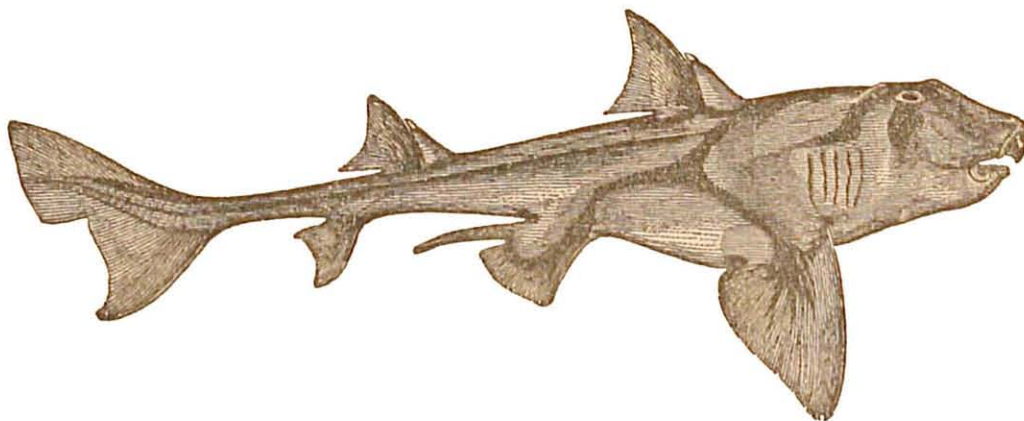


the two kingdoms, animal and vegetable,—though of course the simultaneousness may be but merely apparent,—the first land-plants and the first vertebrates appear together in the same deposit.

What, let us inquire, is the character of these ancient fishes, that first complete the scale of animated nature in its four master ideas, by adding the vertebrate to the invertebrate divisions? So far as is yet known, they all consist of one well-marked order,—that Placoidal order of Agassiz that to an internal framework of cartilage adds an external armature, consisting of plates, spines, and shagreen points of solid bone. Either of the two kinds of dog-fishes on our coasts,—the spiked or spotted,—may be accepted as not inadequate representatives of this order as it now exists. The Port-Jackson shark, however,—a creature that to the dorsal spines and shagreen-covered skin of the common dog-fish adds a mouth terminal at the snout, not placed beneath, as in most other sharks, and a palate covered with a dense pavement of crushing teeth,—better illustrates the order as it first appeared in creation than any of our British Placoids.

Fig. 52.



PORT-JACKSON SHARK.  
(Cestracion Phillippi.)

And here let me adduce another and very remarkable instance of the correspondence which obtains between the sequence in which certain classes of organisms were first ushered