

than with any other known European Pre-Cambrian group, especially as he found them overlaid unconformably by rocks similar to those found in the Pebidian group. Certainly from his descriptions they could not be classed with the dark hornblendic and red gneisses which the Scotch geologists have invariably claimed to be characteristic of the Hebridean or Lewisian group. Moreover, the very fact that most of the gneisses in the central highlands were found, like the Dimetian of Wales, to be highly quartzose in character, formed one of the chief stumbling-blocks to their being recognized as of Pre-Cambrian age: even Nicol found this a difficulty. Now, however, since the Dimetian rocks in Wales have been recognised, this need offer no difficulty in future, and I feel convinced that ere long the Dimetian and Pebidian groups will be as easily separated from one another even in Scotland as has been the case now in Bohemia through Mr. Marr's researches.

HENDON, N.W., *Feb. 7, 1881.*

H. HICKS.

DISTURBANCES IN THE CHALK OF NORFOLK.

SIR,—I am indebted to Mr. H. B. Woodward for pointing out that Mr. J. E. Taylor was subsequently inclined to suggest a different age and cause for the disturbance at Whitlingham. This had escaped my notice, but supposing that Mr. Taylor's later view, now endorsed by Mr. Woodward, is correct, it does not follow that all disturbances of the Chalk in Norfolk are due to the same cause. The passage of ice has no doubt disturbed and broken up the Chalk in many places; but I still submit that it is difficult to conceive of any *surface* agency being capable of producing such a sharp contortion in a solid scar of chalk like that at Trimmingham.

A. J. JUKES-BROWNE.

HIGHGATE, *Feb. 4.*

SHRINKAGE FISSURES.

SIR,—I would direct the special attention of geologists to the chasms due to the subsidence in Cheshire; of which an excellent sketch recently appeared in the *Graphic*. From these shrinkage fissures we learn how gorges or cañons can be made without denudation—because if such a small thing as the vacancy in a salt mine produces such marked results, how much greater must be the results from vacancies caused by vulcanicity and other natural phenomena? The sketch has an aspect very similar to some of the maps of cañons in Dr. Hayden's magnificent reports.

G. H. KINAHAN.

WE regret to record the death of two well-known and highly-esteemed geologists, namely:—Dr. J. J. BIGSBY, F.R.S., F.G.S.; and Prof. JAMES TENNANT, F.G.S. Notices of these veterans will be given next month.