

skiella, and *Fistulipora*. Of these, *Geinitzella*, *Hexagonella*, and *Dybowskiella* are proposed as new, but their characters are so similar to those of *Stenopora*, *Evactinopora*, and *Fistulipora* respectively, that the author might well have spared the introduction of the new names. A very important feature in the description of these Corals is the way in which their minute structures have been investigated by means of microscopic sections, of which several hundreds were prepared by Mr. Wentzel, the colleague of Prof. Waagen in the authorship of this memoir. A comparison of the beautiful figures given of these sections, with those of nearly allied forms which have appeared in the papers of Prof. Nicholson and Mr. Foord, fully shows the value and absolute necessity of basing the determination of these and other Corals on their minute structural characters. In the interpretation of some of these minute structures, the authors of this memoir differ considerably from Prof. Nicholson; but we are inclined to think that, as regards the nature of the wall in the axial corallites, the view of Prof. Nicholson, that it is really double, better accords with the facts, than the explanation that it is single, and that fracture really takes place between it and the subsequently deposited layers of stereoplasm. Further, the evidence seems insufficient to establish the statement that the spinous structures in many of the Monticuliporidae, the Acanthopores of Nicholson, are merely the young stages of the ordinary corallites. Other points, on which somewhat dogmatic opinions are given, are likewise open to criticism; but we must content ourselves with an expression of satisfaction that these organisms have been so thoroughly and carefully investigated and described; so that this memoir is a refreshing contrast to some of the earlier publications of the Indian Survey, in which the superficial features of the Corals merely have been noticed. A tabular statement of the species described in the memoir would have increased its value and convenience for reference.

G. J. H.

CORRESPONDENCE.

THE ATMOSPHERE OF THE CARBONIFEROUS PERIOD.

SIR,—May I be permitted one word on a question which has been raised as to the greater prevalence of carbonic acid in the atmosphere of this earth in the Carboniferous Period than at later periods, if only to suggest that Prof. Prestwich and his critic seem to be arguing at cross-purposes? There is no reason why both statements should not be true. The real question would then be, as to what would constitute “an excess of carbonic acid.” There is some confusion of thought as regards such two essentially different physiological functions of plant-life and growth as *respiration* and *assimilation* of carbon. This is hardly excusable when we need go no farther than the most trustworthy elementary books (such as those in the London series), to be informed of the essential difference of these two processes, and of necessity of free oxygen for the activity of protoplasm in the plant and animal alike. On general grounds therefore

we should expect that a moderate increase (beyond the mere four parts in 10,000 of our present atmosphere) of the food-stuff (carbonic acid) of plants would be favourable to more rapid production of vegetable tissue; and on the same grounds we should equally expect that such an increase of the same gas, as to practically asphyxiate plants, would be fatal to them. But between the two limits there is ample room for Prof. Prestwich's hypothesis, which is probably well founded.

Why not experiment on the question? It is easy enough.

Sachs (*Lehrb. d. Botanik*, p. 692) states that "experiments on plants (Vegetationsversuche) show that growth and the changes of material necessarily associated therewith only take place in the tissues (of plants) so long as free oxygen has access to them: in the absence of free oxygen (in einer sauerstofffreien Atmosphäre) no growth takes place; and if plants remain a longer time in such an atmosphere they die."

If, however, the percentage of carbonic acid in the present atmosphere were multiplied, say 100-fold, its volume would still be less than one-fifth that of the free oxygen present. This we should scarcely expect to reach the asphyxiation-proportion for plants. The above quotation is from the Leipzig edition (1874) of Sachs' great work. It is probable that in the recent new edition much fuller information is to be found.

WELLINGTON COLLEGE, BERKS.
4th May, 1888.

A. IRVING.

OBITUARY

PROF. HENRY CARVILL LEWIS, M.A., F.G.S.

BORN NOVEMBER 16TH, 1853; DIED JULY 21ST, 1888.

AMONGST the many and varied ties which serve to bind America and England together in friendly union, there are probably none more sincere and reciprocal than those which subsist between the scientific men of the two countries.

As Englishmen we take the warmest interest in the grand development of that wonderful country "on the other side," and the hearty reception given to our American cousins here is returned with equal or even greater warmth by them, whenever we visit the New World.

It is doubtless owing to their greater energy and enterprise that Americans are by far the more frequent visitors to our shores than are we to theirs. This is no doubt largely due to the historical attractions which an old country always offers to a new one, and also the desire to compare our scientific work and institutions with their own.

No one amongst the many young scientific Americans of note has more earnestly cultivated English and European methods of research, or has worked with greater enthusiasm to carry his geological investigations from North America into Britain, than the subject of this brief memoir, Professor Carvill Lewis. H. C. Lewis was