

A Miocene elevation of the Weald and of East Mercian England, such as has been here suggested, would allow that longer period of time for the subaërial waste of the Chalk, which is required to account for the angular flint fragments of the plateau-gravels, especially as we see them on the hills above Aldershot, where the materials have not been transported very far. On the Chalk Downs above Ventnor we see them still in position, just as they are left by the solution of a chalk matrix with very little argillaceous material. It seems probable that the materials thus furnished may have acquired the subangular form which they exhibit in the plateau-gravels of the Southern Drift during their transport northwards in Pliocene times, owing perhaps to accentuation of the anticline of the Weald at that period, and its elevation into a more definite hill-range, causing an increase of precipitation and a greater volume and rapidity of flow, with a correspondingly greater transporting power, of the rivers which flowed from it, to convey the flinty materials of the plateau-gravels, along with the débris of Neocomian rocks.

These are little more than suggestions, but perhaps worthy of consideration. I do not think they have been sufficiently considered in connection with the general problem; and this may be a justification for the appearance of this short paper.

VIII.—ON SOME SMALL BIVALVE SHELLS FROM THE KAROO FORMATION, SOUTH AFRICA.

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AMONGST the specimens sent many years ago, from South Africa, by the late Mr. Andrew Geddes Bain, to the Geological Society of London, are two small blocks of greenish-grey hard mudstone or shale, very slightly calcareous; one bed-plane in each specimen bears upon its surface numerous valves of one or more forms of small Lamellibranchs, closely resembling the shells of the genera *Cyrena* and *Cyclas* in contour.

The longest axis of one of the largest and best-preserved individuals is 7 millimètres, the shorter 5 mm. A smaller, well-shaped form measures 5 mm. by 4.5 mm. Only in a few instances has it been found possible to develop these little valves from their matrix, so as to show their contours clearly and accurately.

Within certain limits, these little shells vary much in size and contour, as the following measurements numerically express in mm. :

From the anterior to the posterior margin of valve.		From the umbo to the ventral margin of valve.
3	x	2½
3½	x	2½
4½	x	3
5	x	4½
5	x	5
6	x	4
6	x	5
7	x	4
7	x	5
7	x	5½
8	x	5 (lengthened by crush).

The specimens are brown casts, having the surface concentrically wrinkled, with lines of growth rather numerous, sometimes strong, and often irregular, apparently from pressure on a thin shell. This, if once calcareous, has disappeared, leaving a brown film externally, and a thin dark line, where it has been broken across, in the stone. They remind us, in general appearance, of similar shells in the English Wealden.

The shape varies from suborbicular to oval, suboval, and trigonal; some have evidently been shortened and others lengthened by pressure. One specimen has obscure remnants of a hinge, showing traces of cardinal and lateral teeth.

It occurs to me that these small Bivalves may be conveniently referred to *Cycladidæ*, and probably more nearly allied to *Cyrena* than to *Cyclas*. Hence we may provisionally name them *Cyrena? neglecta*.

These two little blocks of Karoo stone were collected by Mr. Bain at the village of Balfour, on the right bank of the Kat River, 400 yards north of the Rev. Mr. Thompson's house, and are preserved in the Museum of the Geological Society, London.



A portion of one of the blocks from the Kat River, Eastern Province, South Africa, showing four of the small shells and parts and sections of others; magnified twice the natural size.

These differ from the four South-African "*Cyrenæ*" (?) figured and described or noticed by D. Sharpe in the Trans. Geol. Soc. ser. 2, vol. vii. pp. 199, 202, and 225, pl. 28, figs. 7, 8, 9, and 13. Fig. 7 (undetermined) is from the same great Karoo formation, further north, at Graaf Reinet; but figs. 8 and 9 (undetermined), and 13 (*Cyrena? Bainii*) are from a different series of strata on the Zwartkop River.