

bostonites is soda-orthoclase. With the incoming of lime, as in maenaites, the latter is replaced chiefly by oligoclase.

Although a perfect flow-structure was a striking feature of the original bostonites, it is doubtful whether this name can with advantage be restricted to rocks showing this texture. Rocks undoubtedly exist which chemically, mineralogically, and genetically are like the type bostonites, but which differ from them in texture. Are these to be given new names, or are they not sufficiently described by using "bostonite", with an appropriate textural qualifier? It must be admitted that the presence or absence of flow structure is of no petrogenetic significance, and therefore of no classificatory value. The writer would much prefer to use the name for a rock containing a certain assemblage of minerals, and derived always from the same parent magma. Bostonite is known to be one of the ultimate products of differentiation of a soda-syenitic magma, those derived from nordmarkite carrying free quartz, those derived from laurvikite being free from this mineral. Now a true bostonite can be born of no other parents, neither calc-alkaline nor spilitic. For example, it is a mistaken policy to designate as "bostonite" acid veins in an albite-diorite from East Devonshire.<sup>1</sup> The latter rock is a spilitic rock, probably the intrusive representative of the spilites. The straining of this magma towards the alkali pole would result in the production of a keratophyric not of a bostonitic rock.

The essential difference between keratophyre and bostonite lies not so much in mineral composition and texture, as in *descent*. By taking *descent* duly into account all danger of overlapping disappears, even with rocks which may be so nearly homeomorphic as these two sometimes are.

## A Boring at Calcutt, near Cricklade, Wiltshire.

By L. RICHARDSON.

IN the early half of 1922 a boring ("jumped") was made by Mr. H. G. Godwin, of Quenington, Fairford, Gloucestershire, for Mr. Oswald Collier, of Calcutt, in search of water. The site of the borehole is at Calcutt— $\frac{1}{4}$  in. above the "C" in Calcutt on 6 in. map, 5 S.W., Wilts.

Calcutt is on the Oxford Clay,  $3\frac{1}{2}$  miles south-east of the outcrop of the basement-beds of the formation near The Fosse (by the side of the Ermin Street, about half-way between Cricklade and Cirencester), and  $2\frac{1}{4}$  miles north-west of the outcrop of the top-beds of the formation near Broad Blunsdon, where the Oxford Clay is succeeded by the Corallian.

<sup>1</sup> Abstracts from *Proc. Geol. Soc. London*, No. 1,076, 1921, p. ii.

## BOREHOLE AT CALCUTT.

Surface-level.—260 ft. above ordnance-datum.		Thickness.	Depth.
		ft. in.	ft. in.
Oxford Clay	{ 1. Clay, with an occasional layer of septaria . . . . .	193 6	193 6
	{ 2. Rock . . . . .	0 6	194 0
	{ 3. Sand, grey, very fine-grained. (Yielded about 30 gallons of water per hour, but the fine sand hampered the pumps.) . . . . .	25 0	219 0
Kellaways Beds	{ 4. Clay, very hard . . . . .	13 0	232 0
	{ 5. Sandstone, grey, calcareous, extremely hard . . . . .	18 0	250 0
	{ 6. Clay, apparently finer textured than 1 and 4 . . . . .	18 0	268 0
Cornbrash	{ 7. Limestone, bluish-grey, shelly, "mixed with clay" (see below): penetrated . . . . .	5 0	273 0

As the hole was "jumped" it was a difficult matter to obtain proper samples of the rocks passed through, but satisfactory specimens of beds 3, 5, and 7 were brought up. Those of the sandstone, bed 5, were of Kellaways Rock. Those of bed 7 were bluish-grey, shelly (chiefly fragments of oysters) limestone, similar to the well-known Forest Marble limestones. Mr. T. Rylands informed me (*in litt.*, 29th May, 1922) that he understood that this rock was "mixed with clay". This remark, together with the appearance of the limestone, is very suggestive of Forest Marble Series; but if such were the case the Cornbrash would be absent, because bed 5 is definitely Kellaways Rock. But, as the Cornbrash is well developed along its outcrop near The Fosse; as similar difficulty was experienced in identifying it in the cores drawn at the Pumping Station, Lewis Lane, Cirencester; as when unweathered, deep down, it would be of a bluish-grey colour; and, as along its outcrop it is often rubbly and mixed with some marly clay, I am disposed to regard bed 7 as its subterranean continuation.

The water obtained from bed 3 "proved to contain a large amount of salt" (Mr. T. Rylands, *in litt.*, 2nd May, 1922). It is a well-known fact that water from the Oxfordian (Oxford Clay and Kellaways Beds) is usually highly mineralized, and unfortunately it has been established that waters in the Oolites, perfectly fresh when uncovered by the Oxfordian, are as a rule mineralized when tapped beneath such a covering. Thus Mr. G. J. Churchward, the Engineer to the Great Western Railway, informed the late W. W. Fisher that a year or two previous to 1904 he tested by borings the waters beneath the Oxford Clay from Swindon to Kemble (where the clay ends), and found that the chlorine diminished all the way to a point about a mile and a half on the Swindon side of Kemble station.<sup>1</sup>

The Cornbrash did not yield any water worth speaking of, and as that from the sand of the Kellaways Beds was inadequate, salty, and the fine sand would have proved troublesome for the pumps, the borehole was abandoned.

<sup>1</sup> *The Analyst*, vol. xxix, No. 35, February, 1904, p. 37.