mineral and the peculiarities of its occurrence, it is impossible to be sure that the analyst has always been dealing with a pure substance; indeed, microscopic examination of samples that have been submitted to analysis shows that there is often an admixture of foreign mineral particles, and that the individual grains of glauconite in the sample do not always present uniform external characters; this in all probability accounts largely for the variable composition. The following analyses of glauconite formed in modern seas present in their principal features a great analogy with the composition of the same mineral in geological formations. Amongst the numerous analyses of glauconite that of a specimen of the chalk of New Jersey by Sterry Hunt[1] gives the closest approximation to the figures obtained in analysing what we consider typical modern glauconite (Station 164B, Nos. 86, 87). But a glance at the analyses shows how much this mineral may vary in composition, although the physical characters seem to be the same. These divergences are more marked when we compare the figures of the analyses of paler grains associated with the darker ones at the same station (No. 84 compared with Nos. 86 and 87). All that can be said is that the glauconite now forming on the bottom of the sea is, like the glauconite of geological formations, a hydrous silicate of potash and of ferric oxide, containing always variable quantities of alumina, ferrous oxide, magnesia, and often lime. If we compare the figures of the two analyses with the mean composition of glauconite given by Haushofer,[2] we see that all the percentages, except those of silica and perhaps water, differ greatly from the figures given in our analyses. The analysis No. 88 resembles that of decomposed glauconite, and the composition of this specimen may be compared with that of the altered glauconite of Kressenberg, given by Haushofer[3]; the high percentages of peroxide of iron and water point to a decomposition of this mineral which has been transformed into limonite, as is often the case in glauconite from the geological strata, with loss of silicic acid and of potash, but this interpretation can hardly be given for this specimen, which consisted of casts from a Coral Sand off the Great Barrier Reef of Australia. There can be no doubt that glauconite is a mixture, and this fact not only renders it difficult to fix its constitution, but also renders difficult any interpretation of the mode of formation.

We give here the analyses of some specimens of glauconite collected during the expedition. The substance used for Analysis No. 84 contained 65 per cent. of white, pale grey, and some yellow casts, 20 per cent. of pale green casts, 11 per cent. of dark green casts, along with 4 per cent. of mineral particles and siliceous organisms. The substance used for Analysis No. 85 contained 15 per cent. of white, pale grey, and yellow casts, 35 per cent. of pale green casts, 45 per cent. of dark green particles, together with 5 per cent. of mineral particles and siliceous organisms. The substance used for Analysis No. 86 contained 10 per cent. of white, pale grey, and yellow casts, 25 per cent. of pale

[1] Sterry Hunt, Mineral Physiology and Physiography, p. 198, Boston, 1886.
[2] Haushofer, *Journal f. prakt. Chemie*, Bd. xcvii. pp. 353–364, and Bd. xcix. pp. 237–8, 1866.
[3] Haushofer, *loc. cit.*, Bd. xcvii. p. 358.