

piece of the *Megalichthys*. The occipital plates descend no lower than the nape, where they join on to thickly-set ranges of glittering quadrangular scales of considerable size and great thickness, that gradually diminish, and become more angular as they approach the tail. The fins are unluckily not indicated in the specimen. In all fossil fish, of at least the Secondary and Palæozoic formations, the coloring depends on the character of the deposits in which they have lain entombed. I have seen scales and plates of the *Megalichthys*, in some instances of a sienna yellow, in some of a warm chestnut brown; but the finer specimens are invariably of a glossy black. The Dudley *Megalichthys*, and a *Megalichthys* in the possession of Dr. John Fleming, which, though greatly less entire, is valuable, from exhibiting the vertebral column of the animal, are both knights in black armor.*

* This ancient fish was at one time confounded with its contemporary, the *Holoptychius Hibberti*. A jaw of the latter animal, with its slim ichthyolite teeth bristling around its huge reptile tusks, may be seen figured as that of *Megalichthys*, in the singularly interesting Memoir of Dr. Hibbert on the Limestone of Burdie House; and we find single teeth similarly misassigned in some other geological works of credit. But no two ichthyolites in the geologic scale in reality less resemble each other than these two fish of the Coal Measures. The *Megalichthys*, from head to tail, was splendid with polished enamel; the *Holoptychius* was, on the contrary, a dull-coated fish. The *Megalichthys* rarely exceeded four feet in length, and commonly fell short of three; the *Holoptychius* was one of the most gigantic of the ganoids: some individuals, judging from the fragments, must, like the great basking shark of the northern seas, have exceeded thirty feet in length. The scales of the *Megalichthys* are smooth, quadrangular, and of great thickness, but rarely exceed an inch, or three quarters of an inch, across; those of the *Holoptychius* are thin, nearly circular in form, thickly ridged on the upper surface, and vary from an inch to more than five inches in diameter. The head of the *Megalichthys* was covered, as has been shown, with brightly-japanned plates; that of the *Holoptychius*, with plates thickly fretted on the surface, like pieces of shagreen, only the tubercles are more confluent, and