

## WINCHELL ON OPHITIC TEXTURE

TO THE EDITOR OF SCIENCE: In the proceedings of the twenty-first annual meeting of the Geological Society of America, Volume 20 of the *Bulletin*, pages 661 to 667, Professor A. N. Winchell has a paper upon the use of ophitic and related terms in petrography. Since I in my report for 1909 shall continue to use the term in a somewhat narrower sense than that advocated by Professor Winchell,<sup>1</sup> a few words of explanation may not be out of place. I shall not plead that publication of the paper was too late to be availed of since Professor Winchell was kind enough to let me read it some time ago. Nor is the argument that one should not change his usage in what may perhaps be the last of my reports of entirely determining weight, though in view of the fact that what I have called ophites Winchell would also call ophitic, the point has a certain weight. The facts regarding the early and later use of the term ophitic are fully given by Winchell in the article referred to, with perhaps one exception. That is, in the article from which Winchell cites the original definition of Michel-Lévy in the *Bulletin of the Geological Society of France*, Volume 6, 1878, page 158, only a few pages later (on page 169) he says, "the most characteristic mineral of the ophites is the diallage in the large areas." It seems to me, therefore, very questionable if one should extend the term so as to apply it as Winchell suggests "to all rocks having plagioclase in lath-shaped crystals of earlier formations." In fact, it seems to me the petrographically and chemically important thing is the fact that the rock has pretty nearly the composition of a bisilicate and that this bisilicate may be considered as the solvent in which the other constituents are dissolved, from the fluid or molten solution of which they crystallize. One finds, for instance, in the quartz diabases, rocks in which the plagioclase is distinctly in lath-shaped crystals of early formation, but in which the matrix is not pyroxene. It seems to me that,

<sup>1</sup> The same sense in which it is used by the list of writers cited by him, to which may be added Grout, in *SCIENCE* for September 2, 1910, p. 313.

as cited by Winchell in the earlier or later definition, a pyroxenic matrix is an essential part of the idea of the ophites.

I am, however, quite willing to give up the idea that the augite must necessarily be altogether in larger grains than the feldspar. In fact, in almost all the so-called ophitic rocks at a proper distance not far from the margin one will find a transition from a glassy intersertal or microlitic texture to the coarse ophitic texture, in which the augite acts as matrix to the feldspar, but is so fine grained that several granules may combine in acting as a matrix for a single feldspar. Now this structure would certainly be covered by the original definition as cited by Winchell, in which the size of the augite is not emphasized. But the fact of a pyroxenic matrix seems to me essential to the idea. The extension to a rock in which the pyroxene is replaced by native iron is perhaps an extension by analogy.

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## THE REFORM OF THE CALENDAR

TO THE EDITOR OF SCIENCE: The suggestions of Professor Reininghaus and Doctor Slocum concerning the reform of our present calendar, which were published in *SCIENCE* for June 29 and September 2, are very pertinent and interesting. It is certainly time for some international action looking to the reform of our clumsy calendar. In this connection I beg leave to call attention also to a plan for the reform of the calendar presented last year to the first Pan-American Scientific Congress by Sr. Carlos A. Hesse, of Chili. He suggests the division of the year into thirteen months of 28 days each, the new month to follow December and be called Treceember. The extra day (for  $13 \times 28 = 364$  only), he proposes to call "Zero Day," and it would not belong to any of the fifty-two weeks, or be called by any week day. The extra day in leap years he proposes to call "Double Zero Day," under like conditions. This project is nearly that suggested in the letters in *SCIENCE* referred to above, except that Dr. Slocum's plan (which he ascribes to Mr. Moses B. Cotsworth, of York, England) is to place the extra month in the *middle* of the year instead of at