NOTES AND NEWS

ON THE USE OF "POLAROID" FOR PHOTOGRAPHING LARGE THIN SECTIONS IN CROSSED POLARIZED LIGHT

B. M. Shaub, *Smith College, Northampton, Mass.*

The instruments in general use at present for observing and photographing petrographic sections in plane or crossed polarized light limit the area under observation to a few square centimeters or less. Where it is desirable to magnify considerably the area, this restriction is not in the least a handicap. However, when the material is of such a nature that larger areas are required to show the relationship of the unit parts, "polaroid,"[1] the new light polarizer, makes it possible to observe or photograph the entire area of any large thin section. The area is not limited to square inches or even square feet if larger dimensions are desired.

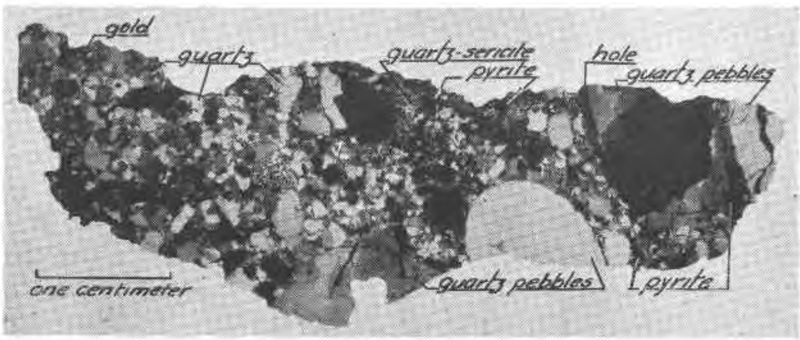

Fig. 1. Section of gold-bearing conglomerate from the Langlaagte Estate mine, Johannesburg, South Africa. X = 1.75

The invention of this polarizing film has made possible a number of recent developments such as the projection and viewing of stereographic pictures, the elimination of automobile headlight glare and the subjection of large areas of material to plane or crossed polarized light. It is in the last field where this new material offers possibilities not heretofore available in illustrating large thin sectional areas of rocks, mineral aggregates, vein or other structures in crossed polarized light. These structures and textures could not be illustrated in detail except by various tedious methods of drawing, either wholly of a freehand character or by the aid of a camera lucida, or of various forms of projection apparatus,

[1] This material may be obtained from the Polaroid Company, 168 Dartmouth St., Boston, Mass., and from the Polarizing Instrument Co., 8 West 40th St., New York, N. Y.

all of which are limited by the dimensions of their polarizing prisms and lenses. The final drawing on a small scale of a large area could, however, be made by joining the adjacent drawings providing the aberration is not too great.

Figure 1, is a photomicrograph of low magnification which shows the character of the illustrations one may obtain by the use of this material in photographing large thin sections. The one shown is 5.7 centimeters

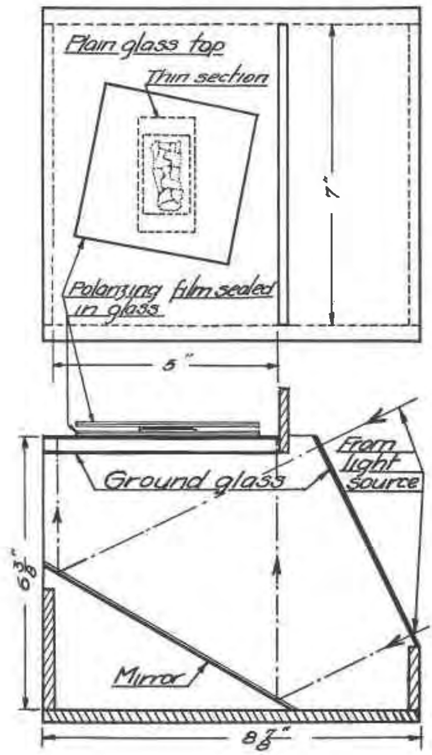

FIG. 2. Plan and cross section of illuminator for transmitted light for use in conjunction with any camera of proper proportions when supported in a vertical position. The light source may be an ordinary desk lamp with a photoflood bulb or an arc light with a 50 mm. magnifying lens or other similiar lights.

in its longest dimension. This section consists of well rounded quartz pebbles and angular sand, both somewhat replaced by pyrite and all cemented with silica and sericite. The section represents a specimen of the Rand gold-bearing conglomerate from the Langlaagte Estate mine, Johannesburg, South Africa.

Sections of this kind may be clamped between pieces of polaroid, when the latter is cemented between glass plates, and held in a vertical or horizontal position between the light source and the camera lens. This method, however, does not allow one the desired freedom of motion and ability to arrange the section in the most desirable position and orientation for photographing. This type of setup is also likely to result in damage to the polarizing plates or section by falling, on account of having an awkward set of conditions with which to contend. To overcome these inconveniences the writer devised the illuminator for transmitted light as shown in plan and cross section in Fig. 2. In this arrangement, to be used with a vertical photomicrographic or other camera, the section and polaroid plates are held in position by gravity and their relative position can be readily changed as desired. The arrangement as shown provides good diffused light and when a photoflood bulb is used the exposure is comparatively short—depending upon the magnification and stop used—and is usually of the order of three to ten seconds when using supersensitive panchromatic films or plates. The relationship of the parts are self evident and need no explanation except the short vertical piece at the top. This is provided to shield the top of the glass plates from light which may be reflected into the lens by devious routes. Additional protection may be obtained by clipping a piece of black cardboard to this upright.

In addition to using the illuminator for photographing sections in plane or crossed polarized light it is well adapted for photographing all objects up to 5×7 inches in ordinary transmitted light. When used in this manner the unused areas may be masked with black paper to avoid all undesirable reflections. When using crossed polarized light the extraneous field of the crossed polarizing plates afford a natural dark background.

OPTICALLY POSITIVE CORDIERITE IN THE KISSEYENEW GNEISS AT SHERRIDON, MANITOBA

Ralph L. Rutherford, *University of Alberta, Edmonton, Alberta.*

In 1933 the writer collected a suite of specimens from the Kisseyenew gneiss at the Sheritt-Gordon mine at Sherridon, Manitoba. Good specimens were available at this time as there had been recent extensive development both on the surface and underground, which produced fresh outcrops along roadways, and the mine dumps contained freshly broken material.

The Kisseyenew gneiss, which is the prevailing surface formation at Sherridon, has been described in some detail by Bruce and Matheson.[1] The main minerals present, according to these authors, are quartz, felspar, biotite, garnet and amphibole. Among the less abundant minerals,

[1] Bruce, E. L., and Matheson, A. F., The Kisseyenew Gneiss of Northern Manitoba' etc.: *Trans. Roy. Soc. Can.*, vol. **24,** sec. 4, p. 119, 1930.