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ON A SPECIMEN OF *PACHYCORMUS*
FROM THE SCHISTES DE GRANDCOUR
AT BASCHARAGE,

by Sir Arthur SMITH WOODWARD (Haywards Heath, Sussex).

During his exploration of the Jurassic Formation of Belgium, M. Dormal discovered in the Toarcian Stage (Schistes de Grandcour) at Bascharage (1), a fossil fish, which is of interest as being the first well-preserved Jurassic fish met with in this country. It is vertically crushed and exposed on the slab of marl chiefly from the ventral aspect, and measures about 0.33 m. in length.

The head is a little elongated, with a sharply-pointed snout; and its external bones, so far as observable, do not exhibit any superficial ornament. The jaws are exposed directly from beneath, and each mandibular ramus is seen to taper to a point in front. A few minute, bluntly-conical teeth are preserved in regular series on part of the margin of the left dentary; and the bases of a similar series of teeth occur on the slender right maxilla.

Remains of some of the cheek-plates and opercular bones on the right side exhibit a few minute punctations scattered over their smooth external face. Among these remains may be distinguished a large expanded preoperculum, with a sharply-bent anterior border which is only slightly thickened. Between the opercular bones and mandibular rami there are indications of a

(1) Grand Duchy of Luxemburg.

long series of short, flattened branchiostegal rays, not less than 35, not more than 40 pairs. In front of these, there is an oblong gular plate of uncertain form and proportions.

The length of the trunk to the base of the caudal fin equals about twice that of the head with opercular apparatus. The parts of the vertebral column are displaced and partly obscured by scales. The vertebral arches and spines are very slender, and there are no ossified centra. The two pectoral fins are displayed from beneath, only imperfect distally. Each comprises about 14 smooth flattened rays, all finely divided distally; and the fin of the right side shows traces of a few small short rays behind these. The length of the longest pectoral ray cannot have exceeded half that of the head with opercular apparatus. Pelvic fins are absent. A few fragments of rays below a coprolitic mass represent a small remote anal fin. The two slender lobes of the deeply forked caudal fin are imperfect and crushed together. They consist of slender, rod-like rays, which are closely pressed together and are undivided for the greater part of their length. They gradually increase in length at the base of each lobe; and the lowermost rays of the upper lobe are exhibited in the form of Δ -shaped fulcra. Remains of the thin scales are preserved over the whole of the body. They are very small and deeply overlapping, and their rhombic exposed portion is smooth.

The general aspect of this fish is that of a member of the family *Pachycormidae*. The teeth, preoperculum, remote small anal fin, and lack of pelvic fins, place it in the genus *Pachycormus*, of which the typical species occur in the European Upper Lias. Beyond the generic determination it is difficult to proceed. The species of *Pachycormus* are as yet very unsatisfactorily defined; and the new specimen from Bascharage does not display the characters which are considered to be diagnostic. It is, however, distinguished from the typical *P. macropterus* by its shorter head and smaller number of branchiostegal rays; while, so far as preserved, it does not exhibit any recognisable differences from *P. curtus* (2). The new specimen may therefore be provisionally recorded as *P. aff. curtus* Ag.

(2) See especially A. S. WOODWARD, *On the Fossil Fishes of the Upper Lias of Whitby*, Part II, Proc. Yorks. Geol. & Polyt. Soc., vol. XIII (1896), p. 161, pl. XXI, fig. 1.



Fig. 1. — *Pachycormus* aff. *curtus* AGASSIZ.

GOEMAERE, Imprimeur du Roi, Bruxelles.