

to light yellow; however, in other respects it differs materially from all the preceding species. The body is regularly oval; thorax and elytra convex, pubescent. The head is subquadrate-ovate; the eyes rather small, but prominent; the neck is altogether wanting. The antennæ are as distant from each other at the base as they can be, being inserted below the eyes; the club is three-jointed; the joints increase gradually in size from the third to the eleventh. The maxillary palpi have the second joint slender, the third rather pear-shaped, the fourth minute and acuminate. The thorax is very ample, semiorbicular, of the shape and nearly the size of the apical half of the elytra; the basal angles are acuminate, and slightly envelope the shoulders; the posterior margin is prolonged in the middle towards the scutellum; the foveæ or basal impressions are two, and rather distant from each other. Scutellum obsolete. Elytra with two depressions at the base. Tibiæ straight; tarsi with joints 1-4 subequal, or very nearly so. Mesosternal carina middling.

[To be continued.]

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XVIII.—*Remarks on the Lias of Barrow in Leicestershire, compared with the lower part of that Formation in Gloucestershire, Worcestershire, and Warwickshire.* By the Rev. P. B. BRODIE, M.A., F.G.S., Vice-President of the Warwickshire Naturalists' Field Club\*.

During a late visit to the well-known Lias quarries at Barrow-on-Soar, I was able to compare the various sections there exposed with those in the equivalent beds in Warwickshire, Worcestershire, and Gloucestershire; and, although I could detect no remains of Insects, nor even a trace of them†, the position of the strata, and their lithological characters, are identical with the true *Insect limestones* in the counties above mentioned.

As Mr. Jukes has already described the lower Lias at Barrow and the neighbourhood in 'Potter's Charnwood Forest,' it will be needless for me to repeat those sections; but it will be necessary to give one not referred to by him, taken from an upper quarry of Mr. Lee's, in order to identify the beds,—where we have, in descending order,

\* Read to the Cotteswold Naturalists' Club, January 27, 1857.

† Although, in the short examination I was able to give the Barrow limestones, I could discover no Insect remains, nor could hear of any ever having been found, it is possible that a closer research would detect them.



	ft.	in.
1. Alluvial drift, sand and red clay, with rolled boulders of Lias	8	0
2. Blue shale.....	3	0
3. { Hard blue limestone ( <i>Rummels</i> ), with young <i>Plagiostoma gi-</i> <i>gantea</i> , <i>Lima rudis</i> , and numerous Ammonites, similar to the <i>Plagiostoma-bed</i> in Gloucestershire .....	0	9
4. Thick blue shale .....	4	0
5. Blue limestone (representative of <i>Insect-bed</i> ) .....	0	6
6. Black shale .....	1	2
7. Limestone (representative of <i>Insect-bed</i> ) .....	0	6
8. Black shale .....	1	0
9. { Blue nodular and crystalline limestone ( <i>top hurls</i> )—a very peculiar band, resembling a bed near to the ' <i>firestone</i> ' of Warwickshire, as at Grafton in that county .....	0	6
10. Shale.		
Bottom of quarry.	19	5

As Mr. Jukes truly observes, the strata vary considerably even in adjacent quarries—certain beds thin out and others come in; thus, in Mr. Ellis's large pit on the other side of Barrow, there is at least 30 feet of shale above the '*rummels*,' No. 3 in section, and there are more courses of limestone, especially those which appear to represent the *Insect limestone*. It is worthy of note, that while the *Rummels* No. 3 is evidently the equivalent of the *Plagiostoma-bed* in Gloucestershire and elsewhere, it is succeeded at once by the beds of Lias, which in Gloucestershire, Worcestershire, and in some portions of Warwickshire, occur much lower in the series, the intervening strata being entirely wanting in that part of Leicestershire. Most of the quarries do not exceed 30 feet in depth, but some have been opened to a depth of 42 feet, the lowest stratum being a bed of blue marly clay. The limestones are used in Leicestershire for the same economical purposes as the Warwickshire '*paving-stones*,' and are equally adapted for this object; but they do not seem to be employed for making hydraulic lime, as they are in the quarries belonging to my friends Messrs. Greaves and Kershaw at Wilmcote, near Stratford-on-Avon.

In places there are several small faults, and in one pit the lower strata were thrown up so as to form a complete saddle, of limited extent, at right angles to Mount Sorrel, not far off,—showing on a small scale what the effect of such a dislocation would be on a large one.

Except in No. 3 of section, shells are scarce; below this, I observed only a few *Ammonites planorbis* and *Aptychus*, and a long shell (*Meleagrina*?) common in the shale at Brockeridge Common, near Tewkesbury in Gloucestershire, and there associated with numerous and beautiful specimens of the same Ammonite.

The fine Saurians and Fish for which this district has been long famous occur more or less in all the shales and limestones,



though some courses are richer than others; and for the last two years very few have been met with. In Mr. Lee's extensive collection, the genus *Dapedium* was by far the most abundant, many of which were quite perfect; and among several fine fish, I noticed one nearly 2 feet in length, belonging to a different genus, and in a remarkably fine state of preservation.

The only Crustacean I observed was the *Eryon Barroviensis* (M'Coy), which was small and ill-preserved, and by no means equal to the large and perfect specimens met with occasionally at Bidford in Warwickshire\*.

I did not detect any remains of plants.

At Wilmcote in Warwickshire there are indications of numerous faults (which were lately pointed out to me by Mr. Kershaw), in all directions round the district, more than are generally supposed. Thus the 'firestone,' which is the lowest and hardest stratum worked, crops-out at various points and dips at a considerable angle, on the higher ground; and the several bands of 'Insect limestone' and shale lie in a basin formed by the outcrop of this lower bed. The 'Plagiostomabed,' containing *P. gigantea*, *Cardinia ovalis*, and *Astarte lurida*, occurs in places in its normal position; but there appears to be no trace of the underlying Saurian beds, which are of considerable thickness in Gloucestershire, and their absence is to be noted both at Wilmcote and Barrow, which implies a great thinning-out of the lower Lias in that direction. This holds good, at all events, with respect to the lower Lias at the latter place, where there are fewer bands of 'Insect limestone;' but at the former they are more numerous, not less than eight courses divided by thick shale; and as the 'Insect-bed' in Gloucestershire is often confined to one, or at most two layers, only a few inches thick, the increased number of 'Insect-beds' in Warwickshire may represent the 'Saurian beds' in Gloucestershire and other places, with which they were perhaps coeval in point of time.

The 'firestone' above referred to is a hard, crystalline limestone, full of oysters and spines of Echini, from 3 to 7 inches thick. In Warwickshire it always underlies the last bed of 'Insect limestone,' but does not occur in Leicestershire.

\* This species is not uncommon in the *Insect limestone* at Strensham in Worcestershire (where the finest Insects have been obtained, but the pits are now, unfortunately, closed), and Forthampton, near Tewkesbury, where they are generally well preserved, though invariably of small size. I have only seen two specimens of the large *Eryon* from Warwickshire, one of which is in my own collection, and the other in that of my friend Mr. Kershaw. I am indebted to his kindness for another fine but apparently distinct species of this genus.

The largest measures 6 inches in length from the top of the head to the extremity of the tail, and a little more than 2 inches in breadth in the widest portion of the body.





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