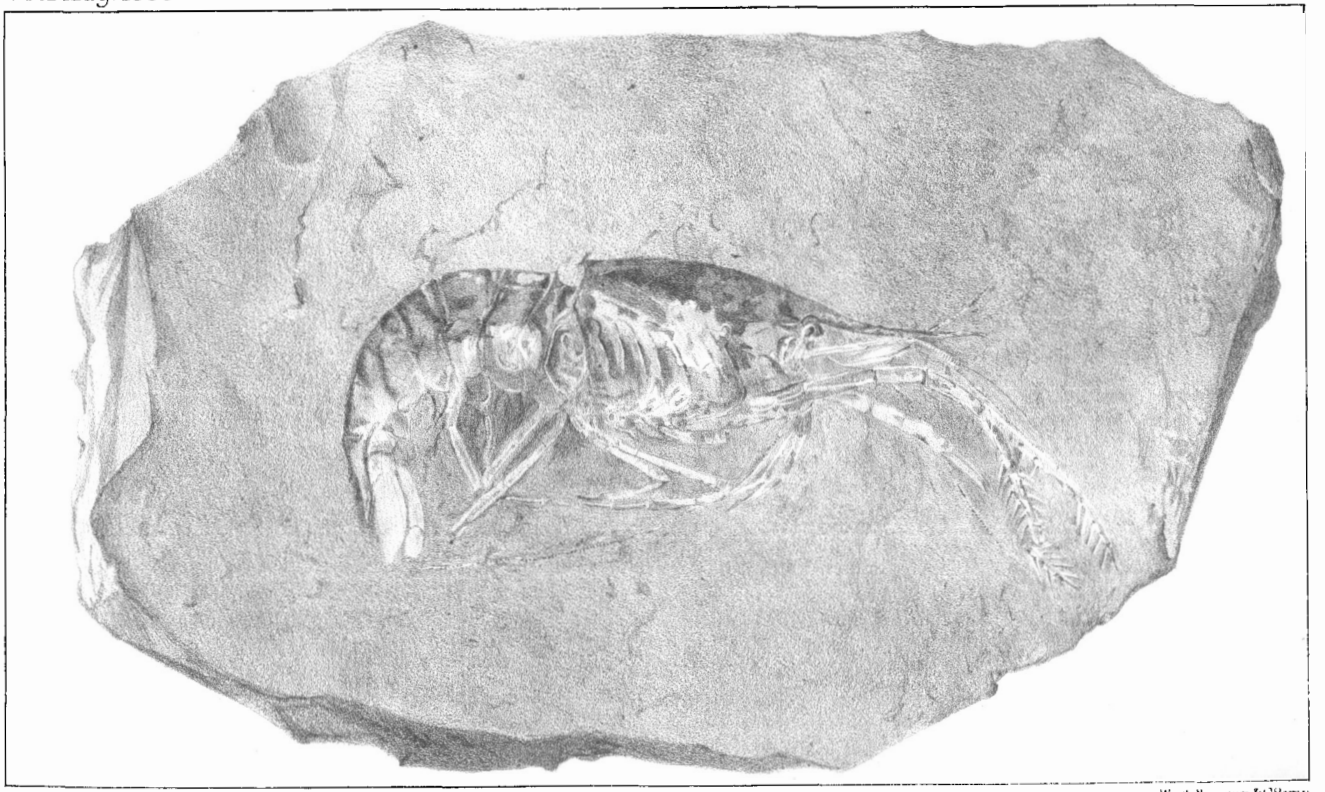

A. B. Woodward, del. et lith. West, Newman & Co. imp.

Æger Brodiei. *H. Woodw.*

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ORIGINAL ARTICLES.

I.—On a New Species of *Æger* from the Lower Lias, of Wilmcote, Warwickshire.

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(PLATE XI.)

THE genus *Æger* of Münster was established in 1839, to contain some of the most beautiful forms of Prawn-like Crustacea found in the Solenhofen Limestone of Bavaria (see Beiträge, vol. ii. p. 64). Dr. Oppel, in his Palæontologische Mittheilungen (Stuttgart, 1862), p. 109, thus defines the genus:

The inner antennæ (antennules), with their long bifid filaments, start from three strong basal articulations, and attain in most specimens to twice the length of the whole body. The antennal scales are thin and very long. The basal joints of the inner antennæ are finely serrated along their border. They are much elongated, and project further in front of the head than the outer antennæ, as is the case in the existing Shrimps.

The rostrum of the cephalothorax forms a long and slender spine with several small tubercles along the sides. It may even attain the length of the cephalothorax. These characteristics may not however all be constant in the genus *Æger*.

The outer maxillipeds or jaw-feet are of great length, and are furnished on either side with a row of slender moveable spines of considerable length. A very small spine usually springs from the base of each of the larger spines. The first three pairs of true thoracic feet are chelate at their extremities, and are also partially covered with similar moveable spines.

The first pair of chelipeds are the smallest, the second are somewhat larger, whilst the third pair are always the largest.

The fourth and fifth pairs of legs are monodactylous, and are generally very long and slender, but vary in different species.

The surface of the whole of the integument is thin, but very finely granulated, even the caudal plates displaying this character.

The form of the abdomen furnishes no marked peculiarities. The false abdominal feet with their basal articulations are frequently preserved. The outer caudal lamellæ are divided diagonally by a line of articulation near their distal extremity.

