Brown County - short report. 1911?

Spring of 1911?

Geologically Brown Co. is of considerable interest.

The oldest geological formations exposed within the county are composed of limestone and shale. These rocks contain abundant remains, called (fossils), of animals which once lived in the sea, this fact clearly indicating that the region was once submerged ~~beneath the ocean level, although Probably it was not far out very deeply covered by water~~

In the rather shallow sea which millions of years ago covered most of North America mud or sand, washed slowly from the land accumulated ~~the remains~~ at some ~~times or while~~ at times when no land waste was ~~supp~~ present, ~~when this matter faded, then the remains of marine shellfish~~ of marine animals alone covered the bottom, in time amounting to considerable deposits of shells and lime mud.

Then followed ~~at some~~ after an immense ~~long~~ lapse of time a gradual uplift so that the old sea bottom became dry land. The lime muds ~~became~~ hardened into limestone, the shells into fossils, ~~while~~ the clay muds ~~hardened~~ into shale.

Within the limits of Brown Co, two thick limestone formations occur, separated by ~~a thick~~ shale. These three formations are slightly inclined to the east so that on the west edge of the county occurs a limestone known as the galena formation. ~~Near the center of the county is found~~

This rock does not everywhere reach the present surface but is the first solid rock or "ledge" found beneath the

surface soil and ~~the~~ loose material. It is the formation seen in the quarries at Rock Creek.

East of the belt underlain by limestone is a narrow belt where the "Cincinnati" shale is the first rock below the younger loose deposits. It seldom is seen at the surface except at the base of some of the rock cliffs on Green Bay, this fact being due to its softness and the ease with which the weather breaks it down into loose clay.

East of the shale, and lying on top of it, as it gently descends toward ~~the~~ Lake Michigan is the ~~hard~~ flinty "Niagara" limestone. This hard rock is the backbone of the Door Co Peninsula. This great ridge owes its existance to the fact that as the country was worn down by rain, wind, and streams, following its emergence from the sea. The soft ~~rock~~ shale was worn away faster than the overlying limestones ~~on either side of it~~, thus forming the great valley in which Green Bay, Fox River and L. Winnebago lie.
~~This valley was once much deeper~~

(Retain description substantially as in original)

Compared with the events just described, the ice-age was a recent event in the geological history of Brown Co. Some tens of thousands of years ago, the climate became colder and colder until a great ice sheet accumulated on the highlands of Canada. The weight of the ice caused the borders to spread out.

Creeping towards the southwest, at a rate of probably less than a foot a day, the glacier entered the valley now

occupied by L. Michigan & Green Bay. The ridge of Niagara limestone served as a wedge to split the ice into two divisions. The western one of these followed up the valley of Green Bay but never extended much beyond Madison; the other filled all of the basin of L. Michigan. The ice stripped off ~~all~~ the surface soil and loose rock but probably did not wear away any considerable hills or otherwise profoundly alter the ~~former~~ country ~~surface~~

When at last the climate began to grow warmer, the front of the ice was melted back with many halts. This liberated the loose material it had picked up, and allowed it to gather upon the surface of the ground, especially wherever the border of the ice happened to be. These border deposits are called "terminal moraines" and are often marked by deep depressions without outlets, called "kettles" from their resemblance to the large kettles used by the early settlers. Some notable examples occur around Baird's Creek and the Octagon house. The melting ~~of large~~ masses of ice (buried) ~~in the~~ caused these steep sided depressions.

As the ice front retreated still farther to the northeast, water filled the valley it had vacated. At first this lake drained into Wisconsin R at Portage, along the course now occupied by the Upper Fox (~~as water route of great importance during the early settlement of the state~~). In the lake was collected a great thickness of sand, gravel, and ~~red~~ clay, washed from

The bare hills of "drift" just left by the glacier. The red clay forms the soil of a large part of the lower parts of Brown county, ~~especially on the west shore of Green Bay~~

The waters of the lake ~~began~~ soon began to fall as the ice melted farther back and the various stages of the lake may now be observed as recorded by the abandoned shore lines. These former shores are marked by ridges of sand and gravel. Long used by the Indians as routes of travel, their true origin as early ~~noticed~~ recognized, and commented upon it narratives of travel: at Kaukauna there is a fine example etc.

Follow rem. of II

When the water of ~~the~~ L. Mich. reached its present level, the appearance of Brown county was substantially as it is today. The retreat of the glacial period had been to fill the deeper valleys with a great thickness of clay, sand, gravel, and boulders, so that the underlying solid rocks reach the surface at comparatively few places. This has made the time which has elapsed since the glacier disappeared, the streams have made but slight progress in wearing away this new surface. The Fox River has eroded a large channell, as at Wrightstown, while the smaller streams have cut only narrow ravines. The slow, ~~agencing~~ process of erosion is now going on, removing material from the hills and dropping it in the lakes or sea.

Such has been the geological history of Brown county. No volcanic action, or other spectacular catastrophies marked its even course. It ~~is only~~ is none the less impressive that it shows only those slow processes which, continuing through untold ages have built up the rocks on the sea bottom, elevated them above the water, then in turn worn them away to be deposited elsewhere. The ice age was the last incident recorded in the face of the county. Occuring in a relatively recent time, it greatly altered the aspect of the region by smoothing out the older features with a thick mantle of glacial drift material.