

VII.—NOTE ON *EURYPTERUS* FROM THE CARBONIFEROUS.

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IN the GEOLOGICAL MAGAZINE for November last (Decade III. Vol. IV. p. 481, Pl. XIII.) I gave a brief description of a new species of *Eurypterus* from the Lower Carboniferous Shales, Eskdale, Scotland, which I named *Eurypterus scabrosus*.

I referred to other Carboniferous forms, and briefly mentioned one from the Lower productive Coal-measures, Darlington, Pennsylvania, U.S.A., figured as a woodcut only in the American Phil. Soc. Proc. vol. xix. p. 152, 1881.

I was not aware at that time that my friend Professor James Hall, of Albany, had printed a "Note on the *Eurypteridæ* of the Devonian and Carboniferous Formations of Pennsylvania." [Extracted from Report of Progress PPP, Second Geological Survey of Pennsylvania. 8vo. with six plates, Harrisburg, 1884; printed in advance.]

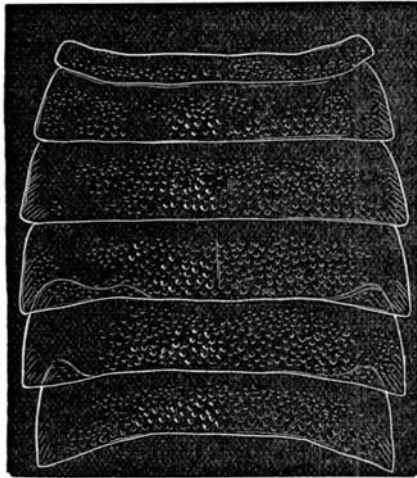
Having, through the kindness of the author, been favoured with a copy of this memoir, I hasten to remedy the omission in my paper referred to above, and to state that Professor James Hall has fully described and figured this Coal-Measure *Eurypterus* from Darlington under the name of *E. Mansfieldi*. Both in the form of its appendages and its size *E. scabrosus* is quite distinct from Hall's *E. Mansfieldi*, the latter being not more than nine inches in length, whereas the former measured, when perfect, probably not less than 20 inches. *E. scabrosus* was, moreover, furnished with long and slender bluntly-spinose appendages, but in *E. Mansfieldi* the palpi terminated in sharp recurved spines, closely resembling the earlier U. Silurian forms both in its palpi and swimming-feet.

Prof. James Hall devotes 24 figures to the illustration of this species; he also figures and describes three others (*E. potens*, *E. stylus*, and *E. Pennsylvanicus*) from the same locality and formation as *E. Mansfieldi*. *E. stylus* is a much smaller form, only about half the length of the former. *E. Pennsylvanicus* is only known by a detached carapace, and *E. potens* by some detached portions. Professor James Hall also adds an important note on *Eurypterus (Anthraconetes) Mazonensis*, Meek and Worthen, from the Coal-measures of Grundy Co., Illinois (see Amer. Journ. Sci. vol. 46, p. 21, 1868: also Geol. Surv. of Illinois, vol. iii. (Geology and Palæontology), 1868, p. 544, woodcut figure). This, as Hall very correctly points out, is no doubt a true *Eurypterus*, and the slight differences pointed out by Messrs. Meek and Worthen do not seem to justify the placing it in a distinct genus.

Prof. Hall figures a second specimen from Mazon Creek, which he believes to be the actual counterpart of Meek and Worthen's specimen, and points out how closely it agrees in many respects with *E. Mansfieldi*, the differences being really only of specific value.

The same author also figures and describes a very complete but headless body of a *Eurypterus* from the Chemung group (Upper Devonian) of Warren, Pennsylvania (plate iii. p. 30, op. cit.), which

he names *E. Beecheri*.¹ From the presence of parts of two long slender, ridged, non-spinose appendages associated with the body in the position which would have been occupied by the swimming-feet, I am led to surmise that this may possibly prove to belong to the genus *Stylonurus*; but I offer this suggestion with extreme caution and reserve, well knowing the great care and vast experience of Prof. James Hall in dealing with this group of ancient Merostomatous Crustacea.



Body-segments of *Eurypterus Wilsoni*, H. W. (natural size), Coal-measures, Radstock, Somerset.

