

the reference will be complete. This method, followed by all who have dealt with the subject in an extensive and practical way, is found to be the only one that will work satisfactorily.

C. DAVIES SHEBORN.

#### UNIFORMITY IN SCIENTIFIC BIBLIOGRAPHY.

SIR,—Concerning the manner of quoting works of reference, I also have to make complaint, namely, that authors sometimes quote, as if it were a complete work, a paper which may be part of some larger publication.

Authors, however, are not always to blame in this matter, because it arises from the cause upon which I have another complaint, namely, that some of the Societies who issue Proceedings, etc., often fail to state on the "Authors' copies" anything at all concerning the fact that the papers are extracts from their publications.

Some of our County Field Clubs are adepts at withholding information. Sometimes they append no date at all to their publications; while their authors' copies suffer, in addition to the omission mentioned, from absence of date, absence of number of volume, and changed paging. I notice that even the Geological Society omits to give the volume number upon its "authors' copies."

I would suggest that the Council of the Geological Society first rectify this matter, and then issue a strongly-worded circular to every Secretary or Editor of every scientific society in the kingdom drawing attention to these omissions, and stating what is required.

Since it is the habit of some booksellers and private individuals to break up odd volumes of Proceedings into their different papers, I would suggest that it is also recommended that these data be printed at the heading of every paper in every volume of Proceedings; at present such information is lost if one happens to buy the parts of volumes so treated.

*Date of papers.*—I cannot agree with Mr. Davison (*GEOL. MAG.* Dec. III. Vol. VI. No. I. p. 48) that the date of reading be taken as the date of a paper. A new species must date from the time when it is figured, and this cannot happen until the publication of the volume. If authors' copies be printed in advance, they should be so dated, both themselves and in the volume.

S. S. BUCKMAN.

STONEHOUSE, Jan. 7, 1889.

#### PROFESSOR BLAKE'S "MONIAN SYSTEM."

SIR,—Professor Blake's reply to my "Notes" on his "Monian System" requires a few brief comments.

Prof. Blake now admits the presence of true schists as derived fragments in the Upper Archæan of Anglesey; but he attempts to neutralize their effect by alleging examples where such fragments occur in the upper part of the formation from which they are derived. He says, "The conglomerate of Bull Bay is made of the underlying quartz rock." But he has to prove that the quartz rock was not of contemporaneous origin, if the cases are to be parallel.

The schist in the Llanfechell Grit is not of volcanic origin *tanquam* schist; it must have originated as rock, and been metamorphosed into a schist, before the grit was deposited. The metamorphism must have taken place at some depth, and there must have been a period of denudation previous to the exposure of the schist at the surface. His examples of the conglomerates of Llangefni and some of the Bangor beds are not to the point; since the fragments derived from the associated beds are volcanic, and contemporaneous denudation in volcanic rocks is common enough. That the "conglomerate of Moel Tryfaen is largely composed of the immediately preceding Cambrian slates" I dispute. I have seen this conglomerate on Llyn Padarn, and I followed it all along the crest of Mynydd y Cilgwyn, but not a bit of Cambrian slate did I find in it. Dr. Hicks studied it in the intermediate ground of Moel Tryfaen without finding slate. I therefore venture to reject all Prof. Blake's supposed parallel cases, and I call upon him to prove that a true crystalline schist could have been included as a derived fragment in a (roughly) contemporaneous sedimentary formation.

As to Llyn Trefwll, I am quite aware that a large part of the ridge close to my sections consists of basic igneous rocks; but as they had no bearing upon my work, I have not referred to them. The rock *in situ*, which Prof. Blake now admits is a true slate, on the authority of Prof. Bonney, contains rounded pebbles of the adjacent granite; and Prof. Blake has no right to say either that I mistook diabase for slate, or that I sent to Prof. Bonney certain derived fragments in mistake for rock *in situ*.

I am sorry the two examples of a supposed passage between the "lower and upper groups," which I selected because they happened to turn up first, prove to be bad ones. Perhaps Prof. Blake would consider his succession in the northern area more satisfactory. If so, I do not think he will mend matters. He makes the Llanfechell Grit to overlie the schists of Mynydd Mechell; but there is more reason to believe that they are one and the same set of beds in different stages of alteration.

Prof. Blake has disappointed me. I asked for particulars of the fauna by whose aid he correlated the Longmyndian with the Bray Head Series, and he refers me to *Arenicolites didyma*! I supposed I must have overlooked some important palæontological discovery; but no, our familiar little friend turns up in immortal bloom! I respect *Arenicolites* for its antiquity, but as a time indicator it is worthless.

The "Malvernian" rocks, which I said were included by Prof. Blake in his "Middle Monian," are called by him "the granites and altered rocks of Primrose Hill." I do not think any one who knows the region disputes that these masses are approximately of Malvernian age.

Prof. Blake dwells upon the consequences of my acceptance of the igneous origin of the hornblende schists. I stated those consequences unreservedly in my "Notes," and I do not feel a bit ashamed that I worked on the accepted principles of our science, and was not able

to penetrate the "dim and distant future." My descriptions of the older Archæan rocks and their distribution are not materially affected by the theory of mechanical metamorphism; but we must of course cease to construct time-series out of them. Alas! how many a stately time-edifice goes down before the blows of those gods of the hammer, Lehmann and Lapworth!

CH. CALLAWAY.

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THE SERPENTINE OF THE LIZARD.

SIR,—Would you kindly allow me to reply to the letter of Prof. Bonney in your January issue on the above subject regarding my alleged "two slight errors."

1. I think the Professor's mind has very naturally (perhaps without reference to the map) reverted to the south end of the Pentreath Beach, where the hornblende schist occurs in conjunction with the serpentine, which he has so ably and minutely described; but the dyke in question is at the north, or Kynance end, near a large exposure of banded gneissic rocks forming the foreshore of Holestrow, similar to what occurs in many other localities described by the Professor as "granulitic," as at Caerleon and Kennack, at the west end of which latter Cove the dykes cutting the serpentine are seen to coalesce with the "granulitic" rocks forming the foreshore.

2. For my own part I know of no "granulitic group" in the whole area with igneous rocks involved or included in it, but a group of rocks to which the term "granulitic" might be applied, which every evidence seems to point at as having a common igneous origin, although differing widely from each other; neither do I know any separation between these and the hornblende schists save in the extremes of their compositions, both of which are frequently mingled together in the same dykes.

I quite agree and deeply feel with Prof. Bonney the very great difficulties connected with some of these Lizard rocks, such as the explanation of the banded gneissic series which has been so philosophically dealt with by Mr. Teall; and it was for this very reason that I ventured my short communication on the dyke and its lessons, in the hope that it might throw some little additional light on these gneissic and other rocks, which I have always regarded as presenting very much that is problematic.

ALEX. SOMERVAIL.

59, FLEET STREET, TORQUAY, Jan. 9th, 1889.

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MISCELLANEOUS.

ADDENDA.—In the section illustrating Prof. Hughes' paper, *GEOL. MAG.* Jan. 1889, p. 9, the asterisk indicating the third fossil locality mentioned in the text has been omitted. The spot referred to is immediately under the Bronllwyd Grit, vertically below the Y of that word on the diagram.