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A New Method of Identifying Polarized Light Reflected from Small Opaque Crystals.

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A NEW METHOD OF IDENTIFYING POLARIZED LIGHT REFLECTED FROM SMALL OPAQUE CRYSTALS.

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The method is a modification of one used originally by Voigt for the identification of elliptically polarized light. The light under examination passes first through an arrangement of quartz wedges acting as a Babinet compensator, then through a "rotator" consisting of another pair of quartz wedges cut perpendicular to the axis, one from right-handed, the other from left-handed quartz; and finally through a large Nicol prism. The field is thus filled with rows of black spots in regu-

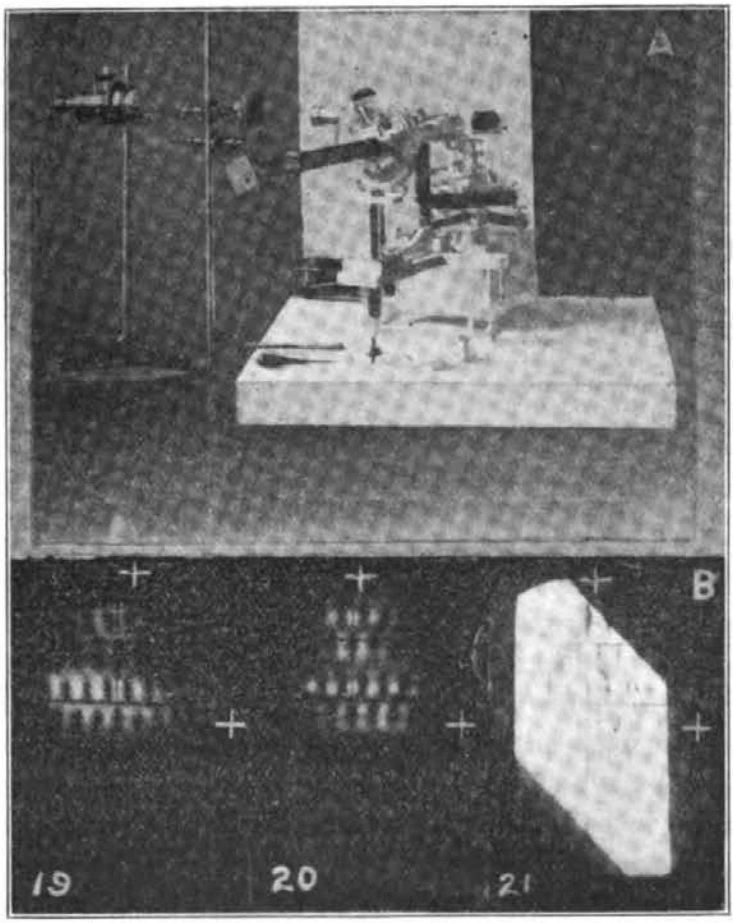

FIG. 41A. View of Apparatus.
FIG. 41B. Typical Spot-Patterns with Selenium (19 and 20), and Comparison Pattern (21).

lar arrangement; and from the location of these spots with reference to the cross-hairs, as photographed, the exact character of the elliptic vibration can be readily calculated.

In this particular application, the parallel beam of light is reflected from a small metallic crystal and is very slender, so that only a small portion of the field is illuminated at once. In order to produce the spot pattern, the analyzing apparatus is carried back and forth with a sort of weaving motion, at right angles to the beam, until the whole field is covered. The pattern then appears clearly on the plate, and measurements are easily made upon it. Some excellent plates have been obtained in this manner from very small crystals of selenium. See figure 41.

From such plates, it ought to be possible to settle the question whether metallic crystals are doubly refracting. In fact, the preliminary results would indicate that such is the case with selenium. The research is still in progress.

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