

QK  
M14  
"Reprinted from the Canadian Record of Science, Jan. and April, 1896."

PECULIAR BEHAVIOUR OF CHARCOAL IN THE BLAST  
FURNACE AT RADNOR FORGES, QUE.

By J. T. DONALD, M.A.

In October last the Canada Iron Furnace Company sent the writer a sample of what they termed partly consumed charcoal, containing a large percentage of siliceous matter, and which they stated "had been thrown out at the cinder notch of the furnace in large quantities, unconsumed, and showing fibres, or threads, of a yellow colour, and similar to mineral wool." It was further stated that "the coal, which was made from oak, and, apparently, basswood and elm, seems unfit for furnace work." A superficial examination was sufficient to show that this charcoal was very peculiar indeed. Its unusual weight at once challenged attention; and a closer inspection showed in the specimen a framework in the form of a fibrous mass—not unlike a piece of harsh fibred asbestos. Analysis showed that this fibrous matter amounted to no less than 41.16 per cent. of the coal. The question now was, to account for this large percentage of mineral matter. The only explanation I could offer was to suggest that it might be the result of charring wood that had been partially fossilized, for it was well known that such silicified wood is not uncommon. At the same time this suggestion did not satisfy me; it did not, I thought, cover the fibrous or rod-like structure of the mineral matter—for I had never seen a similar structure in silicified wood. I therefore decided to send portions of the sample to Prof. Penhallow, of McGill, and Mr. W. F. Ferrier, of the Geological Survey. These gentlemen are authorities in their own departments—the former as a botanist, and the latter as a mineralogist and lithologist. It appeared to me that the question of the origin of the siliceous matter of this coal was one of either botany or mineralogy, and not of chemistry. Prof. Penhallow,