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## PYRITE IN COAL

J. M. LINDLY

A general discussion of this subject is not intended in this article, only the consideration of a deposit of pyrite in coal of a very unusual nature.

Some time in the earlier part of the year of 1922, as I was putting coal into the furnace of our place of business in Winfield, I found imbedded in a large lump of coal an object that very closely resembled a stone ax of prehistoric times.

The coal that we were using at this time had been procured from the Home Lumber Company, one of our local dealers, who had received the coal from some mine east or southeast of East St. Louis, Illinois, probably located about forty or fifty miles from the latter city. This coal was in large pieces. One of these pieces was a little too large to carry to the door of the furnace. I gave it a tap with the sledge. Instead of its breaking into several small pieces, it separated into two almost equal pieces, and in the heart of this large piece or lump of coal lay what appeared to be a stone ax.

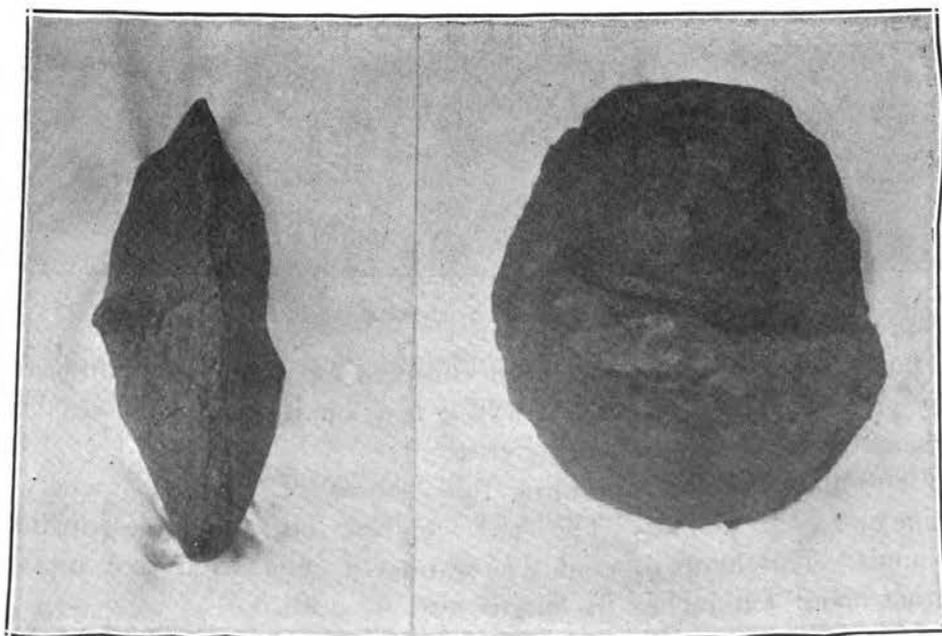


Fig. 1. Left view, edge of "ax." Right view, face of "ax."

This stone ax was seven inches long, six and a half inches wide, and two inches thick but tapering off to thin edges. Its color was light grayish brown. Its specific gravity was about 3.55 which is less than iron pyrite. What was it? It was submitted to the inspection of a few of the instructors of the State University, who expressed the opinion that it was iron pyrite but they had never seen anything just like it. Whilst it could not be a stone ax and belong to the Carboniferous age, its resemblance in outline to a stone ax is so very noticeable, I have not allowed it to be broken so as to disclose the appearance of its interior. One is sometimes prompted to suspect that it may be

