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## ON A COAL PLANT FROM QUEENSLAND.

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The plant impressions which I exhibit this evening were taken from the Tivoli Mine near Ipswich, Queensland. It will be observed that amongst the fragmentary mass of leaf impressions in the clay, there are certain disk-like forms of rather an ornamental character. They are shaped like toothed wheels with a small central perforation and a radiate ring of pear shaped perforations near the edge. These disks are very abundant in

some places and suggest the idea of fruits, but there are no known fruits of this character, either living or fossil. A little attention to the plant impressions by which they are always accompanied will explain their origin. These might easily be mistaken for *Phyllothea* a closely allied plant, but they are not of that genus. The whorls of leaves at the free ends of the sheaths are never present. Instead of them we have the toothed closely adpressed sheath of *Equisetum*, which shows us that this is the genus with which we have to deal. Now *Equisetum* is a plant in which the stem is fistular and with one or two rings of longitudinal cavities in its circumference. At intervals the stem is divided by transverse disks, which have this single or double ring of cavities. The outside ring is seldom seen as this is the portion where the disks break away. As they contain a good deal of silica they are easily preserved, they are always found abundantly in the soft marshy ground on which *Equisetum* grows. We have no such plants existing in Australia, but they occur in all other portions of the globe except New Zealand. Formerly they played a most important part in the world's vegetation, and many believe that *Calamites*, *Sphenophyllum*, and *Annularia* belonged to the same family of *Equisetaceæ*.

Disks somewhat resembling the present have been found in the Oolitic Coal of England, and in the Upper Trias of France and Germany. At one time they excited some little controversy as to their nature, but there seems now to be no doubt of their cryptogamic character.

*Equisetum* is not previously recorded from our Australian plant formations. One species is described from the Gondwana beds in India, by Oldham and Feistmantel—*E. rajmahalensis*. This plant somewhat resembles our species, but the differences in the diaphragmata are great.

In a paper I am preparing on the whole of our coal flora in Australia, I shall deal with this species. In the meantime in the

absence of any evidence that it is specifically identical with any described *Equisetum*, I distinguish it as *E. rotiferum*.

Nothing approaching the spore-bearing spikes was seen by me, so that the fructification must remain unknown for the present.

True *Phyllothea* have not been met with by me in these beds.

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