

# SHORT COMMUNICATIONS

## USE OF BEREK COMPENSATOR MADE STILL EASIER

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Tobi (1954) proposed a nomograph by superimposing the Emmons' curve (Emmons, 1943) on the Michel-Levy's graph (Michel-Levy, 1888); with his nomograph, birefringence of a mineral can be readily obtained from the

Berek compensator readings of the mineral and of a comparison mineral, like quartz, of the same thickness. The only disadvantage of this method is that for each Berek compensator used a separate Emmons' curve has to be drawn on the Tobi's nomograph.

The author, following essentially the method of Tobi, proposes a different nomograph by superimposing a modified

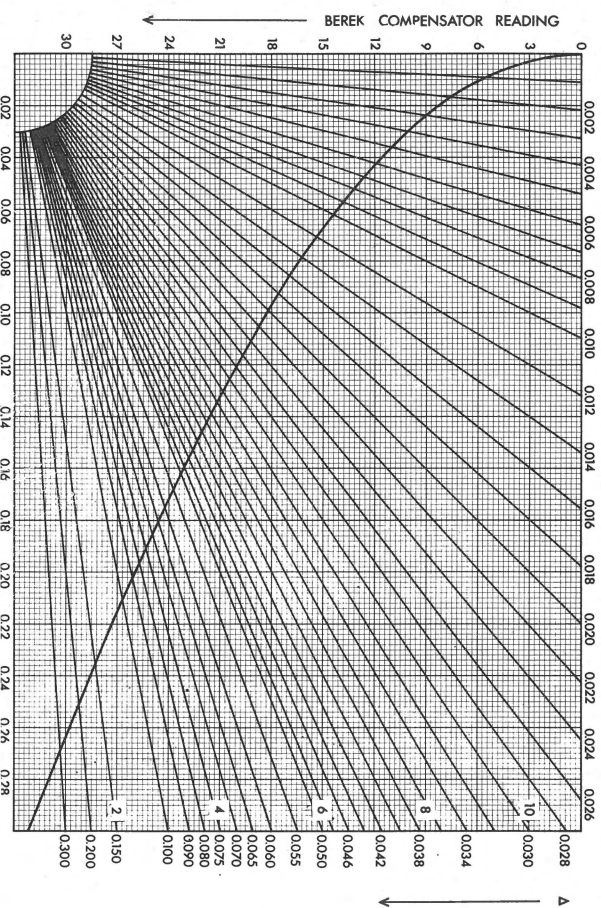


Fig. 1  
Nomograph showing the relations between compensator reading, function of compensator reading, ratio of thickness of section and compensator constant, and birefringence.

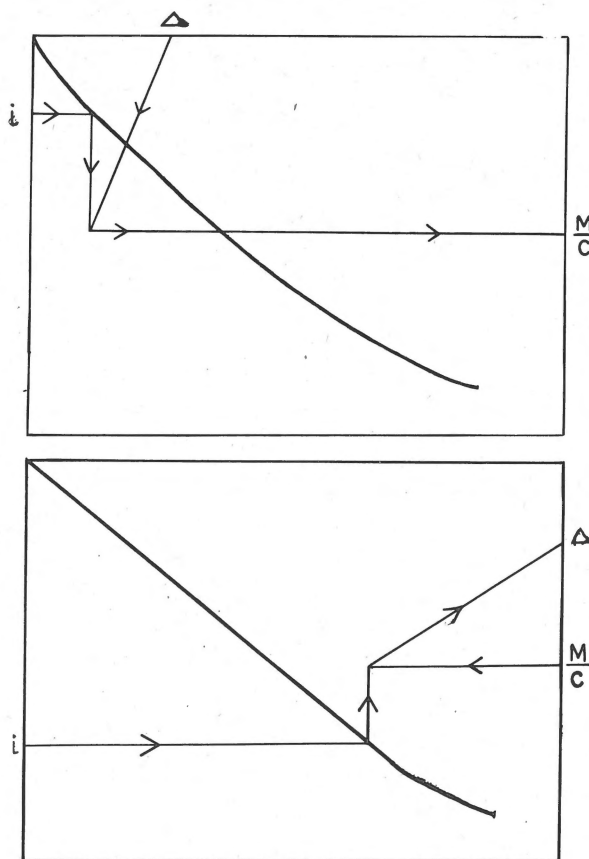


Fig. 2  
Keys to the use of the nomograph. A (left): To find ratio of thickness of section and compensator constant from compensator reading and birefringence of quartz. B (right): To find birefringence of mineral from compensator reading and ratio of thickness of section and compensator constant.

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Emmons' curve on a modified Michel-Levy's graph. From the Emmons' curve the retardation of a mineral,  $\Gamma$ , is obtained from its compensator reading,  $i$ . From the modified Emmons' curve, on the other hand, the function of the compensator reading of a mineral,  $f(i)$ , is obtained from its compensator reading. The Michel-Levy's graph shows how for any given value of birefringence of a mineral,  $\Delta$ , its retardation varies with the thickness of the mineral section,  $M$ . The modified Michel-Levy's graph, on the other hand, shows how for any given value of birefringence of a mineral, its function of the compensator reading varies with the ratio of the thickness of the mineral section and the compensator constant,  $C$ .

The proposed nomograph is shown in figure 1. The usefulness of the nomograph in finding out the birefringence of a mineral from the compensator readings of the mineral and of quartz of the same thickness is illustrated in figure 2. The advantage of the proposed nomograph over the Tobi's nomo-

graph is that it can be used with any Berek compensator. If for any reason one wants to determine the retardation and the section thickness of a mineral, the function of the compensator reading and the ratio of the thickness of the mineral section and the compensator constant of the mineral obtained from the nomograph are respectively multiplied with the constant of the Berek compensator used.

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#### REFERENCES

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 Michel-Levy, A. (1888) – Les mineraux des roches, Plate 1: Paris.  
 Tobi, A.C. (1954) – Use of Berek compensator made easier; Geologie en Mijnbouw, Jg. 16, p. 87-89.