

The following Communications were read:—

1. On the Physiological Action of Light. Part II. By James Dewar, Esq., and Dr John G. M'Kendrick.
2. On the Structure and Systematic Position of *Tristichopterus alatus*, Egerton. By R. H. Traquair, M.D., F.G.S.

The cranial osteology and the dentition of *Tristichopterus* have been hitherto entirely unknown, and we were but imperfectly acquainted with the structure of the pectoral fins. Consequently great doubts have prevailed with regard to its affinities, though it was supposed to be allied in many respects to *Dipterus*. A suite of specimens from John O'Groat's, in the Edinburgh Museum of Science, collected by Mr Peach, the original discoverer of the fish, subsequent to the publication of Sir Philip Egerton's description, throws great light on the previously unknown points of its structure, as well as on its affinities. In the osteology of the head it presents a striking resemblance to the *Saurodipterini*, and to the genus *Gyroptychius*, as described by Pander. The teeth are acutely conical, and of two sizes, large and small; the larger teeth have their bases fluted externally, and internally the dentine is seen to be thrown into a series of simple folds, the pulp cavity becoming simple towards the apex of the tooth. The shoulder girdle is provided with interclaviculars; the pectoral fin is subacutely lobate. The structure of the head, the dentition, and the form of the paired fins, show that *Tristichopterus* has nothing whatever to do with *Dipterus*. It seems to be more closely allied to *Gyroptychius* than to any other known genus.

The following Gentleman was duly elected a Fellow of the Society:—

JOHN AITKEN, Esq., Darroch, Falkirk.