

NOTE ON PENCK AND BRÜCKNER'S DIAGRAM OF THE FLUVIO-GLACIAL SERIES

BY

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In their classical studies on the Alpine glaciation PENCK and BRÜCKNER gave a small blockdiagram to illustrate the arrangement and shape of the deposits at the lower end of a former glacier: the fluvio-glacial series. This diagram has been reproduced in so many text-books, that it may be worth-while pointing out a fault in its construction.

The case represented by the authors is that of two terminal amphitheatres lying within eachother (fig. 1)¹⁾. The manner in which the



Fig. 1.

Fluvio-glacial series after PENCK and BRÜCKNER.

outer moraine with its fluvio-glacial fan of sediments is drawn in on top of the inner moraine proves it to be the younger of the two. In this case the glacier must have ridden over the inner circle, thereby destroying its ridge; but in the drawing this ridge is represented as having been left perfectly intact. On the glacier receding again the material of the older moraine would be found buried under the newer deposits, and *only one frontal moraine would be left* (fig. 2, A).

If, however, two moraines, the one lying within the other, are actually present *the inner one must be the younger*. In this case the

¹⁾ PENCK (A) und BRÜCKNER (E), Die Alpen im Eiszeitalter. Leipzig, Erster Band, 1909, pag. 16, fig. 1.

outer, older moraine will have been cut through in one or more places by the waters of the glacierstreams, and the fluvio-glacial deposits will be found fan-wise in front of these breaches (fig. 2, B).

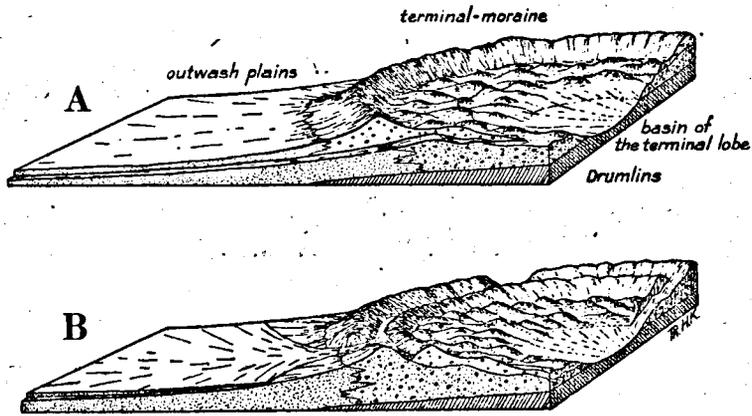


Fig. 2.

Fluvio-glacial series.

- A. The glacier has advanced after depositing the older moraine.
- B. The glacier has receded after depositing the older moraine.

Further complications by oscillations in length of the glacier can be imagined of course, but it would lead too far to illustrate all these.

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