

decalcification would cause a false conception to be taken of the protozoan life.

IV. The *Nodule Bed*; zone *a*, originally exposed at Sutton (see above).—In the exposures now open, as at Foxhall, the mixed and remanié character of the deposit precludes any trustworthy inferences being made from such specimens as might be found.

Note.—Some Foraminifera derived from much older Tertiary beds were found by Mr. Searles V. Wood in the Coralline Crag of Sutton and elsewhere, namely, *Orbitolites*, *Orbiculina*, *Alveolina*, *Peneroplis*, *Amphistegina*, *Nummulites*, and *Orbitoides*; mostly unique specimens.

The value of Foraminifera as a means of establishing stratigraphical correlation, with few notable exceptions, such as *Nummulites* and *Fusulina*, has not perhaps been so fully recognized as it might be.

In the Coralline Crag the most strikingly constant Foraminifer is *Polymorphina frondiformis*, and this species appears to be characteristic of this horizon in England. So far as I am aware, it is not met with in the Antwerp Crag. I have collected and examined material from the Casterlian and Scaldisian of the Kattendyk Docks, but have not found this species; nor is it recorded from the Diestian. May this not prove that the Antwerp beds are of somewhat different age to those of England?

The "constancy and determinability" of the zones established by Professor Prestwich for the Coralline Crag were doubted by Messrs. S. V. Wood, jun., and F. W. Harmer; but the foregoing notes tend to prove that there is good ground for accepting his subdivisions. The exact correlation of isolated patches of the Crag is not in all cases easily established; and further research is needed to finally settle the relationship of some of them.

So far as my researches on the Mollusca of the Crag have extended, and I have collected for several years from almost every exposure now open, they confirm the zonal arrangement of the beds. The band with *Arctica islandica* is apparently constant to zone *d*. At Sutton and Gedgrave, points widely separated in the Crag area, zone *f* is characterized by the relative abundance of species which are either absent or rare in other zones; among such may be named *Bullinella acuminata*, *B. conulus*, *Adeorbis subcarinatus*, *A. pulchralis*, *Trochus obconicus*, *Raphitoma brachystoma*, *Turbonilla elegantior*, *Lima ovata*, and others; while some species, though not so distinctive of this zone, are far more abundant than in any other, such as *Ringicula buccinea*, *Cæcum mammillatum*, *Triforis perversa*, *Astarte Forbesi*, and other species.

NOTICES OF MEMOIRS.

SNOW DUST. By Prof. CLEVELAND ABBE. *Monthly Weather Review*, January, 1895, pp. 15–19. (U.S. Weather Bureau.)

ON the night of January 11–12, 1895, a shower of dust in connection with snow fell throughout a large part of Indiana and Kentucky. The dust may have been intermingled with snow in

the air, or may have fallen with the wind that preceded a second snowfall. At any rate, it was found afterwards forming a layer of dirty snow, between two clean layers of snow, and it was thus easy to gather it free from the underlying soil. A large number of specimens were collected and were submitted to microscopical and physical examination. The dust was found to be largely made up of silt, mixed with organic matter, and was probably derived from some dried-up lake, pond, or marsh to the north-west. Professor Whitney's mechanical analysis shows that it is almost identical with the loess that covers great areas in Illinois, Nebraska, and other adjoining States, and he gives the following Table showing the percentage by weight of the contents of air-dried samples:—

	Moisture.	Organic matter.	Medium sand, 0·50—0·25 mm.	Fine sand, 0·25—0·10 mm.	Very fine sand, 0·10—0·05 mm.	Silt, 0·05—0·01 mm.	Fine silt, 0·010—0·0005 mm.	Clay, 0·005—0·0001 mm.
Rockville, Ind., black snow	3·17	11·98	0·00	0·00	0·00	69·37	5·80	9·68
Virginia City, Ill., upland loess... ..	...	...	0·00	0·01	7·68	61·85	9·60	15·15
Virginia City, Ill., valley loess ... ..	...	...	0·01	0·10	24·84	60·98	2·80	6·15
Nebraska loess formation	5·40	4·96	0·00	0·00	23·14	54·81	2·46	9·45

The different estimates of the amount of dust that fell vary from $12\frac{3}{4}$ to 150 lbs. avoirdupois per acre.

C. DAVISON.

REVIEWS.

I.—CHEMICAL CRYSTALLOGRAPHY. AN INTRODUCTION TO CHEMICAL CRYSTALLOGRAPHY. By ANDREAS FOCK, Ph.D. (Berlin). Translated and edited by WILLIAM J. POPE. (189 and xvi pages, 8vo.) Clarendon Press, Oxford.

MASKELYNE'S "Morphology of Crystals" has been quickly followed by a companion volume issued from the same Press, and dealing, not with the geometrical form, but with the origin, growth, and chemistry of crystals. In a review of the former book it was stated that Crystallography has now developed relationships with other sciences, by which it is invested with numerous practical applications. Fock's little book should be read by every chemist or geologist who wishes to have a thoroughly lucid and reliable account of the manner in which crystallography dovetails into chemistry, and especially of the remarkable problems which have emerged into prominence during the last few years in the region of physical chemistry. Some of these have come into existence