Before concluding this note, I desire to call attention to a very interesting discovery made by Mr. Edward Wilson, F.G.S., of the Bristol Museum, of a part of the body of a *Eurypterus* (see woodcut) from the true Coal-measures at Ludlow's Pit, Radstock, Somerset.

The specimen consists of the first six body-segments only, following immediately behind the head: they measure together $53\frac{1}{2}$ millimètres in length by 52 mm. in greatest breadth. The first segment, as is constantly the case, is shorter than any of the others, being only $4\frac{1}{2}$ mm. deep; the 2nd is 8 mm.; the 3rd 11 mm.; the 4th, 5th, and 6th are each 10 mm. deep. The first segment is nearly straight and $42\frac{1}{2}$ mm. broad; the segments gradually become more arched, and increase in breadth slightly to the 4th, which is 52 mm. broad; contracting slightly to the 6th segment, which is $47\frac{1}{2}$ mm. broad. The 1st, 2nd, and 3rd segments have their lateral borders nearly straight, but the 4th, 5th, and 6th are rather more expanded and the posterior angles are produced and rather more pointed. The surface of each segment is marked by squamæ which are extremely numerous and very minute along the anterior border of each segment, but near

¹ See also Natural History of New York, Palæontology, vol. vii., by James Hall (with supplement to vol. v. part ii.), 1888, pl. xxvii. fig. 5, p. 156 (just received).

the centre and at the lateral angles these scale-markings become much larger, more acutely pointed in shape, and more irregularly distributed.

These scale-markings agree exactly with those of *Eurypterus Mansfieldi* (Hall), as represented by Prof. Hall on an enlarged scale (see plate v. fig. 6, *op. cit.* p. 38), but the margins of the segments of the Radstock specimen are hardly so pointed at their latero-posterior angles as the American species above quoted. The proportions are about equal to the largest example recorded by Prof. Hall.

In the absence of the rest of the organism, it would be premature to speak confidently; but, as it will probably prove to be a distinct British species, but near to *E. Mansfieldi* of Hall, I would propose to name it provisionally *Eurypterus Wilsoni*, after its discoverer.

NOTICES OF MEMOIRS.

CAMBRIAN FAUNA IN ESTLAND.

UEBER EINE NEUENTDECKTE UNTERCAMBRISCHE FAUNA IN ESTLAND.

VON F. SCHMIDT. Mit zwei Tafeln. (Mem. de l'Acad. des Sciences St.-Petersbourg, vii^e série, tome 36, 1888, pp. 1-28, pls. i. ii.)

HITHERTO the Cambrian strata of the Russian Baltic provinces have proved so exceedingly poor in fossils, that it has not been possible to make a satisfactory comparison between them and the relative beds in Sweden and elsewhere. Below the *Dictyonema* shales, which are analogous to the beds of the same name in Norway and Sweden, there occurs the *Unguliten* or *Obolus* sandstones; and beneath these are beds of blue clay with subordinate layers of sandstone, which rest upon Finland granite, and have been proved by borings to reach 600 feet in thickness. The upper portions of the blue clay series in Estland were regarded by Linnarsson in 1872 as equivalent to the *Eophyton* sandstone of Sweden, and the main mass of the *Unguliten* sandstone as representing the Fucoid sandstone of the same country; but at that time no fossils were known which could substantiate these views. Lately, however, thanks to the persevering efforts of M. Mickwitz, an engineer of Reval, the fragmentary remains of a characteristic fauna have been discovered in the upper beds of the blue clay series at Reval and the neighbourhood, which fully confirm Linnarsson's opinions. The fossils which have been carefully described and figured by F. Schmidt in the present paper are *Olenellus Mickwitzi*, n. sp., *Scenella discinoides*, n. sp., *S. ? tuberculata*, n. sp., *Mickwitzia (Obolus ?) monilifera*, Linnars. sp., *Obolella* (?) sp., *Discina* (?) sp., *Volborthella tenuis*, n. gen. et sp., *Platysolenites antiquissimus*, Eichw. sp., *Medusites Lindstroemi*, Linnars. sp., *Primitia*?, *Cruziana*, and *Frena tenella*, Linnars.

The *Olenellus Mickwitzi* comes in at a lower stage than the *O. Kjerulfi*, and is thus the oldest Trilobite known in Europe. Its occurrence at this horizon confirms the views of Linnarsson, Holm, and Brögger, that the *Olenellus* zone is distinctly older than that of *Paradoxides*.