalfa plant bug and rapid plant bug. On the other hand, there are many species restricted to the prairie.

In midsummer the grass supports very few insects while the legumes are sparingly inhabited by mirids and coriscids. Members of these two groups often feed on seeds of *Amorpha*, *Desmodium*, and *Petalostemum*. A short-horned grasshopper is by far the dominant foliage inhabiting insect. Some years these feed extensively on the flower buds of *Solidago rigida*. *Liatris* bloom attracts butterflies, especially the pierids, and bees and bee flies. Certain large bee flies seem characteristic of the open rocky prairie areas in August. Other Diptera are scarce as are Hymenoptera, although various ground nesting species of bees and wasps occur.

The flowers of tall thoroughwort (*Eupatorium altissimum* L.) and those of various goldenrods are attractive to many flower visiting insects. The rhipiphorid beetle, *Macrosiagon limbatum* Fab., is found on these composites in August. One of the ambush bugs (*Phymata* sp.) is commonly found copulating on composites in early August but is in no way restricted to the prairie. The longhorned beetle, *Typocerus sinuatus* (Newn), is common along the prairie edge in June and is found again in August. A rhipiphorid (*Rhipiphorus* sp.) seems to be characteristic of the hill prairies.

#### HISTORY

A few French were in the Dubuque area at the end of the 18th century but no important influx of settlers began until the 1830's. The area immediately around the city supported maple-basswood and oak-hickory forest with prairie openings on the steep sunny hillsides and ridgetops. Quite possibly livestock at one time or another grazed all of the terrain. However, for about the last fifty years, at least, there has been no grazing of the areas discussed. It is unlikely that they were ever cultivated

in any fashion. Because of their inaccessability they are seldom even walked upon.

The biggest influence which man exerts at present is to burn at least some of the prairies yearly. The Kaufman areas probably have been burned the most and the Rhomberg prairies the least. The little tract within Eagle Point Park has seldom if ever been burned. This area has many shrubs, vines, and stunted trees scattered within the prairie vegetation while the heavy burned areas of Kaufman, for example, are nearly free of woody plants.

In the past the park management has attempted to "reforest" the small areas within Eagle Point with junipers. Some of these are now growing in the depressions in which they were placed.

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