

## THE STRATIGRAPHIC POSITION OF THE HOING SAND \*

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The "Hoing sand" is a stratum of sandstone and sandy dolomite, that bears oil and gas in the Colmar-Plymouth field of southwestern McDonough County in western Illinois. It was encountered at a depth of 417 feet in an oil test well on the J. Hoing farm and from this farm it received its name.

The "sand" varies from a porous, white to brown, quartz sand to a more or less porous, brown, sandy dolomite. The sand grains are of fine to medium size, apparently having been well rounded and frosted at the time of their deposition but now more or less coated with secondary crystalline quartz. The dolomitic sandstone and sandy dolomite have a matrix of brown dolomite crystals the size of silt. Scattered fragments of brown resinous *Sporangites huronense* are found in both the sandstone and sandy dolomite. The Hoing sand lies on a dark brown, highly bituminous shale of the Maquoketa formation and is overlain by brownish gray, coarsely granular to lithographic limestone in which sand grains of the Hoing sand type are common.

The Hoing sand was originally interpreted by Savage and Blatchley<sup>1</sup> as being of Devonian "Hamilton (?)" age, and the statement was made that the oil occurs "in a sandy limestone that is doubtfully identified with the lower part of the Devonian or the upper part of the Silurian systems." In later studies, after considerable drilling had been done in the field, Morse and Kay<sup>2</sup> definitely assigned the Hoing sand to the base of the Niagaran series. It was interpreted as "sand that was washed into the valleys and low areas when the Maquoketa shale was land surface and exposed to erosion," and that it was "reworked by the Niagaran sea."

Studies of numerous sets of sample well cuttings from Western Illinois bring out the following points regarding the stratigraphic relationships of the Hoing sand: (1) The unconformity at the base of the Silurian does not extend through the Maquoketa shale in this region and the Maquoketa does not have any sand grains of the Hoing sand type which might be left as a residual product of erosion to be concentrated by Silurian seas as the Hoing sand; (2) sand grains of this type are not found in the undoubted Silurian beds anywhere in this region; (3) there are no typical Silurian beds above the Hoing sand in the Colmar-Plymouth field; (4) sand grains of the Hoing sand type are characteristic of basal Devonian strata in this region and elsewhere in Illinois; (5) the Hoing sand in the Colmar-Plymouth field grades upward from porous sandstone into dolomitic sandstone and finally into sandy, dolomitic limestone of undoubted Devonian age; (6) the Hoing sand and the limestone beds above it contain *Sporangites huronense* common in Devonian strata; (7) the Hoing sand horizon is encountered in wells westward from the Colmar-Plymouth field where the Devonian unconformity successively overlaps Maquoketa and Kimmswick formations of Ordovician age.

It is therefore concluded that the Hoing sand is Devonian in age.

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<sup>1</sup>Blatchley, H. S., "Plymouth Oil Field," Illinois State Geol. Survey Bull. 23, pp. 51-53, 1917. (Extraet published 1914).

<sup>2</sup>Morse, W. C., and Kay, F. H., "The Area South of the Colmar Oil Field" and "The Colmar Oil Field—A Restudy," Ill. State Geol. Survey, Bull. 31, pp. 8-35, 1917.