or keel seen both in the recent *Æga monophthalma* (Plate XXII., Fig. 7), and the fossil *Palæga Carteri* (Plate XXII., Figs. 3-6). We prefer therefore to introduce the generic name *Palæga*, by which to distinguish the fossil forms, than to adopt the very objectionable alternative of referring to a recent genus, a doubtful and but partially known fossil.

Should Mr. Billings's discovery of the existence of legs in *Asaphus platycephalus* be found capable of general application to the *Trilobita*, we have in this group the earliest representatives of the *Isopoda*. Whilst admitting the desirability of the union of *Trilobita* and *Isopoda*, it should, however, be borne in mind that between these two groups important structural differences exist that cannot be lightly passed over: such, for instance, as the facial suture, the position of the eyes, and the trilobed character of the body-segments.

EXPLANATION OF PLATE XXII.

FIG. 1. *Seyllaridia Bellii*, sp. nov. dorsal aspect natural size (Coll. Mus. Brit.), London Clay, Sheppy.

2. *Seyllaridia Bellii*, side view of same, nat. size.

1a. " " dorsal aspect (enlarged) o, o, the eyes.

1b. " " ventral aspect (enlarged), m. position of maxillipeds, e. position of efferent orifice.

3. *Palæga Carteri*, sp. nov. Grey Chalk, Dover, nat. size (Coll. Mus. Brit.).

4. " " Chloritic Chalk, near Cambridge (Woodwardian Mus. Cam.)

5, 6. " " Chalk Rock, Luton, Beds. (Coll. J. Saunders, Esq., Luton).

7. *Æga monophthalma*, Johnston, N. British Coast, attached to Codfish (nat. size).

[In Fig. 3, the keel of the telson is not well seen, the surface of the tail segment being a good deal abraded, but the margin shows the mucro and the characteristic dentated border observable in the Cambridge specimen, Fig. 4.]

(To be continued.)

II.—NOTES UPON THE OCCURRENCE OF THE POST-PLIOCENE DRIFT OF CHARNWOOD FOREST.

By W. C. LUCY, F.G.S., Gloucester.

DURING the investigations I made on the "Post-Pliocene Gravels of the Severn, Avon, and Evenlode, and their extension over the Cotteswold Hills," the result of which I embodied in a paper read before the members of the Cotteswold Club in the early part of 1869, and is now published in their "Proceedings," many of the boulders found by me, on examination by R. Etheridge, Esq., of Jermyn Street, were determined to be syenite and granite from Charnwood.

Being naturally anxious to see the rocks *in situ*, from which they were derived, I recently made an excursion to the Forest, taking up my quarters at a central position, the picturesque village of Woodhouse Eaves.

My first walk was to Mount Sorrel, and on my way I was much surprised to see a good deal of flint and drift, having heard that there was no distinct evidence that that part of the country had been submerged since the deposition of the New Red. After visiting the quarries, under the able guidance of the manager, Mr. Hamblyn, I

ascended the hill by the road on the N.E. side, and, on reaching a small plateau, at an elevation of 110 feet above the river Soar, my attention was attracted, in a hole recently made, to some small pieces of white stone, apparently resembling chalk, which, on examination, I found to be chalk. This unexpected discovery induced me to notice very closely the place where they came from, and I found a surface soil, varying from one to two feet, in which were some New Red pebbles, and angular pieces of the Sorrel rock; underneath was some tenacious clay, like Boulder-clay, three to twelve inches in thickness, and resting on New Red Marl, with a good deal of small chalk embedded in it; some pieces were, however, larger than a hen's egg, very hard, and showing evident marks of Glacial striation; there were also several angular flints, one bit of Oolite, evidently derived from the Coral Rag of Yorkshire, and two small Lower Lias Gryphites, the *G. incurva*.

As the Barrow beds, to which the Gryphæa belong, were in the plain about a mile to the N.E., their occurrence in such a position suggested to my mind how great a change the country must have undergone within comparatively recent Geological time.

