CORRESPONDENCE.

GRANITE CUTTING CRETACEOUS ROCKS—A CORRECTION.

SIR,—In my Presidential Address to the Geological Society in 1885 (Proc. Geol. Soc. vol. xli. p. 75), I speak of having seen in the Alps "perfectly typical granite cutting Lower Cretaceous strata." The remark was founded on a note made in 1874. I am sorry to say that in these words there are two mistakes: the rock is of Tertiary not of Secondary age: the granite is not intrusive. As to the former matter I was misled by a small map, the only one which I then possessed; as to the latter I fell into a trap. The rock looked like a dyke of grey, not very coarse, granite cutting through a dark schistose rock. I was puzzled at not finding more distinct evidence of contact metamorphism; but this solitary slab-like mass in its general form so closely resembled a dyke, that I did not at that time suspect its true nature. Shortly after the above statement was published, a correspondent (I think Prof. Vélain) intimated to me that he believed I had made a mistake; my own doubts kept increasing; and last summer I again visited the spot, which is on the road from Sepey to Ormond Dessus.

The apparent dyke is one of those large erratics which occur not unfrequently in the *Flysch* of Switzerland, and others may be found at no great distance. How it was that I missed them on the former occasion, and thus failed to have suspicions awakened, I cannot understand, unless it be that changes have been made in the road. Possibly, as I had then worked but little at rocks, something else may have diverted my attention. Be that as it may, there can be no doubt that I made a mistake, and hope that there are not many such on my geological conscience. T. G. BONNEY.

NOTE ON MR. HUTCHINGS'S PAPER ON SOME LAKE-DISTRICT ROCKS.

SIR,—As far as the evidence of the rock-sections goes, the rock from Thornthwaite Crag, described by Mr. W. M. Hutchings, may well be an altered trachyte (GEOL. MAG. 1891, p. 543). But the analysis given would indicate a rock nearer andesite, like so many of the "oligoclase-trachytes" of the Auvergne. Considering how trachytes and andesites are associated in the field, and how the same lava-flow may contain varying proportions of porphyritic crystals in various parts, and may consequently yield alkalies in different proportions on analysis of different specimens, I think we must receive with caution the suggestion of an occult rather than a purely chemical cause for the differences between the crystallized constituents of the two types of rock. The analysis referred to by Mr. Hutchings as given in "Aids in Practical Geology" (p. 226 of that book) is that of a *Sodalite*-Trachyte of Ischia. Now I suspect that, had chlorine not been present, this rock would have developed albite and oligoclase in sufficient quantity to bring it at least to the verge of the andesite series. If we call the sodalite

an "accessory" mineral, and deduct the soda required for its formation, we still have an excess of soda over potash in the rock; the monoclinic felspar present at Scarrupata, Ischia, is, no doubt, as is frequently the case, a soda-orthoclase. Such an analysis must not be regarded as typical of simple trachytes, but of the sodalite-trachytes, which, indeed, approach the phonolites. Judged by the bulk-analysis, then, the rock so clearly described by Mr. Hutchings has an affinity with the nepheline-trachytes (nepheline-phonolites) or the trachytic andesites. I fear any trace of original nepheline will have disappeared.

DUBLIN, *5th Dec.* 1891. GRENVILLE A. J. COLE.

CONCRETIONS IN MAGNESIAN LIMESTONE.

SIR,—If I am correct in thinking that Mr. Jukes-Browne considers that Carbonate of Lime was precipitated on the sea-floor during the formation of the Magnesian Limestone beds, I am inclined to agee with him; but this merely deals with the origin of beds of Magnesian Limestone, and does not account for the formation of the Concretions. If, however, he intended to suggest that the moisture contained in the deposit held the Carbonate of Lime in solution, I think the amount would be quite inadequate to account for the thick beds of concretions, and this method of origin would not explain the bedding planes which pass uninterruptedly through matrix and concretions alike. E. J. GARWOOD.

THE LATE P. HERBERT CARPENTER, M.A., D.Sc. (CAMB.) F.R.S., F.L.S.

The Editor has received the following note from Mr. FRANK SPRINGER, joint-author with Mr. Wachsmuth of numerous works and memoirs on the N. American Crinoidea. It is a high tribute of regret, regard and esteem from the United States for the loss of one whom we all deeply and sincerely mourn in England.—EDIT. GEOL. MAG.

DEAR Dr. WOODWARD,—It is with the most profound regret that I have learned the particulars of the death of our lamented friend Carpenter. It is difficult to aptly express the great loss it is to Wachsmuth and myself. Carpenter's rare scientific attainments and broad learning are known wherever Zoologists exist, but to us, who have been in constant correspondence with him for fourteen years, I think his untimely death brings a keener sorrow than to any outside of the circle of his intimate friends and relations. We had the greatest reason and opportunity to admire and appreciate him. Notwithstanding our many animated controversies in print upon disputed questions of Echinoderm morphology, and still more numerous and earnest battles in private correspondence, in which many a promising theory was warmly advocated, combated, and given up on both sides, our acquaintance long ago assumed the phase of cordial friendship and high personal regard. This was still more firmly cemented by my visit to him, while in England in 1887–8, and we feel his loss now as a personal bereavement. We