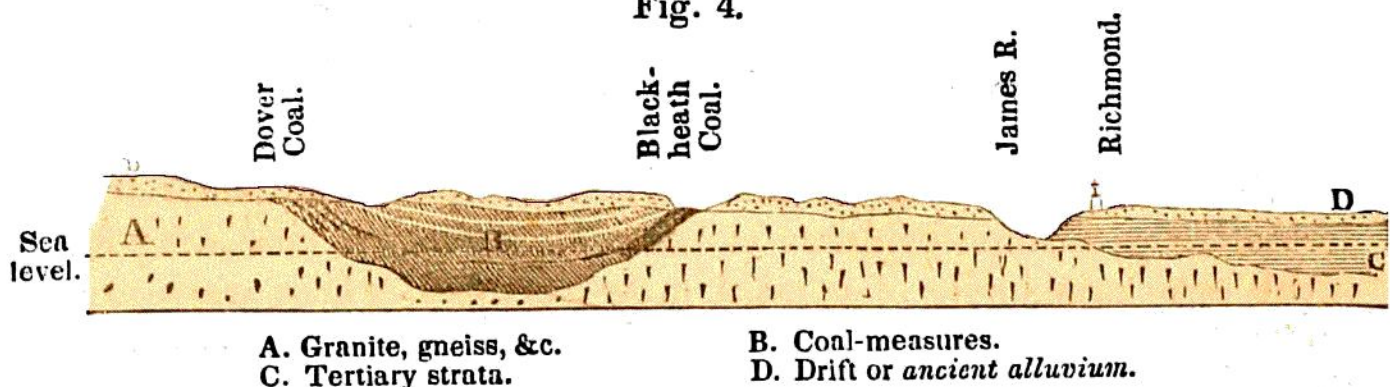


A great number of fossil fish, chiefly referable to two nearly allied species of a genus very distinct from any ichthyolite hitherto discovered elsewhere (a ganoid with a homocercal tail), occur in the lower strata, with a few shells; but they afforded me no positive characters to determine whether the deposit was of marine or fresh-water origin. Above these fossiliferous beds, which probably never exceed 400 or 500 feet in thickness, a great succession of grits, sandstone, and shales, of unknown depth, occur. They have yielded no coal, nor as yet any organic remains. No speculator has been bold enough to sink a shaft through them, and it is believed that toward the central parts of the basin they might have to pass through 2000 or 2500 feet of sterile rocks before reaching the fundamental coal-seams.

The next ideal section will show the manner in which I suppose the coal-field to be placed in a hollow in the granitic rocks, the whole country having suffered by great denudation, and the surface having been planed off almost uniformly, and at the same time overspread by a deep covering of gravel with red and yellow

*Section showing the Geological Position of the James River, or East Virginian Coal-Field.*

Fig. 4.



clay, concealing the subjacent formation from view, so that the structure of the region could not be made out without difficulty but for artificial excavations. It will be seen by the section that the tertiary strata first make their appearance at Richmond about thirteen miles from the eastern outcrop of the coal, and they continue to occupy the lower country between that city and the Atlantic.

The only beds of coal hitherto discovered lie in the lower part