A few days afterwards, I again visited the hill, and on this occasion was accompanied by Mr. Hamblyn. We found more chalk and angular flints, and traced small pieces of the latter to the summit of the hill, which is at an increased elevation of 80 feet. As the Soar below is about 200 feet above the sea-level, the highest point of Mount Sorrel is nearly 400 feet high. We saw also some fine gravel, formed of the disintegrated rock of the hill.

The flints I afterwards traced to the Beacon Hill, Bawdon Castle, and in a field just after leaving Copt Oak, on the left hand side of the new private carriage road, made by W. P. Herrick, Esq., to his property at Bardon Hill, where draining had lately been done, they were in abundance. Throughout the whole forest I found they were rarely absent.

The Northern Drift, called by the inhabitants "Boulders," is, in places, largely scattered over the surface of the ground. I found them extending far up the N.W. side of Bardon Hill, and I am disposed to think they attain rather a higher elevation than the flints.

There is a great quantity of local drift, derived from every rock of which the hills are composed, and some of very large size, many boulders weighing from one cwt. to at least a ton; and near to Charley I met with a large block of granite well striated.

The great interest of the Charnwood Forest seems hitherto to have been mainly confined to the age, nature, and composition of the rocks; but I venture to suggest that, to the Physical Geologist, there is much to engage the attention in the evident remains of an extensive denudation and meteoric abrasion in the numerous valleys which intersect Charnwood.

With the object of tracing the gravel into the plain, I drove from Woodhouse Eaves to Leicester, and, on my way, found it, as I expected, on the high flat ground of Thurstaston, which extends to

Birstall Lodge, and also after descending the very steep hill from near the latter place, and on to Belgrave, near the river. There are, therefore, the beds of gravel just above the river, where the Mammalian remains were found, which are now in the Leicester Museum; the high flat ground of Thurstaston, and an extension of drift of an older date occurring on the flanks of the hills of Charnwood.

The great quantity of drift in Leicestershire was, many years ago, noticed in the *Reliquiæ Diluvianæ*, by Dr. Buckland, in which he gives the following extract from the Rev. W. D. Conybeare: "From Houghton-on-the-Hill, near Leicester, to Braunston, near Daventry, proceeding by Market Harborough and Lutterworth, the traveller passes over a continuous bed of gravel for about forty miles. Near Hinckley, great depositions of gravel, probably connected with this mass, are found, and afford pebbles, containing specimens of the organic remains of most of the Secondary strata in England. This deposition may probably be traced continuously to that of Shipston-on-Stour, most of the hillocks scattered over the Lias and Red Marl tract between Southam and Shipston being covered with this gravel." And again he says, "It would, however, not be difficult in many places, as, for instance, on the West of Market Harborough, and in the valley of Shipston-on-Stour, to form almost a complete geological series of English rocks from among these rounded fragments, which often occur in boulders of very considerable size."

This therefore shows a clear connexion between the gravels of Leicestershire and those near to Shipston-on-Stour, which latter I have studied with some attention, and have clearly traced them on to the high ground of the Cotteswold Hills, and I am firmly impressed with the opinion that Charnwood Forest was submerged at the same time as the Cotteswolds.

I hope, shortly, to work out the Leicestershire Gravels, and to illustrate them in like manner to my Memoir on the Cotteswold Drifts.

III.—ON THE COAL-BEARING ROCKS OF SOUTHERN CHILE.

By G. A. LEBOUR, F.G.S., F.R.G.S.,

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and WM. MUNDLE, M.E., member of the North of England Inst. of Min. Engin.

LITTLE as the Geology of South America has been worked, yet the presence of coal along the coast of Chile has long been known to navigators and others. Of late years this coal has been worked in sundry places—in short, wherever the circumstances seemed most favourable. The strata in which the seams occur, were made the subject of considerable study from a palæontological point of view by D'Orbigny and by Darwin; but not until the last ten or fifteen years have the resources of the country, with regard to this branch of industry, been examined into sufficiently to enable a correct estimate to be made of them. The surveys, which have been the direct result of the interest awakened by the knowledge of the presence of workable seams of lignite in Chile, have been greatly