Through the kindness of the Rev. P. B. Brodie, M.A., F.G.S.,

Rural Dean, and Vicar of Rowington, near Warwick, I have received a block of Lower Lias Limestone from the "Insect-bed" (*Ammonites planorbis*-zone) at Wilmcote, containing a very well-preserved specimen of a Macrourous-Decapod Crustacean referable to the genus *Æger* of Münster.

The specimen was obtained by the Rev. H. E. Lowe, M.A., residing at Wilmcote, who procured it from one of the quarrymen, and afterwards generously presented it to Mr. Brodie.

Like similar fine-grained fissile limestones, such, for instance, as the Lithographic Stone of Solenhofen in Bavaria, these Lias beds divide up into more or less numerous layers, the fossil-remains being exposed as impressions and counterparts, upon the corresponding surfaces of the slabs when split along their laminæ. In this instance, however, only the single slab containing one side of the organism, has been preserved, so that some parts of the surface of the body-segments and appendages, which had adhered to the counterpart, have been lost with it.

The specimen, which is of the bigness of an ordinary-sized prawn —the body being 4½ inches in length—is lying upon its left size.

Its rostrum, which is not serrated, is exceedingly slender, and as long as the entire carapace. The right ophthalmite, and its peduncle, are very well preserved. Only traces of the first or inner pair of antennæ can be detected; but the outer antennæ, with their long multiarticulate filaments, can readily be observed, together with the prominent spine near the base of the same that gives support to the long oval antennal scale, the impression of which can also be clearly made out. Next is seen a pair of extremely long spinigerous maxillipeds, with simple non-chelate extremities, their four distal joints armed with two rows of long, sharp, and slender articulated spines arranged at regular distances apart along each border.

Next follows the first pair of walking-legs, which are slender and shorter than the maxillipeds, and are provided with chelate terminations. The second pair of legs are also chelate, and similar to the first. The third pair are broken off near the body. The fourth and fifth pairs of limbs are long and very slender, and have likewise simple monodactylous terminations.

The carapace is twice as long as it is deep, its surface smooth, and, where preserved, of a rich brown colour. Just over the branchial region the carapace (*branchiostegite*) is wanting and we see exposed the vertical ridges of the calcified endophragmal system, consisting of the infoldings of the lateral walls of the thorax, to which the legs are articulated, and which give attachment to the muscles of the limbs, and upon the outer face of which, but covered by the over-arching branchiostegite, the branchiæ or gills were situated.

The specimen measures 106 millimètres in length by 40 mm. in depth, and displays the cephalothorax 53 mm. long by 20 mm. in depth, the rostrum being 24 mm. long, the pedunculated ophthalmite 4 mm. long.

Behind the cephalothorax are seen the six abdominal segments of nearly uniform size, the last supporting the 'telson' or terminal

joint, which is slender and pointed, and has the caudal lamellæ of the 6th segment lying close beside it; the outer one of which is marked by a transverse articulation near its lower extremity. The false abdominal feet, with their basal joints and their bifid multiarticulate appendages (exopodite and endopodite), are also clearly seen.

In 1866 I described a new species of *Æger* from the Lias of Lyme Regis, Dorset (see GEOL. MAG. 1866, p. 10, Pl. I.). This specimen, which I named *Æger Marderi*, is much larger, and altogether more robust, with shorter and stouter limbs than that now under consideration. Mr. Brodie's specimen is not only smaller, but the limbs are much longer and more delicately slender.[1]

Having many beautiful examples of these elegant Crustaceans from Solenhofen now before me (part of the grand collection formed by Dr. Haberlein, and purchased of him in 1863 for the British Museum), I have been able to study and compare this fossil from Wilmcote with these, and also with that from Lyme Regis referred to above, and I am of opinion that it is specifically distinct from all these, although the species have, as a whole, a well-marked generic facies. I propose, therefore, to name this form *Æger Brodiei*, in honour of my valued geological friend, the Rev. P. B. Brodie, whose labours in the Liassic beds of Warwickshire and elsewhere, extending over half a century, have resulted in a large accession of interesting and beautiful Arthropoda to the Liassic Fauna of Britain.

II.—THE JORDAN-ARABAH DEPRESSION AND THE DEAD SEA.

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(*Concluded from the August Number*, p. 344.)

Lacustrine History of the Dead Sea Basin.

THE occurrence of numerous terraces on the mountain slopes overlooking the Dead Sea has been reported by several observers, but no accurate measurements of their elevations or definite correlation of the terraces on the opposite slopes of the depression, seem to have been attempted. In the central part of the Wady Arabah on the west flank of the promontory known as Samrat el Fedan, a terrace, or perhaps more properly a gravel bar, has been observed by Hull[2] at an elevation of about 1300 feet above the Dead Sea. This is apparently a definite record of the surface level of the Dead Sea during a former period. On the sides of the Jordan valley the terraces range in height from a few feet to 750 feet above the river. The measurements reported show great variation due principally to an inclination of the surfaces of the terraces, towards the centre of the valley, but indicating also that they are not horizontal in the direction of drainage. The terraces of the Jordan valley, although

[1] In describing the Lyme Regis fossil, I erroneously spoke of the long spinigerous maxillipeds as the first pair of thoracic legs.

[2] Geol. and Geog. of Arabia Petræa, Palestine, etc., page 87.