CORRESPONDENCE.

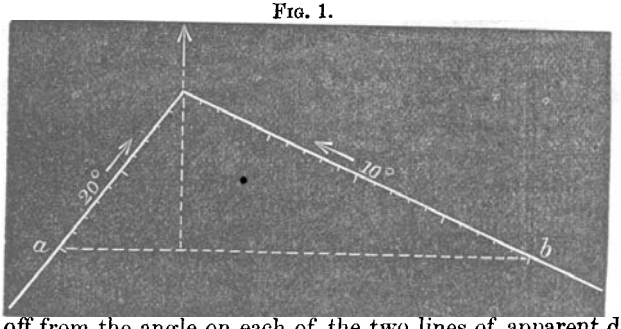
APPARENT AND TRUE DIP.

SIR,—Although the principle involved is always the same, the methods given below for finding the true from the apparent dip are, I believe, new; and in the hope that they may be found by others as serviceable as by myself, I send them for insertion in the GEOLOGICAL MAGAZINE.

To find direction of dip.—When the amount and direction of two lines of apparent dip are known, the direction of the true dip may be found by one of the following rules, *A* or *B*.

Rule A.—When both the observed dips incline from, or towards, the angle enclosed by their lines (Fig. 1), the true dip is at right angles to a line *a b* laid down by the following method.

FIG. 1.

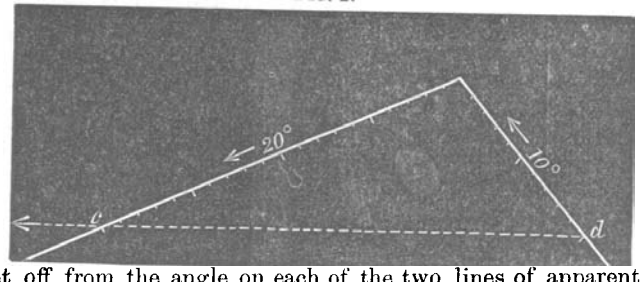


Set off from the angle on each of the two lines of apparent dip, a number of units corresponding to the number of degrees of dip observed along the *other* line, and connect the two points by a line *a b*.

This line, *a b*, coincides with the strike, and is consequently at right angles to the true dip's direction.

Rule B.—When one observed dip inclines from, and the other towards the angle enclosed by their lines (Fig. 2), the true dip follows a line *c d* laid down by the following method.

FIG. 2.



Set off from the angle on each of the two lines of apparent dip, a number of units corresponding to the number of degrees of dip observed along that line, and connect the two points by a line *c d*.

This line coincides with the true dip's direction.

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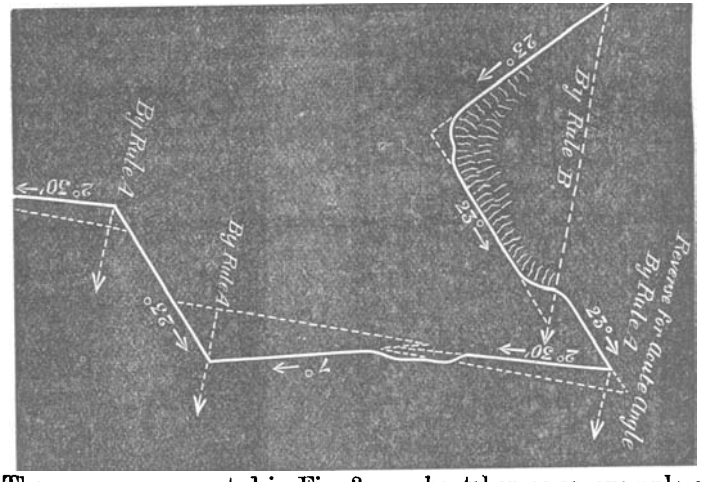
Note.—These rules will not apply unaltered to lines of apparent dip enclosing *acute* angles, which in practice are rarely found. In such cases a horizontal triangle constructed by the *reverse* rule, *i.e.* on the other side of either line of observed dip, will give the result required.

Fig. 3.



The quarry represented in Fig. 3 may be taken as an example of obtaining the true dip by these methods. The operation being repeated under varying conditions with the same result.

H. M. Geological Survey. W. H. Penning.

THICKNESS OF THE OXFORD CLAY.

Sir,—As few of your readers may possibly see my Lecture on the Water Supply to Houses and Towns with especial reference to Oxford, I beg to enclose an extract from it, having reference to a question which is of some geological interest, viz. the thickness of the Oxford clay in this district. The inquiries I had occasion to make respecting the practibility of an artesian well at Oxford led me to doubt previous conclusions. In the following extract from my pamphlet I give the geological grounds on which I arrived at this different result.

"We know generally that the Oolites become thinner in their range eastward, but the Oxford clay has, on the contrary, been thought to become thicker, and it has been generally stated, on the evidence chiefly of the boring made at Wytham[1] in 1829, that at Oxford it is 600 ft. thick, or more.

"I am satisfied however, that there is some error in the construction put on that section, and that the thickness of the Oxford clay here is much less than that estimate. A record of the boring has been preserved, which shows it to have been carried through a succession of

[1] Three miles N.N.W. from Oxford.