

occasionally they are cemented into nodules, several centimetres in diameter, by a phosphatic substance; the grains are always rounded, often mammillated, hard, dark green, or nearly black, with sometimes a dull and sometimes a shining surface. Mixed

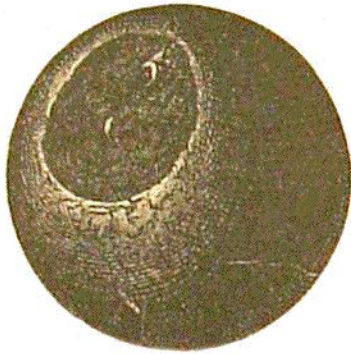


FIG. 130.—BLACK SPHERULE WITH METALLIC NUCLEUS (1<sup>st</sup>).

"Challenger" Station 285, South Pacific, 2375 fathoms.



FIG. 131.—BLACK SPHERULE WITH METALLIC NUCLEUS (2<sup>nd</sup>).

"Challenger" Station 9, North Atlantic, 3150 fathoms.

with the rounded grains are pale green, pale grey, white, yellow and brownish internal casts of the cavities and chambers of calcareous organisms, often associated with an amorphous organic matter of a brownish-green colour.

Glaucanite is principally developed in the interior of foraminiferous shells and other calcareous structures, the initial stages in the formation of glaucanite being probably due to the presence of organic matter in the interior of these shells. Glaucanite is



FIG. 132.—SPHERULE OF BRONZITE (3<sup>rd</sup>).

"Challenger" Station 338, South Atlantic, 1990 fathoms.

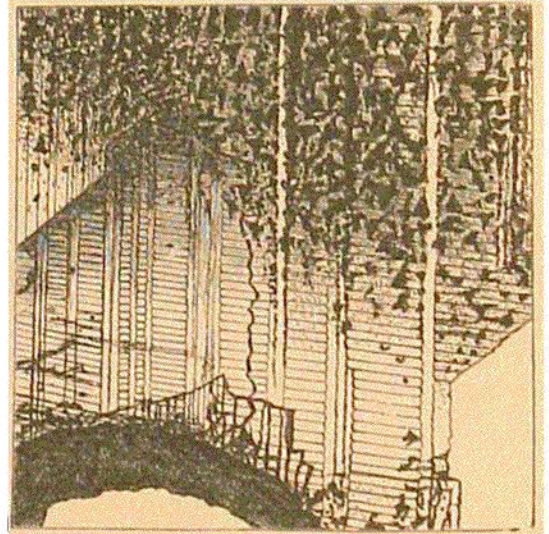


FIG. 133.—A LAMELLA OF A SPHERULE OF BRONZITE (highly magnified).

"Challenger" Station 338, South Atlantic, 1990 fathoms.

always associated with terrigenous mineral particles and rock-fragments, the decomposition of which, under the action of seawater, would yield the chemical elements subsequently deposited in the form of glaucanite in the chambers of foraminifera and other calcareous organisms. The excreta of echinoderms appear sometimes to be converted into glaucanite.