

Northern Kentucky Views Presents:

Owen, Gallatin, Grant, and Boone Counties

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OWEN, GALLATIN, GRANT, AND BOONE COUNTIES.

The prevailing rocks which give character to a considerable area in these four counties, are different varieties of the peculiar earthy silicious mudstone, which I have had occasion to notice elsewhere in this report. The different varieties of this rock, in this part of Kentucky, will probably average about one hundred feet in thickness, and its elevation above the Ohio from two hundred to three hundred feet. It is usually of a buff color. Fossils can seldom be recognized in these beds of the Lower Silurian system of central Kentucky; those that have been observed are casts of *Leptaena*. Its composition will be seen by referring to the chemical report in the first and second parts of this volume, where from it will be seen to differ most decidedly from the composition of the calcareous beds of the same formation; this being, in fact, a rock not containing palpable grains of sand, but a large percentage of silex, and small proportion of lime, and a large percentage of sulphuric acid. It gives rise to a soil entirely distinct in its character from that resulting from the decomposition of the underlying and overlying blue and grey fossiliferous limestones, and stamps a marked feature to the whole country, where it exists in any great force. Some varieties give origin to sobby beech land; the better quality of soil, based on this formation, supports a growth of hickory, oak, poplar, and sugar-tree, and some walnut and hackberry on the hill sides, which may be considered the prevalent growth.

The waters of this district—even those habitually in use—appear to contain, as far as I am able to judge, from the *qualitative* examinations that I have made of them in the field, more than the normal proportion of magnesia found in natural spring water, not regarded as mineral, and that, probably, mostly in the state of chloride; but this is a matter that requires a careful *quantitative* analysis in the laboratory, in order to be able to pronounce, with confidence, as to proportional quantity and state of combination; and is a subject which demands farther and closer investigation. The beds of limestone which underlie this mudstone, and crop-out occasionally in the lower cuts of the hills in these counties, contain *Leptaena sericea*, *Orthis testudinarea*, *Atrypa capax* and *modesta*.

The hills are usually about four hundred feet above the level of the Ohio river; the mudstone occupying the higher grounds under the arable lands, which is often considerably broken; but the hillsides are more rounded off and less abrupt than where the limestones prevail, with a considerable thickness of marly shales.

Four different varieties of soil may be noticed in Boone county:

1. The beech, sugar-tree, white and blue ash lands.
2. The buckeye land.
3. The oak land, which is a superior soil, good for tobacco.
4. The wet or "sobby" beech land.

Between the towns of Union and Florence, in Boone county, at an elevation of two hundred and fifty to three hundred feet above the Ohio river, the shell beds of the blue limestone formation are in place, containing abundance of *Leptaena alternata*, *Orthis Lynx*, and branching form of *Chaetetes lycoperdon*. Some of the silicious mudstone is speckled with dark spots. This character of the rock was observed particularly near the head of Arnold's fork of Eagle creek, in Grant county, and on the waters of Cedar creek, in Owen county, which appears to be due to the presence of manganese.

Some of the springs near Dickey's branch of Cedar, in Owen county, are feebly impregnated with common salt, forming weak brines from which, in the early settlement of the country, salt has been made.