still think, however, that many interesting points yet remain to be discovered in the Carboniferous Polyzoa, both as to the perfect form of cells and other points of internal structure. I say so all the more readily from a knowledge that all the facts of interest noted in this paper, whether regarding the discovery of new points of structure in the Polyzoa, or the descriptions of new species by Dr. Young, myself, and other investigators, are the result of work conducted at intervals only during the past six years. I have no doubt, therefore, that continued research will reveal many other points of interest and value regarding this till lately comparatively unworked but extensive and interesting group.

[ABSTRACT.]

XXIX.—*On ROCKS and MINERALS in CORNWALL.*

By JAMES WHITE.

[Read 13th November, 1879.]

MR. WHITE said that the strata in Cornwall are chiefly Devonian, but are much broken up and metamorphosed by the action of igneous rocks, traps, porphyries (locally known as “Elvans”), and granites. These latter are of many varieties of hardness and texture, and are used—the harder, for ornamental and heavy building purposes, like our own Aberdeen, Peterhead, and Mull granites; the softer and more earthy varieties, for the manufacture of china clay, of which about 80,000 tons are produced annually. London Bridge, and Waterloo Bridge, in London, and the docks at Chatham, are built of Cornish granite. The chief feature of the county, however, and that which has brought Cornwall its greatest riches, is the abundance of its metallic veins. The Cornish mines have been known and worked from time immemorial, in the ordinary, though not the geological, sense of that well-worn phrase; it is known that long before the Christian era Phœnician sailors visited the coast and other parts of the county for the purpose of trading in tin and various other metals. Tin occurs nowhere else in the British islands, and is here found in two forms—stream tin and vein tin. The former is found from the size of small grains to lumps of 10lbs. to 12lbs. weight, while occasionally large masses of rock occur richly impregnated with the mineral. These are found scattered over the surface of the hard

rocks and overlaid by soft deposits, and are also got in gullies and water-courses. As stream tin is found principally on the south coast—or to the south of the tin veins, which run chiefly east and west,—it seems probable that it once formed portions of veins broken up and scattered by denudation, and, after being rolled about on the rock surfaces, was covered by the overlying deposits. It is usually of purer quality than the vein tin, and is now becoming scarcer. So thorough has been the search for it, that it is stated there is not a square foot of the south coast which has not been turned over repeatedly for examination, workings which have been abandoned being again and again re-opened as the supply diminished and an enhanced price paid. It is, therefore, impossible now to find a fresh section anywhere. It may easily be imagined that there is not much natural beauty remaining in the scene of these workings. One traveller describes the appearance of the country as “bare, desolate, and impracticable, broken and dug into numerous hillocks, sometimes due to primeval stream-works, sometimes to the more modern search for metals,” and he goes on to state that “the drive from Launceston to Penzance, a distance of 70 miles right across the county from east to west, is over one of the most dreary strips of earth to be found anywhere in the British Islands.” Vein tin occurs, as its name implies, in veins which have been formed in cracks and fissures of the rocky crust of the county. These veins, or “lodes,” as they are termed, intersect all kinds of strata, igneous and aqueous alike, and are of all degrees of thickness, from the merest film to that of 30 or 40 feet. They are sometimes mined to enormous depths; one of the deepest is Tresavean Mine, which is 320 fathoms, a depth nearly equal to five times the height of St. Rollox great chimney. The temperature at this depth is about 100 degrees Fahrenheit, and the miners work their eight hours per day naked to the waist. Copper, lead, antimony, hematite iron, and other minerals are also worked—copper, after tin, being the most abundant, and being usually found at lower depths than that metal. The Cornish copper-mines yield about 90 per cent. of all that is found in Britain, and about 30 per cent. of the whole European supply. The total number of metalliferous mines and stream-works in Cornwall is 224. Mr. White also spoke of the micaceous trap, micaceous iron ore, tourmaline schist, potstone, &c.