

I had been previously acquainted, though I had failed to determine their character or place. The excellent state of keeping of some of Mr. Dick's specimens now enabled me to trace the patches with the dart-head, and several other plates, to a curious piece of palatal mechanism, ranged along the base of a ganoid cranium, covered externally by a brightly enamelled buckler, and to ascertain the order in which patches and plates occurred. And then, though not without some labor, I succeeded in tracing the buckler with which they were associated to the *Dipterus*, — a fish which, though it has engaged the attention of both Cuvier and Agassiz, has not yet been adequately restored. It is on an ill-preserved Orkney specimen of the cranial buckler of this Ganoid that the ichthyologist has founded his genus *Polyphractus*; while groupes of its palatal teeth from the Old Red of Russia he refers to a supposed Placoid, — the *Ctenodus*. But in the earlier stages of palæontological research, mistakes of this character are wholly unavoidable. The palæontologist who did avoid them would be either very unobservant, or at once very rash and very fortunate in his guesses. If, ere an entire skeleton of the *Ichthyosaurus* had turned up, there had been found in different localities, in the Liasic formation, a beak like that of a porpoise, teeth like that of a crocodile, a head and sternum like that of a lizard, paddles like those of a cetacean, and vertebræ like those of a fish, it would have been greatly more judicious, and more in accordance with the existing analogies, to have erected, provisionally at least, places specifically, or even generically separated, in which to range the separate pieces, than to hold that they had all united in one anomalous genus; though such was actually the fact. And Agassiz, in erecting three distinct genera out of the fragments of a single genus, has in reality acted at once