

by Fleming and Carruthers* to be casts of cavities filled with fluid, abound in the shales of the Carboniferous and Devonian. They are, no doubt, in most cases the results of the pressure and consolidation of the clay around small solid bodies, whether organic, fragmentary, or concretionary. They are, in short, local slickensides precisely similar to those found so plentifully in the coal underclays, and which, as I have elsewhere † shown, resulted from the internal giving way and slipping of the mass as the roots of *Stigmaria* decayed within it. Most collectors of fossil plants in the older formations must, I presume, be familiar with appearances of this kind in connection with small stems, petioles, fragments of wood, and carpolites. I have in my collection petioles of ferns and fruits of the genus *Trigonocarpum* partially slickensided in this way, and which if wholly covered by this kind of marking could scarcely have been recognised. I have figured bodies of this kind in my report on the Devonian and Upper Silurian plants of Canada, believing them, owing to their carbonaceous covering, to be probably slickensided fruits, though of uncertain nature. In every case I think these bodies must have had a solid nucleus of some sort, as the severe pressure implied in slickensiding is quite incompatible with a mere "fluid-cavity," even supposing this to have existed.

Prof. Marsh has well explained another phase of the influence of hard bodies in producing partial slickensides, in his paper on *Stylolites*, read before the American Association in 1867, and the application of the combined forces of concretionary action and slickensiding to the production of the cone-in-cone concretions, which occur in the coal-formation and as low as the Primordial. I have figured a very perfect and beautiful form of this

* "Journal of the Geological Society," June, 1871.

† *Ibid.*, vol. x., p. 14.