sisted mainly of a compact 'mortar,' of a bluish colour, passing into a thin—evidently superficial—layer, much softer and more creamy in consistence, and of a yellowish colour. Under the microscope the surface-layer was found to consist chiefly of entire shells of *Globigerina bulloides* (Fig. 2, p. 22), large and small, and fragments of such shells mixed with a quantity of amorphous calcareous matter in fine particles, a little fine sand, and many spicules, portions of spicules, and shells of Radiolaria, a few spicules of sponges, and a few frustules of diatoms. Below the surface-layer the sediment becomes gradually more compact, and a slight grey colour, due probably to the decomposing organic matter, becomes more pronounced, while perfect shells of globigerina almost entirely disappear, fragments become smaller, and calcareous mud, structureless and in a fine state of division, is in greatly preponderating proportion. One can have no doubt, on examining this sediment, that it is formed in the main by the accumulation and disintegration of the shells of globigerina—the shells fresh, whole, and living in the surface-layer of the deposit, and in the lower layers dead, and gradually crumbling down by the decomposition of their organic cement, and by the pressure of the layers above—an animal formation in fact being formed very much in the same way as in the accumulation of vegetable matter in a peat bog, by life and growth above, and death, retarded decomposition, and compression beneath.

In this dredging, as in most others in the bed of the Atlantic, there was evidence of a considerable quantity of soft gelatinous organic matter, enough