

A SIMPLE AND INEXPENSIVE PROJECTION SHEET FOR  
GNOMONIC AND STEREOGRAPHIC PROJECTIONSA. L. PARSONS, *University of Toronto.*

During the past summer it became necessary for the Department of Mineralogy in the University of Toronto to replenish its supply of projection sheets for plotting the results of goniometric measurements. In view of the state of foreign exchange the former source

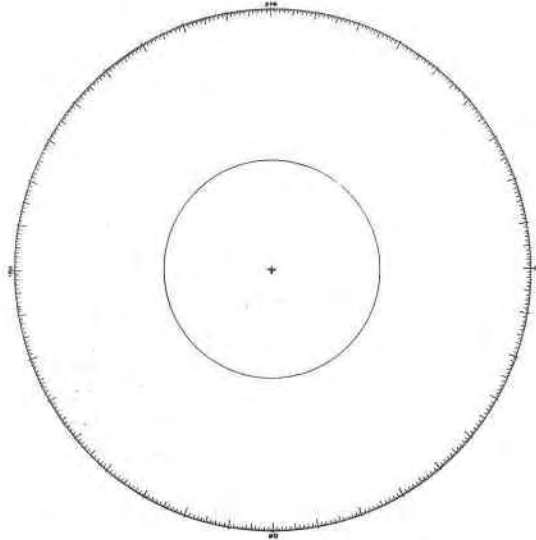


FIG. 1

of supply was too expensive to consider. The result of the consultations by members of the staff is the projection sheet, shown in figure 1, consisting of two concentric circles, one with a radius of 5 cm. and the other graduated in half degrees, with a radius of 12 cm.

With straight-edge and compasses both  $\phi$  and  $\rho$  values can readily be plotted direct, and with the additional help of a millimetre scale any crystallographic problem may be solved graphically. The graphic determination of  $5 \tan \rho$  and  $5 \tan \rho/2$  with the projection of the unit pyramid of anglesite in both gnomonic and stereographic projection is shown in figure 2.

From the teaching standpoint a great advantage of the present sheet is that it is a good quality drawing paper so that errors in projection may be corrected without marring the appearance of

the surface of the paper. It also gives the opportunity to show the principles of projection without reference to special tables. The student is much more likely to understand the meaning of the distances that he measures from the pole if he has protracted the required tangent than if he has looked up the value in tables. His errors will certainly be reduced.

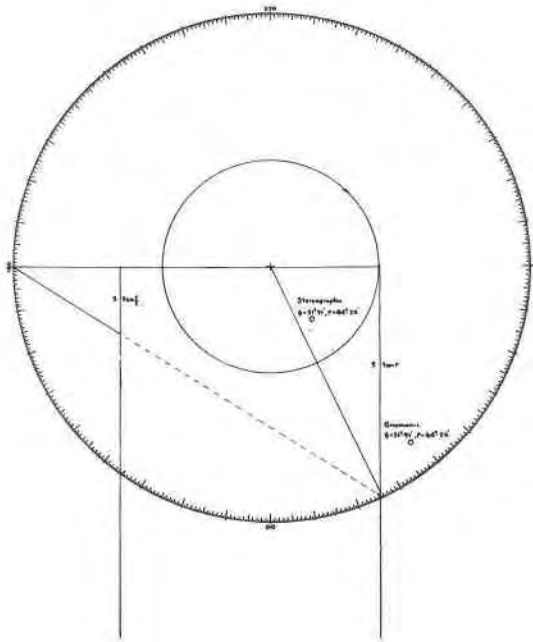


FIG. 2

For those who prefer a different scale for their projections it is only necessary to describe a ground circle of the required diameter.

The cost for 200 sheets was as follows:

Draftsman's time, 1 day . . . . .	\$ 5.00
Zinc etching . . . . .	10.00
	\$15.00
Charge 20% original cost to first 200 sheets . . . . .	\$3.00
200 sheets drafting paper 14" square . . . . .	4.22
Print . . . . .	1.00
	\$8.22
Cost per sheet . . . . .	4.11¢

If the entire cost of the cut be charged to the first 200 sheets the cost is 10.11¢ per sheet which is almost exactly the cost of the sheets formerly used at the rate of exchange prevailing at the time, without the additional charges for packing, express and customs duties. In this case the cost of future supplies will be less than 3¢ per sheet.

The writer will be glad to furnish a copy of the projection sheet to any of his colleagues who may wish it for reproduction.

#### ANNOUNCEMENT

GEORGE LETCHWORTH ENGLISH begs to announce his resignation as *Consulting Mineralogist* of Ward's Establishment, effective July 1, 1934.

He expects to devote his time to professional mineralogical work, including appraisals of mineral collections, mineral surveys, collecting expeditions, technical aid to mineralogical museums, mineralogical writing and lecturing.

With a background of forty-eight years of continuous contact with minerals, during which he has probably handled and valued more scientific minerals than any other living mineralogist, he hopes to be of greater service to mineralogical science in the future than in the past.

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