

margin about one-third longer than the upper, nearly straight, and inclined to the axis at an angle of about 40° , to which some specimens indicate the prolongation of the cells by fine lines; four to five denticles in a space of two lines.

Fragmentary specimens, imperfect at each end, occur eight or nine inches in length, without perceptible difference in the above diameter, which with the size and shape of the denticles separate it from its congeners.

Position and Locality.—Common in the black flags of Horton in Ribblesdale; in the flags under Moel Seisiog; in the black schists of Balmae Shore, Kirkcudbright; at Lockerby, Dumfriesshire; in the Skiddaw slate of Haykin Gill, and of Knockmurton, near Lamplugh Cross, Cumberland; in the slate of Scawgill; schists of Cautley Craggs, above Sedburgh; Craig ddu Allt, Llangollen. A variety apparently of this species, a little larger in all its parts, but possibly from great compression, occurs abundantly in the black slates over the Iron Works at Tremadoc, Merionethshire.

GRAPTOLITES SEDGWICKII (*Portl.*) Pl. 1. B. fig. 2.

Ref.—*Geol. Rep.* t. 19. f. 1, 2, 3, and 6.

Sp. Ch.—Several inches long, (extremities unknown); lateral axis capillary; flattened space between the axis and the denticles rather less than half a line wide, from the axis to the tips of the denticles nearly one line and a half; cell-denticles very long and slender, nearly straight, and almost at right angles to the axis; flat space between their bases equal to the width between their bases and the axis; four denticles in a space of two lines.

This species is distinguished at a glance from all but the *G. convolutus* (*His. Sp.*) by the very long, slender, and nearly horizontal denticles.

Col. Portlock mentions (*Geol. Rep.* p. 391) straight fragments eleven inches long, which I think I remember his shewing me. Straight fragments now figured are upwards of three inches long, but with them occur some more or less curved, making an approach to the *G. convolutus*, with which it is nearly identical in the size, shape, and peculiar proportion of the denticles, seeming strongly to countenance the suggestion of that author himself, that the latter species may be only the inrolled tip of the former. The figures given in the above-quoted work do not exactly represent the character of the Irish species: I have therefore re-figured it from Scotch examples, satisfying myself of the identity by direct comparison with Tyrone specimens.

Position and Locality.—Not very uncommon in the black slates of Lockerby, Dumfriesshire.

One specimen in the olive-slates of Greiston on the Tweed, which had apparently been dead before petrification, is about seven inches long, slightly flexuous, and has a peculiar aspect from the long attenuated tips of the cell-denticles being absent almost entirely; the size and peculiar proportions of the remaining portion is however identical with normal examples, and in one or two places the remains of the filiform ends may be traced.

Explanation of Figures.—Plate 1. B. fig. 2. Portion natural size from Lockerby (to shew the true form of the denticles.) Fig. 2 a. Do. Portion magnified six diameters.

GRAPTOLITES TENUIS (*Portl.*) Pl. 1. B. fig. 4 and 5.

Ref.—*Geol. Rep.* t. 19. f. 7.

Sp. Ch.—Several inches long, extremities unknown, slightly more than the third of a line wide; serratures formed by the ends of the cells comparatively remote and large, their lower margins long, straight, very oblique, (forming an angle of about 20° to 30° with the axis), the upper margin about half the length of the lower, slightly concave, nearly horizontal; four cell-denticles in the space of two lines.

This species is very distinct, by its comparatively remote denticles, and very small width. Professor Hall has figured fragments, imperfect at both ends, nearly eight inches long, retaining the above diameter. As none of the published figures are quite exact, I have given a figure of a Scotch example.