

that the origin of the slump and of the graded bed which overlies it have something in common. Their close association suggests that the sliding of a mass of sediments caused the water to become muddy and that shortly afterwards the cloud of sediment settled on the slump. Or an earthquake set the muds moving and also disturbed the sediments on the sea floor. In the only case, however, where the point of origin of a slump has been described, the graded bed occurs only over the slump and does not extend on to the sea floor above its point of origin.

It is clear, therefore, that a given slump bed was formed at a time between the deposition of the underlying sediments and that of the overlying sediments; in this sense the slumps are contemporaneous with sedimentation. Further, since both the overlying and underlying sediments are admitted to be of marine origin, it would be surprising if the slumps are not also of that origin. That they are subaqueous is proved by the deposition upon them of the graded bed forming the base of the overlying sediments; it is also evident that the top of the slump was the actual floor of the sea when the sedimentary grains of the graded bed began to shower down upon it.

Examination of a slump will usually reveal that pieces of included sediments lie in it at all angles, and not uncommonly overturned or even recumbent folds have been truncated at the base of the graded bed. The slump beds have therefore acquired their structures before the overlying beds were laid down upon them.

It would be of great interest if anyone can suggest any way of producing these manifold structures in muds on the sea floor except by sliding.

THE SEDGWICK MUSEUM,  
CAMBRIDGE.  
6th March, 1953.

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#### ACCURACY IN GEOLOGICAL LOCALITIES

SIR,—In this Magazine (lxxxix, 152) A. M. Davies sets right Cossman's view by saying that the interesting Miocene gastropod *Pereiraia gervaisi* is found in Slovenia and not in Ukraina. Ivandel or correctly Ivandol ( $45^{\circ} 48' 48''$ ,  $15^{\circ} 19' 20''$  E. Greenwich), however, should not be retained in the geological literature, as the locality of the gastropod, for the valley (one mile long and without settlements) is little known even in Slovenia. There are some more localities where this gastropod has been found, as for instance: Stara vas, Zgornje Vrhpolje, Šmarje, Orehovica, Cerov log, all of them together with Ivandol are near Št. Jernej. In Slovene geological literature Št. Jernej is indicated as the locality for this gastropod, and it would seem more appropriate to use it in the foreign literature, too.

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15th March, 1953.

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#### GRAVITY MEASUREMENTS OVER THE NORTHERN PENNINES

SIR,—The announcement by J. Hospers and P. L. Willmore of the discovery of a closed area of negative Bouguer anomalies in and around Upper Weardale and the preliminary account of more detailed work by M. H. P. Bott and D. Masson-Smith (*Geol. Mag.*, xc, 117–126, and 127–130) are both most welcome. There will, I am sure, be general agreement with the authors that the field of negative anomalies is probably the expression of the existence of a buried granite mass. But not everyone will so readily agree with the next step taken by the authors, namely that the "Weardale granite"—assuming it to be real—was the source of the mineralization of the area. Taking this step precludes the possibility that the "granite" may be pre-Carboniferous,