

CORRESPONDENCE.

THE GEOLOGY OF THE WEST INDIES.

SIR,—Much as I appreciate Dr. Wayland Vaughan's recognition of my work in the Leeward Islands between 1920 and 1923, in two of his recent papers,¹ I feel I cannot allow some of his criticisms to pass unchallenged.

In the first paper, Dr. Vaughan tabulates some fifty igneous rock specimens from Antigua, St. Bart's, St. Martin, Anguilla, St. Kitts, St. Croix, and St. Thomas, as determined by the late Professor J. P. Iddings.

As I expected, Dr. Vaughan is inclined to quarrel with my contention of a dissimilarity between the Windward and Leeward Islands on the one hand, and the Virgin Islands on the other in their petrological characters. In support of this he cites the occurrence of andesites, dacites and andesitic tuffs, characteristic of the Leeward Islands—in Cuba, St. Thomas, St. Croix, and St. Bart's.

Of these islands, however, St. Croix and St. Bart's belong to the Leeward Island group, as shown by the bathymetric soundings in the neighbourhood of the Anegada channel.

Further, Dr. Vaughan ignores the converse side of the proposition, namely that in only one single exposure² has he been able to collect in situ specimens of plutonic and metamorphic rocks from the Leeward Islands comparable with those of the Virgin Islands. After an elaborate survey of the Leeward and Windward Islands from St. Kitt's to Grenada I can safely say that I have not collected a single specimen of a plutonic or schistose rock in situ. It is largely for this reason that I have always doubted the probability of a Tertiary or even of a Mesozoic age for the igneous complexes of the Virgin Islands—Cuba axis, more especially as the folding there exhibited is quite unlike anything developed in the Leeward Islands proper.

The only other point that I would refer to in connexion with the igneous rocks described in Vaughan's paper is the number of dacites cited from the Leeward Islands, as my own collections were singularly devoid of rocks of that type.

With regard to my paper on Anguilla,³ Dr. Vaughan takes me to task for questioning his section of Crocus Bay. I accept his present explanation that the section is a composite one, compiled from various exposures up the track leading from the beach to the Valley Post Office, and not a continuous one in a cliff face.

The argument as to whether an altered andesitic tuff should be described as a basic igneous rock would be unimportant were it not

¹ "Notes on the igneous rocks of the North-east West Indies and on the island of Anguilla," *Journ. Wash. Acad. Sci.*, vol. xvi, 1926.

² Viz. Grand Bay, St. Martin.

³ *Report on the Geology of St. Kitts, Nevis and the Geology of Anguilla*, published by the Crown Agent for the Colonies, 1924.

that the true basal foundation (augite-andesite) of the limestone is to be seen *underlying* the tufts at Dog I. and I wish sincerely that Dr. Vaughan had visited the latter island, as he would have seen the striking section showing the relationship of the sedimentary strata to the igneous foundation below.

I am interested to see from the new section that the clays containing lignite and amber were found in situ at Crocus Bay, as my own excavations on the beach proved so unproductive in that respect. I am also glad to see that Dr. Vaughan is now inclined to regard the Anguilla formation as of Langhian (Burdigalian) age.

I was not able to work out my own fossils sufficiently far to obtain a reliable estimate of the age of the beds, but the late Mr. R. B. Newton, who casually looked over my specimens, expressed the opinion that they represented a Miocene assemblage.

Dr. Wayland Vaughan is inclined to doubt the identification by myself and J. W. Spencer of a marked coral limestone, raised high above the sea-level in Anguilla, and unconformable on the Oligocene limestones, indicating to my mind marked uplift of the island in Pleistocene or Recent times. As Dr. Vaughan apparently never visited the locality where I saw the deposit (viz. 2 miles east of Island Harbour), I think I am entitled to stand my ground firmly on this point.

In conclusion, I would express my regret that many of my reports (particularly those on the Windward Islands) were only published as appendices to the official gazettes of the islands concerned, and are therefore very difficult of access to the public in general, while several, such as those on Dominica, Montserrat, and Barbuda never saw the light of day at all. All my West Indian specimens are now housed in the British Museum (Natural History Museum), and one copy of each published report is stored in the library of the Geological Society, London.

K. W. EARLE.

GEOLOGICAL DEPT.,
UNIVERSITY COLLEGE,
LONDON, W.C.
24th March, 1927.

ERRATA ET ADDENDA.

Page 123, *for* Middle Louth Seam *read* Middle Lount Seam. The quartzite pebble described was exhibited at the Geological Society on 22nd April, 1925 (*Proc. Geol. Soc., Q.J.G.S., lxxxii, 1925, p. cxxiv*), and has since been presented to the Museum of Practical Geology, Jermyn Street.

Page 143, line 9 from bottom, *for* J. P. Paul *read* F. P. Paul.

“ “ 7 “ “ *for* endialite *read* eudialite.

“ “ 7 “ “ *for* Shannon Pier *read* Shannon Tier.