

conforming round their extremities. The Utica slate appears to be wholly in the more southern and narrower trough; none of it was observed in the southern; but the southern trough is again subdivided into three shallow subordinate troughs, which, however, have little effect on the general configuration. The anticlinal forms which separate them, run nearly parallel to the previous one, and cause the Potsdam sandstone and subjacent gneiss to appear through the Calciferous sandrock; on the more northern axis, the exposures of these occur in the north-western part of Montague and North Elmsley and western part of Mountain; and on the more southern, in the southern part of Oxford and South Gower.

The eastern side of the Beauharnois tongue of sandstone is bounded by the same succession of formations, as that on the western, as is proved by an examination of the sequent deposits on a line from Beauharnois to St. Louis Rapids, along the south side of Lake St. Louis. The sandstone of Beauharnois County, and the neighbouring State of New York, is from 300 to 700 feet thick. In the lower part it contains many beds of conglomerate with quartz pebbles; it has some red layers, but towards the top it becomes a fine grained hard white sandstone, and at the summit is interstratified with calcareous beds forming a passage to the rock which overlies it. In this part it is abundantly marked over considerable surfaces, by what the geologists of New York have called *Scolithus linearis*, which consists, when the rock is weathered, of straight vertical cylindrical holes of about the eighth of an inch in diameter, descending several inches into the stone; and when the rock is unweathered, of corresponding solid cylinders, composed apparently of grains of sand cemented by a slightly calcareous matrix, more or less tinged with peroxide of iron. The origin of these cylinders is not quite certain; some suppose them to be the remains of fucoids, others of corals, and they may be ancient worm-holes; but however impressed on the stone, they characterise the upper part of the formation very extensively.

With this part of the formation also are associated many indications of what have been considered fucoids or marine plants, and one form among others, in which they occur, presents a reticulating arrangement of stems spreading over some of the surfaces, the meshes of the net work being four, five or six sided, and sometimes when largest measuring fourteen inches in diameter, while the rope-like stems which divide them are an inch wide, standing out half an inch in relief on the sandstone. The mesh-like compartments are sometimes filled with shale, and the forms a good deal resemble crackcasts, and might be taken for such, were not similar forms sometimes traceable on splitting open closely fitting surfaces of sandstone, where no shale is present between; and were not smooth surfaces of an arenaceous-bituminous limestone in the succeeding formation met with, presenting thin black bituminous pellicles, arranged in similar reticulating figures both large and small.

In Lansdowne and Bastard, not only do scolithus and fucoids exist in abundance in the upper part of the formation, but Mr. Murray has found associated with them *Lingula antiqua* characterising the rock, as this species does at Hammond in New York. No lingulæ came within my observation, but several surfaces were found impressed with the track and footsteps of an animal, which, from the interpretation given at a meeting of the Geological Society, by the distinguished comparative anatomist, Professor Owen, of the first specimen (a plaster cast of the original) placed before him, appeared destined to carry the vertebrated type of animal life back to a much more ancient date than had been supposed by most geologists.

The occurrence of the track near the mill on the the St. Louis River at Beauharnois, had been pointed out to me by Mr. Abraham, then editor of the *Montreal Gazette*, who had introduced a notice of it in his Journal, in which he compared it to the track of a tortoise. Professor Owen's opinion tended to confirm this, but having lately submitted to him the original stone, as well as two additional original surfaces, and casts of a vast number of other impressions of the same order, discovered by Mr. Richardson, a very diligent and persevering explorer, who has been employed on the Survey for successive seasons, almost from its commencement,