

THE PALIMPSEST

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Iowa in the Beginning

The natural resources of Iowa are often extolled, but the story of their creation is not so familiar. It is as though rich men's sons were using their heritage with never a thought of how it came to be theirs. The character and ability to amass a great fortune are not developed in a single generation; nor were the rich mineral deposits, the soil, and the flora and fauna of Iowa made ready for man in a moment. Only through incomprehensible stretches of time have the forces of nature wrought the miracle of things as they are.

For the story of Iowa began when the earth first sallied forth in its orbit. Astronomers tell us that a long time elapsed before the Archean rocks were formed, and it may have been ages later when the dawn of life occurred. Eons have passed since then, while the world "turned on in the lathe of time". All sorts of creatures have sprung into existence,

fulfilled their mission, and passed into oblivion. Only the rocks have endured since the earth was formed. If the age of Iowa were conceived as a mile, the era of human kind would be less than a yard.

The history of Iowa before the advent of man is clearly recorded in the hills and valleys, the rocky cliffs, and the rich black loam of the prairies. The story begins when Iowa was under the sea, at a time when the noblest inhabitants were algae and worms. It was then that the Sioux Falls "granite" was laid down on the floor of the ocean. After a great while the sea receded, but in time the land was again submerged and the history of the next ten thousand centuries or more is told by the sandstone cliffs in Allamakee County.

At last a new age dawned, when the principal rock-forming forces were the primitive molluscs that deposited their calcium carbonate shells in the shallow arms of the ocean. By imperceptible accretions the Ordovician limestones of northeastern Iowa were formed. In a similar manner but at a later epoch, shell by shell, the Anamosa limestone grew as thousands of years fled by; and it was not until the age of the fishes that the crinoids and molluscs preserved the record of their times in the bluffs of the Cedar and Iowa rivers.

Meanwhile, at intervals, these layers of limestone were above the sea level and exposed to the savage attacks of the weather. As the floods of summer storms trickled into the earth some of the minerals

were dissolved and carried away to be stored in the crevices of the age-old Ordovician stone. Thus were the lead mines created for Julien Dubuque.

There came a time when the climate of Iowa was tropical. Vast marshes were filled with rank vegetation. Giant trees, enormous ferns, and all-per-vading rushes stored up the heat of summer suns and, dying, fell into the water. As thousands of years went by, the reedy tarns turned into peat bogs and decomposition continued until little but carbon remained. Such is the story the coal mines tell.

But the old earth heaved, and here and there a great salt lake or an inland sea appeared. Evaporation exceeded the supply of fresh water, and so at the end of a very long period only a salt bed remained or an extensive deposit of gypsum. So it has come to pass in the age of man that stucco comes from the Fort Dodge gypsum mines which were prepared at the end of the Paleozoic era.

The lofty peaks of the Rockies were rising when the sea, which ever and anon has flooded the land that now is called Iowa, retreated to the southward and has never returned. In Tertiary times the climate was temperate. There were flowers for the first time in Iowa, and with them came the bees and the butterflies. In sheltered nooks or the beds of streams, buried deep beneath the glacial drift, lie the bones of the animal life that prevailed.

But through the majestic sweep of geologic epochs the temperature gradually changed, and after hun-

dreds of thousands of years the age of ice came in. Through the long, bleak winters the snow fell, and the summers were too cool to melt it. So year by year and century after century the snow piled higher and higher until the land was covered with ice. As this ponderous ice sheet moved over the surface of Iowa it planed down the hills and filled up the valleys; streams were turned out of their courses; rocks were crushed into fragments and the fragments were ground into powder.

The first glaciation was followed by an interval of temperate climate, but the ice age was only beginning. Again and again the glaciers crept down from the north — twice all over Iowa and on three other occasions part of this region was covered. The earliest glaciers laid down the impervious subsoil of clay, while the later ones mingled powdered rock with the muck and peat of the inter-glacial periods to make the loam of the fertile Iowa farms.

Probably a hundred thousand years have fled since the last glacier visited north-central Iowa, but the region is still too young to be properly drained, so nature is assisted with dredges and tile. It was during the Pleistocene period that mankind came into existence, but no man trod Iowa soil until the last glacier was gone. Compared with the inconceivable eons of time since the first Iowa rocks were formed, it was only as yesterday that the ancient mound builders flourished.

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