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by 12/1/1898.

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AN EXAMINATION OF THE TASMANIAN GRAPTOLITE
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By S. T. Hall, M. A.

(Read Wednesday, January 12, 1898).

Having been led to investigate the Tasmanian Graptolite record, I thought it might be as well to bring forward the information which I had gathered, especially as some of it is derived at first hand from the gentlemen who announced the discovery of these organisms in the Tasmanian rocks.

In his "Report on the Mineral Resources and on the Permanency of the Lisle Gold-field", Mr. Thureau, in dealing with the "Geological Features", says: "These comprise regularly bedded slates and sandstones from blue to grey in colour; in the former incomplete petrifications (*Diplograpsus nodosus*) were observed, resembling to some extent the Victorian series of Graptolitidae".

Mr. R. M. Johnstone, in a letter replying to my request for further information, tells me that this is the only record of which he is aware, and that he has never seen any specimens of Tasmanian graptolites. Mr. A. Montgomery formerly Government Geologist of that colony, has also kindly answered me to the same effect, and states that he was unable to find any graptolites in the neighbourhood of the alleged find. Taking advantage of the presence of Mr. Thureau in Melbourne, I closely cross-questioned him on the subject, and he good-naturedly gave me all the information he could. The specimen has disappeared, and Mr. Thureau has no notes dealing with it, so that that line of inquiry is blocked. Mr. Thureau, however, says he recollects the specimen perfectly. There was but one, and he is quite certain it was a *Diplograptus*, and nearly 3 inches in length. This he carried to Strahan, and there identified it from memory, no books of reference being available; nor did he at any late time compare it with the figure and description, and shortly after lost it. It is apparent that a specific determination of this kind is valueless. There can, I think, be little doubt that the specimen was a graptolite, and, moreover, one of the *Diplograptidae*; for it must be remembered that Mr. Thureau was familiar with these fossils, having lived for some time in Bendigo, where he had collected them and sent specimens to Sir Frederick McCoy, one being a new generic type.

As regards the species, however, to which Mr. Thureau referred, his specimen, a more unfortunate one could hardly have been chosen. *Diprion nodosus*, as originally described by Harkness, was founded on an imperfect specimen, and shows hydrothecae of a form unknown outside the *Monegraptidae*. Carruthers, without any remark, quotes it as a synonym of *Graptolites becki*, Barr, itself a synonym of *Monegraptus lobiferous*, McCoy, and the reference appears to be universally accepted. Harkness' specimen came from (Upper) Silurian beds, so that we have the peculiar result that chiefly on the supposed identification of an (Upper) Silurian graptolite, the beds at Lisle are referred to Ordovician. If, however, we disregard the specific identification, and accept Mr. Thureau's statement, that the specimen found by him was a *Diplograptus*, then the age may be anything from Lower Arenig to Tarannon. Mr. R. M. Johnson, in his great

work on the Geology of Tasmania, refers the Lisle beds to the lower part of the Lower Silurian (Ordovician, placing them below the Gordon River beds, which do not come into contact with them, and which on other evidence he regards as of Caradoc age. Now, it so happens that a series of Lower Ordovician graptolites had previously been recorded from Victoria, and a perhaps unconscious reference to Victorian beds would appear to have unduly influenced Mr. Johnson in forming his conclusions as to the age of the Lisle slates. The Victorian graptolites taken cognisance of by Lapworth in his series of papers on the geological distribution of these forms, are regarded by him as ranging from Lower Arenig to Llandeilo-Bala (Glenkiln), and a couple of Silurian species had also been recorded by Sir -- Frederick McCoy, a *Monograptus* and a *Gladiolites* (*Retiolites*). This was the state of our knowledge when Mr. Johnston wrote, so that even then were a Victorian comparison desired there was a wide field to choose from. Since then the field has been -- extended, for we can range from Tremadoc to a yet undecided horizon in the Silurian series, quite possibly into the Ludlow: that is using the terms in a loose way, for it is by no means certain that the sequence of our forms will be found in exact accord with that observed in the Northern Hemisphere, or that exact correlation with beds there will be possible.

In conclusion, it may be, it would seem, only reasonable to believe that a *Diplograptus* was found in Tasmania by Mr Thureau, and, as the range of the genus was so great, that no definite conclusions can be drawn from its occurrence.