directive energy was never displayed in the same general way on the argillaceous rocks of later systems, and that even among the rocks of the slate system itself, the lower ones are almost universally cleavable, the upper ones only partially so, and that chiefly along the line of great disruptions of the strata, as *e. g.* the Craven fault, to whose plane of fracture (E. S. E.) the cleavage planes of the slates are parallel. Indeed, we think there is good reason to adopt, provisionally, the rule stated by Sedgwick — that the strikes of cleavage correspond to the strikes of the strata, though their inclination differs in amount, and even in direction; and this leads almost positively to the inference that the one is dependent on the other. My own observations have led me formerly to adopt the opinion that the divisional planes of slate determined the line of a remarkable elevation of strata (Craven fault *); but the parallelism of cleavage planes across contortions of strata, of which striking examples are given by Sedgwick, in his Memoir on the Structure of Rocks (*Geol. Transact.*), seems to complicate the question. † Numerous observations should therefore be made upon the plan proposed in the Guide to Geology, 3d edition, for the procurement of geometrical data on this curious subject.

Silurian System.

Composition. — The rocks of the Silurian system, as it is exhibited in the country investigated by Mr. Murchison (the whole Welsh border and large tracts in South Wales) may be said to contain types of the usual sedimentary aggregates — argillaceous, arenaceous, calcareous; nor is there any very clear or exact definition by which they can be discriminated in the

* It is curious to observe, along the side of this magnificent fault in Giggleswick Scar (Settle), the mountain limestone crossed by many divisional planes, which cause it to split parallel to the fault, with a kind of rude cleavage.

† A trap dyke in the Penrhyn quarries does not affect the slaty cleavage which it traverses at right angles.