## APPENDIX.

deep burial-grounds of the sea's finny inhabitants,—will be found almost always to prove their places of shelter. And hence, it is probable, many of the bone-beds of the geologist.

## DIPTERUS MACROLEPIDOTUS ABUNDANT IN THE BANNISKIRK OLD RED OF CAITHNESS.

LET the reader imagine a fish delicately carved in ivory, and then crusted with a smooth shining enamel, not less hard than that which covers the human teeth, but thickly dotted with minute puncturings, as if stippled all over with the point of a fine needle ;-let him imagine the enamelled rays lying so thickly in the fins, that no connecting membrane appears, and that each individual ray consists of numerous pseudo-joints, so rounded at their terminations, that each joint seems a small oblong scale, or each ray, rather, a string of oval beads ;- in due harmony with the rounded joints, let him imagine the scales of a circular form, and so regularly laid on, that the ruler ranges along them in three different ways,--from head to tail, parallel to the deeply-marked lateral line, and in slant angles across the body ;---immediately under the gill-covers, which consist, as in the sturgeon, of but a single plate apiece, let him imagine two strong pectoral fins of an angular form, with an interior angle in each covered with small scales, and the rays, as in the case of the tail, forming but a fringe around it ;-let him imagine the ventral fins, which lie far adown the body, of an exactly similar pattern,-angular projections covered with scales in the centre, and fringed on two of their edges with rays;-exactly opposite to these, let there occur an anterior dorsal fin of comparatively small size, and then exactly opposite to the anal fin a posterior dorsal of at least twice the size of the other; let the anal fin be also large and sweeping, extending for a considerable way under the tail,

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