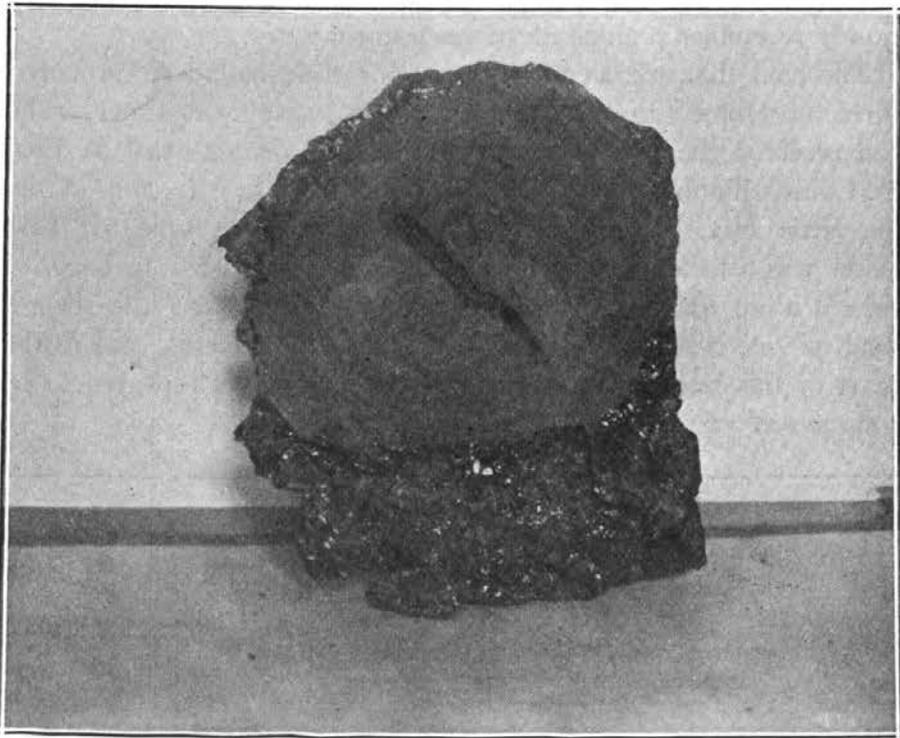


Fig. 2. Interior view of lump of coal showing where "ax" was found.

a lump of clay which had been compressed into small compass by great pressure; yet its edges in a few small places disclose the characteristic brassy color of pyrite.

The lump of coal containing this "stone ax" weighed twenty-nine and a half pounds. The "ax" weighed four and three-fourths pounds. This lump of coal was almost a cube, each face measuring about ten inches in length and breadth.

I showed this specimen to the drayman who had delivered the coal, who brought me a similar specimen, a little larger, but more

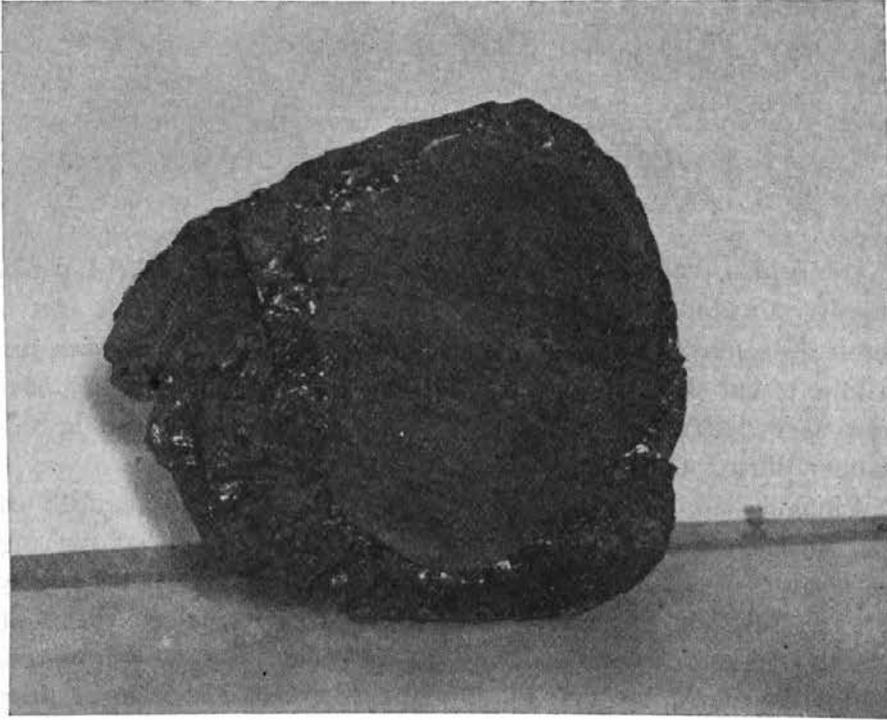


Fig. 3. The other half of lump of coal showing where "ax" was found.

irregular in outline, which shows the characteristic appearance of pyrite quite plainly. This other specimen weighed seven pounds and eleven ounces with a specific gravity of 3.62 and measured approximately eight inches by eight inches with a maximum thickness of two and a half inches, tapering to the edges. This second specimen was not smooth on its surface. The surface of the first specimen was comparatively smooth.

Iron pyrite, or pyrites, bisulphide of iron, is widely distributed in nature, being found in the rocks of nearly every geological age. It is sometimes found in clays, in slates, and in coal measures.

This particular specimen is remarkable for its resemblance to a stone ax in outline, in smoothness, in weight, in color. It was separate and distinct from the coal, and was in no wise connected with the coal. The cleavage was complete.

This specimen of pyrite, together with the lump of coal from which it was taken, will be placed with the State University.