CORRESPONDENCE.

"CONE-IN-CONE."

SIR,—I am glad to observe in the short article on "Cone-in-cone," by Professor Newberry, M.D., in the December Number of the GEOLOGICAL MAGAZINE for 1885, that he at one time was inclined to look upon that structure as due to "the escape of gases through a pasty medium." I think that if he had the opportunity of studying the large series of specimens that I have now assembled, and the transparent sections of the cone structure that I have prepared, he would still be inclined to favour that view as an explanation of the phenomena that they present, rather than the one he now adopts, viz. "an imperfect crystallization" of the deposit in which it is found. Professor Newberry, after referring to a number of cases of cone-in-cone structure that had come under his observation (some of which apparently differ from what I have described), concludes by stating that these examples "seem to me to be incompatible with the theory that cone-in-cone is caused by pressure, or the escape of gases, and appear rather to confirm the conclusion that it is due to an impeded tendency to crystallization." He, however, in the article in question, offers no evidence in support of this crystallization theory, nor does he explain in any way the peculiar structure and arrangement of the cone layers. Those supporting a crystallization theory have not referred to any known law of crystallization, which would account for a structure agreeing with what is seen in the best-preserved specimens of our Scottish cone-in-cone, or which would satisfactorily explain all that is represented in the external structure of the cones, and their terminations on the surface of the bed, as is briefly noted in the short abstract of the paper I read to our Glasgow Geol. Soc., and printed in the June Number of the GEOL. MAG. for 1885. In the abstract, to which I would refer your readers, I have endeavoured to indicate what is seen in both the internal and external structure of the cones, but which I explain more fully in my paper, and I do not think that in either I have ventured to hazard any explanation that is not fully warranted by what the specimens reveal.

During the progress of my investigations, I have not wholly relied upon my own judgment in coming to the conclusion that the cone-in-cone structure was due to the escape of gases generated in the sediment, but that from time to time I have had the opportunity of submitting specimens and sections of the structure to Dr. Young, Prof. of Geology; Prof. Sir William Thomson, President of the Glasgow Geol. Soc., and his brother Prof. James Thomson, who has paid some attention to rock structures; likewise to Mr. Ferguson, Prof. of Chemistry in this University, and to others, on whose opinion I could rely, and I am pleased to be able to state, that they are all inclined—so far as the specimens noticed in my paper are concerned—to agree to the explanation I have given as to the probable origin of the structure. They also agree with me in thinking that none of the agencies to which cone-in-cone structure has been

usually ascribed—such as crystallization, pressure acting on concretions in the process of formation, or chemical deposition of sediment—will ever explain the points of structure and other characters seen *in the specimens that I have selected for description.*

Hunterian Museum, John Young.
University, Glasgow, *Jan. 5th*, 1886.

ON A NEW PERISSODACTYLE UNGULATE FROM WYOMING.

Sir,—In the Geological Magazine for February, 1886, it is stated, p. 50, that no Perissodactyle mammal was known "to possess tubercular teeth." Professor Cope does not supply the characters to which his term 'tubercular' is applicable. If he would kindly refer to p. 362 of my "Palæontology" (2nd ed. 1861), enlarged views of the molars of both jaws of a genus of Perissodactyles (*Pliolophus*), from Eocene, will be found. A still earlier example of 'tubercular' molars, in the genus *Hyracotherium*, is described and figured in "British Fossil Mammals and Birds," 8vo., 1846, p. 422, cut 166: also from the 'London Clay.'

Permit me to add that my estimate of the claims of Elephants and Mastodonts to rank as an 'Order' rests upon the multilamellate structure, size and succession of their 'grinders,' subordinate to which dental character may be cited a vertebral one, necessitating their special instrument the proboscis. The pentadactyle character is common to *Proboscidia* with many Rodent genera, as well as with the older Eocene members of the Coryphodont family, characterized by Lophiodontoid modifications of the true molars. These teeth afford the truest indications of affinity in the Ungulate series. The diminutive Rhinocerontoid represented by the genus *Hyrax* as little determines by molar characters an ordinal distinction form *Acerotherium* as do the modifications of teeth and limbs in *Bradypus* support an ordinal distinction in the Megatherioid family.

Richard Owen.

THE "ALASKA GLACIER."

Sir,—In reference to the description of the *Great Glacier* in Alaska, in "Nature" (*Jan. 28th, 1886*), I may draw attention to the letter of Mr. J. Melvin in the same number, which would appear to throw light on the subject of the progressive changes in it. The *ridges* delineated in the diagram of the Glacier as lying between the body of the Ice and the hill-side would seem to be analogous to the *Parallel Roads* in Norway valleys, only they are formed on the flat instead of the slope.

The body of the Glacier seems evidently to have *contracted itself* in consequence of loss of substance by melting underneath, and withdrawn itself by *these decided starts* from the hill-side, and left the ridges as relics of its foundations on the bottom of the valley.

Probably the Glacier ages ago was *quite flat* on the top, and reached across to the top of the morainic slope on the hill-side, and it has since lost great bulk below by *ground melting*, which by overstretching has caused the cracks or *crevasses* on the upper