instead of directly towards the wind, either on account of its shape or because the sand has been removed unevenly from below it.

If a general expression be required for any wind-shaped stone, we might speak of a 'ventifact', on the analogy of artifact, sometimes spelt 'artefact', which is already in use for an object, such as a palæolith, fashioned by men, and of 'ventiduct', which has been employed in architecture.

JOHN W. EVANS.

IMPERIAL INSTITUTE.
*June 7, 1911.*

## BRITISH PILLOW-LAVAS.

SIR,—The brilliant paper on British pillow-lavas by Messrs. Dewey and Flett in your May and June numbers is an illustration of what may now be done in rational petrology by the collation and interpretation of the great mass of facts accumulated on the descriptive side of the science. The main points brought forward by them, i.e. the existence of the spilitic suite, and the explanation of its association with black shales, limestones, and radiolarian cherts, seem now to be thoroughly established.

One is obliged, however, to dissent from the view (pp. 242, 245) that the spilitic suite is separate and distinct from, and, so to speak, co-ordinate with the Atlantic and Pacific kindreds, as established by Harker, Becke, and Prior. Using these terms merely as convenient names for the two broad chemical divisions in igneous rocks, and disregarding the much-disputed distributional assumptions on which they rest, it seems to me that the Atlantic and Pacific branches cover the entire field of igneous rocks. This is certainly the view taken by Harker in his *Natural History of Igneous Rocks* (chap. iv), although the terms Atlantic and Pacific themselves are based largely on the distribution of Tertiary igneous rocks. The actual basis of the classification, however, is chemical, and the above terms are due to a probably too wide generalization as to the distribution of the groups. If this is the case the spilitic suite is merely a subdivision of the Atlantic branch, as its characters agree well enough with the definition of the latter (Harker, op. cit., pp. 90, 91).

Exceptions to that geographical distribution of igneous types implied by the use of the terms Atlantic and Pacific are now multiplying at such a rate that it may be necessary to drop those terms in their petrographic sense. In that event future research may show that the igneous rocks are divisible into more than two main classes, distinguished by broad chemical and mineralogical characters, and associated with various types of earth-movements. The spilitic suite may form one of these classes; but what I wish to point out is that as at present defined it seems merely to form a part of the Atlantic kindred, using that term in the sense that petrographers use it, to indicate the great division of 'alkalic' rocks. Messrs. Dewey and Flett consider that a close parallel exists between the spilitic suite and the analcite-bearing igneous rocks of the Scottish Carboniferous (p. 209). If so, there seems no reason why the latter, or indeed any well-marked group, should not be elevated to the rank assigned to the spilitic suite by the authors.

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Another point concerns the status of the Tertiary igneous rocks of the Western Isles of Scotland. Messrs. Dewey & Flett consider that they belong to the Atlantic branch (p. 242), but advance no reasons for that view, which is, of course, in flat contradiction to that of Mr. Harker. No comment need be made save that it requires more than a mere *ipse dixit* to reverse Mr. Harker's opinion as to their Pacific relationships expressed in his *Tertiary Igneous Rocks of Skye* (1904), p. 417 (although the actual term Pacific is not here used), and later in the *Natural History of Igneous Rocks* (1909), pp. 99, 108.

G. W. Tyrrell.

Geological Department,
University of Glasgow.
*June 8, 1911.*

## OBITUARY.

### REV. ROBERT BOOG WATSON, B.A., F.R.S.E.

Born 1824 (?). Died June, 1910.

We learn from the address of Professor Watts to the Geological Society, 1911, of the death last year of the Rev. R. Boog Watson. His most important geological paper, "On the Great Drift Beds with Shells in the South of Arran," was published in 1864 (Trans. Roy. Soc. Edin., xxiii). His observations led him to conclude that all the latest geological changes have not materially affected the relations of hill and valley; that the valleys were largely excavated by ice; that the ice covered the land until it was submerged; and that the depression of the land below the sea was continuous, and ultimately attained 1,000 feet at least. Another paper, "On the Marine Origin of the Parallel Roads of Glen Roy," was published only in abstract (Quart. Journ. Geol. Soc., xxii, p. 9, 1865).

Mr. Vernon Austin.—We regret to record the death on June 9, in his 70th year, of Mr. Vernon Austin, son of the late Mr. Stephen Austin, and the last of that name to represent the highly respected firm of Stephen Austin and Sons, Printers, Hertford (established for more than 100 years), who have printed the Geological Magazine since December, 1865, a period of forty-five years. The firm is now carried on as Stephen Austin and Sons, Limited, Printers, Hertford.

## MISCELLANEOUS.

The President of the Board of Education has appointed Mr. H. H. Thomas to succeed Dr. J. S. Flett as Petrographer to the Geological Survey of Great Britain.

Royal Society Conversazione.—Among objects of geological interest displayed at the conversazione on May 10 were—(1) Footprints from the Permian sandstones at Poltimore, Devon, exhibited by Principal A. W. Clayden. They bear a general resemblance to those obtained at Corncockle Moor and Penrith, though differing in detail. (2) Skeleton of *Ornithodesmus latidens*, a Pterodactyl from the Wealden shales of Atherfield, Isle of Wight, exhibited by Mr. R. W. Hooley.

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