I. LOWER COAL-MEASURES.

- a. Halifax Soft-bed Coal (Shibden).
- b. Halifax Hard-bed Coal (Queensbury).
- c. Better-bed Coal (Low Moor and Wyke).
- d. Black-bed Coal (Low Moor).
- e. Cannel Coal (Whitehall Lane, near Low Moor).
- f. Crow Coal (near Leeds).

II. MIDDLE COAL-MEASURES.

- a. Cannel Coal (Tingley).
- b. Haigh Moor Coal (Castleford).
- c. Barnsley Thick Coal (Barnsley).

In different individuals the scale sculpture shows very considerable differences as regards the strength and prominence of the scale-markings, the sculpture being much more pronounced in the case of some individuals than in others where the scales seem almost smooth. Another point of interest is that in the young fish the ventral scales do not appear to be so low and narrow as they are in the more adult fish. The fish, a young one, which has been carefully figured above, shows this well.

VII.—NOTE ON A TORTOISE FROM THE WEALDEN OF THE ISLE OF WIGHT.

By REGINALD W. HOOLEY, Esq.

IN May, 1897, a fossil tortoise was found about 10 feet above low water-mark opposite Shepherd's Chine, by Mr. Wm. White, of Atherfield, Isle of Wight. It came into my possession in July of last year (1899). At that time the only portions clear of matrix were the sixth, seventh, and eighth costal bones, the edges of the marginals, and the epi- and hyoplastrals nearly to the notch; the matrix is a fine silt containing much iron. The specimen had been subjected to long attrition by the sea. A very thin but hard seam of whole and broken *Paludina* had offered a stubborn resistance, as likewise it did against a finely pointed and tempered chisel. On the surface of the carapace are several Cyprids (sp.?) and the impression in section of *Paludina*.

The carapace is somewhat distorted and flattened; in its present state it measures $12\frac{1}{2}$ inches long from *A* to *B* and $14\frac{3}{4}$ inches wide from *C* to *D*; in life its shape was probably ovoid. A semicircular piece of the fifth costal on the left side and the greater portion of the posterior costals, the pygals, and posterior marginals have been destroyed by the sea subsequent to the fall of the specimen from the cliff, but in other respects it is remarkably complete.

The neurals, eight in number, are narrow and elongate, some being twice as long as broad. There are eight costals, of which the second, third, and fourth have been depressed beneath the rest of the carapace to the extent of their thickness, and outer ends of the first and fifth left costals, moreover, have been forced under the marginals. The nuchal is emarginate and seems to be divided; there are eight marginals on the right, with a portion of the seventh and eighth wanting, and seven on the left, with but part of the seventh remaining.

PLESIOCHELYS VECTENSIS, sp. nov. Drawn one-fourth nat. size. (For explanation, see p. 265.)

The vertebral shields are wider than long, the first by $1\frac{3}{4}$ inches, the second and third by 1 inch, the fourth by $\frac{1}{2}$ inch. The area underlying the second and third vertebral shields is slightly fluted, that under the others is smooth.

The entoplastral is wide, and rounded anteriorly and posteriorly; mesoplastrals are absent. The suture between the hypo- and the xiphiplastrals commences below the apex of the sulcus dividing the anal and femoral shields, thence it ascends and terminates nearly at the top of the inguinal notch. The sulcus dividing the abdominal and femoral shields is entirely on the hypoplastrals; it ascends towards the hyoplastrals, and terminates in the inguinal notch. The anal shields extend on to the hypoplastrals. The total length of the plastron is $12\frac{1}{4}$ inches.

From the above particulars I conclude that the specimen belongs to the genus *Plesiochelys* (Rütimeyer). It differs from *P. valdensis* by the very slight fluting of the area underlying the vertebral shields; indeed, as mentioned, this is absent except under the second and third. It can be distinguished also by the fact that the vertebral shields extend only one-third across the costal bones; in this respect it agrees with *P. Brodiei*. The shape of the shields differs from that seen either in *P. Brodiei* or *P. valdensis*, and approaches very nearly to the form characteristic of *Pleurosternum concinnum*. The shape of the nuchal bone is different from that of the other species mentioned, and the entoplastral, instead of being V-shaped posteriorly, is rounded. The suture of the xiphiplastral bone in *P. Brodiei* is very nearly horizontal, whilst in the specimen now described it ascends and terminates a little below the inguinal notch.

I endeavoured by the matrix, the *Paludina* seam, and Cyprids on the surface of the carapace to fix the exact horizon whence the specimen came, but after diligent and careful search could not locate closer than it is within the 49 feet of Wealden shales immediately overlying the sandstone of Cowlease Chine and Barnes High, therefore about 120 feet more or less below the Perna Bed; but if the Cyprids on the carapace prove to be *Candona Mantelli* (Jones) this would, I think, be sufficient to fix the horizon at 100 feet below the Perna Bed in the 9 feet of shales with *Candona Mantelli* (Jones) in the section on p. 15, Memoirs of Geological Survey, Isle of Wight, 1889.

My amateur examination seems to point to this being a new species; if it be so I would suggest *Plesiochelys vectensis* as its name.

EXPLANATION OF PAGE-PLATE ILLUSTRATION (p. 264 opposite).

FIG. 1, A.—The carapace (dorsal aspect).

FIG. 2, B.—The plastron (ventral aspect).

ab. Abdominal shields.

an. Anal shields.

c 1-8. Costal plates.

cs 1-4. Costal scutes.

entp. Entoplastral plate.

ep. Epiplastral plate.

fem. Femoral shield.

g. Gular shield.

hum. Humeral shield.

hnp. Hypoplastral plate.

hyp. Hypoplastral plate.

ig. Intergular plate.

n 1-8. Neural plates.

nu. Nuchal plate.

xp. Xiphiplastral plate.

v 1-4. Vertebral shields.

M = matrix.