han in such Ganoids as the Dipterians and Cœlacanths; and when their remains occur in the fossil state, we can reason, in most instances, regarding the bulk of the individuals of which they formed part, merely from that of detached teeth or spines, whose proportion to the entire size of the animals that bore them cannot be strictly determined. We can, indeed, do little more than infer, that though a large Placoid may have been armed with but small spines or teeth, a small Placoid could not have borne very large ones. And to this Placoid order all the Silurian fish, from the Aymestry Limestone to the Cambrian deposits of Bala inclusive, unequivocally belong. Nor, as has been already said, is there sufficient evidence to show that any of the ichthyic remains of the Upper Ludlow rocks do *not* belong to it. It is peculiarly the order of the system. The Ludlow bone-bed contains not only defensive spines, but also teeth, fragments of jaws, and shagreen points; whereas, in all the inferior deposits which yield any trace of the vertebrata, the remains are those of defensive spines exclusively. Let us, then, take the defensive spine as the part on which to found our comparison.

One of the best marked Placoids of the Upper Ludlow bone-bed is that *Onchus Murchisoni* to which the distinguished geologist whose name it bears refers, in his communication, as so nearly resembling the oldest Placoid yet known, — that of the Bala Limestone. And the living fishes with which the *Onchus Murchisoni* must be compared, says Agassiz, though "the affinity," he adds, "may be rather distant," are those of the genera "*Cestracion*, *Centrina*, and *Spinax*." I have placed before me a specimen of recent *Spinax*, of a species well known to all my readers on the sea-coast, the *Spinax Acanthias*, or common dog-fish, so little a favorite with our fishermen. It measures exactly two feet three inches in