

PROGRESS IN GEOLOGIC MAPPING OF ILLINOIS, 1839-1939*

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It is interesting historically that the first discovery of coal in North America was made in Illinois by Father Hennepin in the latter part of the seventeenth century. This can hardly be considered the beginning of geology in our State, however, because geological science did not make its appearance until another two hundred years had passed.

In the early part of the nineteenth century several exploring expeditions mostly organized by various agencies of the Federal Government passed through Illinois. Some of these parties included naturalists, and more or less unrelated geological observations were included in the published reports of their findings. The first systematic study of the geology of any part of Illinois, however, was undertaken by David Dale Owen in 1839 for the Federal Land Office. His first report on the lead region centering around Galena, Illinois, and including adjacent parts of Wisconsin and Iowa was published in 1844. Included in this report was a map showing the extent of the Illinois Coal Field which was the first map showing with any accuracy any of the major geological features of the State.

In 1851 the first Geological Survey of Illinois was organized with Dr. J. G. Nor-

wood as State Geologist. His studies covered the entire State and in 1858 he published a colored geological map on a scale of 50 miles to one inch. This map shows with a fair degree of accuracy the distribution of Silurian (including Ordovician = Lower Silurian), Devonian, Mountain Limestone (Middle Mississippian), Millstone Grit (Upper Mississippian or Chester), Coal Measures (Pennsylvanian), and Tertiary (including Cretaceous) rocks and was a very creditable piece of work for that time.

Norwood was succeeded by A. H. Worthen in 1858 and field work was continued until 1872. In 1875 Worthen published a geological map of the State on a scale of about 6 miles to one inch. The geological divisions recognized differed from Norwood's in that the St. Peter sandstone and Lower Magnesian limestone, Trenton Group (Galena-Platteville), Cincinnati Group (Maquoketa shale) and Upper Silurian-Niagara Group (Silurian) are differentiated, the Lower Carboniferous (Mississippian) is not subdivided and the Coal Measures (Pennsylvanian) is shown in two divisions.

The present Illinois State Geological Survey was organized in 1905 and in 1906

a new geological map prepared by Professor Stuart Weller on a scale of 12 miles to one inch was published. This was quite similar to Worthen's map of 1875. A few errors in Worthen's map were in some measure corrected but in some respects this map was less accurate than the preceding one. This map, revised and republished in 1907, differed from the map of 1906 principally by the addition of important alluvial areas and the abandonment of a two-fold division of the Pennsylvanian. Corrections resulting from field studies were made in parts of Calhoun and Jersey counties and to a lesser extent in the vicinity of Rock Island.

A new geological map was prepared and published at a scale of 8 miles to one inch by the Survey in 1912. The changes made were of minor importance except for revisions of the Silurian and various Ordovician boundaries in the northwest corner of the State, the differentiation and separate mapping of the Upper Mississippian (Chester), the more accurate delineation of the Mississippian and Pennsylvanian boundary in southwestern Illinois and the inclusion of additional alluvial areas along the principal streams in the southern part of the State.

The last geological map appeared in 1917. It is principally distinguished from the last by revision of the Silurian and Ordovician boundaries in northeastern Illinois and the much more accurate representation of the distribution of Chester beds in southern Illinois which resulted from the extended field investigations of Professor Weller.

Since 1917 an extensive program of investigations has covered nearly the whole State. This has involved the detailed mapping of many quadrangles, reconnaissance field work elsewhere, and the careful study of many well records. Now, after more than 20 years, a new geological map has been prepared and preliminary copies will soon be ready for distribution. The new map shows the more important alluvial areas of Pleistocene and Recent age, Tertiary and Cretaceous beds of southern Illinois are distinguished separately, the Pennsylvanian system is subdivided into seven parts, and five divisions of the Mississippian are shown. As on the last map, the Devonian and Silurian systems are not subdivided and three units of the Ordovician are recognized. Finally, the small area of Cambrian outcrop now known to occur near Dixon is distinguished.