of the floor of the ocean is covered with dead calcareous shells (Globigerina Ooze) fallen from above, and large areas also are composed of siliceous skeletons (Diatom Ooze and Radiolarian Ooze). These oozes consist of inorganic material which has been precipitated by biological agencies out of solution in the sea. Such deposits play but an insignificant part in lakes. It is clear that, even if the requisite forms of life were present, there could not be much precipitation of calcium carbonate in lakes, seeing that there are only 30 to 40 parts per million of calcium in normal soft lake-water, whereas in sea-water there are about 400 parts per million. Apart from the sparse fragments of large shells occasionally found near shore, calcareous matter seems never to exist in the deposits of Scottish mainland lochs.

Such calcareous deposits as have been found in island lochs are products of vegetable life, and are thus comparable to the coccoliths and rhabdoliths of deep-sea deposits. Calcium carbonate secreted by plants, especially algæ, is a not unimportant constituent of Danish lake deposits.[1] On the whole, however, it may be said that, whilst submarine lime is wholly of biological, that of lake-deposits is mainly of detrital, origin.

Diatomaceous deposits are occasionally met with in the lochs, as recorded above. As compared with oceanic Diatom Oozes, they contain more clayey silt, and they are free from the lime which invariably accompanies their oceanic analogues. There is reason to believe that peaty water such as that of the lochs is, if anything, richer in silica than that of the ocean. If, in spite of this, diatomaceous lake-deposits are somewhat uncommon, the reason may be either that sea-water is relatively a kindlier medium for this form of life, or that dead Diatom frustules are redissolved more rapidly in loch water.

Peaty water carries in solution a certain amount of iron existing as soluble humate, a solute which is absent or insignificant in ocean-water. Brown Mud, as we have seen above, appears to be partially derived from this source, and would in so far be classifiable as a precipitated deposit. Anything like Brown Mud is unknown at the bottom of the open sea, since precipitated humus is rapidly cleared away by bottom-living animals. A comparison of Loch Ness with a similarly shaped and environed salt-water loch, such as Loch Fyne, is instructive in this respect. Both lakes exist under similar conditions, but the former holds fresh water and the latter sea-water; the result is that Brown Mud accumulates at the bottom of Loch Ness, whilst in Loch Fyne the bottom is kept comparatively clean and free from vegetable organic matter.

(3) Decomposition of minerals is much the same process in oceanic as in fresh water. Alkalies, calcium, and magnesium are eliminated,

[1] Wesenberg-Lund, *Studier over Sökalk*, etc., p. 154, Copenhagen, 1901.