

however, formed any very definite ideas regarding the two systems, or ascertained that they belonged apparently to a different time; and, finding the Lias upheaved against the steeper sides of the Moray Frith,—one of the huge furrows of the more modern system,—I repeatedly sought to find it uptilted also against the shores of the Cromarty Frith,—one of the furrows of the greatly more ancient one. I had, however, prosecuted the search in a somewhat desultory manner; and as a pause of a few days took place in my professional labors in the autumn of 1830, between the completing of one piece of work and the commencement of another, I resolved on devoting the time to a thorough survey of the Cromarty Frith, in the hope of detecting the Lias. I began my search at the granitic gneiss of the Hill, and, proceeding westwards, passed in succession, in the ascending order, over the uptilted beds of the lower Old Red Sandstone, from the Great Conglomerate base of the system, till I reached the middle member of the deposit, which consists, in this locality, of alternate beds of limestone, sandstone, and stratified clay, and which we find represented in Caithness by the extensively developed flag-stones. And then, the rock disappearing, I passed over a pebbly beach mottled with boulders; and in a little bay, not half a mile distant from the town, I again found the rock laid bare.

I had long before observed that the rock rose to the surface in this little bay; I had even employed, when a boy, pieces of its stratified clay as slate-pencil; but I had yet failed minutely to examine it. I was now, however, struck by its resemblance, in all save color, to the Lias. The strata lay at a low angle: they were composed of an argillaceous shale, and abounded in limestone nodules; and, save that both shale and nodules bore, instead of the deep liassic gray, an olivaceous tint; I might have almost supposed I had fallen on a continuation of some of the Eathic beds. I laid open a nodule with a blow of the hammer, and my heart leaped up when I saw that it enclosed an organism. A dark, ill defined, bituminous mass occupied the centre; but I could distinguish what seemed to be spines and small ichthyic bones