

such a fin was to be wrought,—whether, for instance, each detached length was to have its moving ligament; and if so, how a piece of machinery so very complicated and multifarious was to be set and kept in motion. Here, however, I found the problem very simply resolved. The rays of the ganoid fish, like its scales, consist of three plates,—two plates of enamel, one on each side, and an interior plate of bone. Now the joints,—though so well marked, that in rays imbricated on the sides, as in those of the *Cheirolepis*, the imbricated markings turn the corners, if one may so speak, just as the carvings on a moulding re-counter, as a workman would say, at the corners of a building,—are not real joints after all: they reach but through the inflexible enamel, leaving the central plate of bone undivided. Like the rays of the *Malacopterygii*, they are formed on the principle of the half-sawn moulding. I observed, too, that the inner plate is in every instance considerably narrower than the plates of enamel which rest upon it. In the lateral edges of every ray which composes the inner portion of the fin there must exist a groove, therefore; and in this groove, it is probable, the connecting membrane at one time lay hid, performing, like an invisible hinge, its work unseen.

RECENT BONE-BED IN THE FORMING.

I ONCE found an interesting illustration of the bone-bed, coupled with at least one of the causes to which it owes its origin, in the upper part of the Moray Firth. I had been spending a night at the herring-fishing, on one of the most famous fishing-banks of the east coast of Scotland,—the bank of Guillian. It is a long, flat ridge of rock that rises to within ten or twelve fathoms of the surface. On its southern edge there is a submarine valley that sinks to at