

cover. The crucible lost only about 0.5 mg. per double HF evaporation. Palau crucibles have proven very satisfactory for sodium carbonate fusions.<sup>2</sup> The higher melting point, almost 1400°C., is an advantage over gold and the carbonate cake is more readily freed from palau than from platinum or platinum-iridium. Washington found a 32 g. palau crucible to lose an average of 0.2 mg. per run during 47 carbonate fusions.

The cost of this palau crucible was 350 pesos (palladium @ 9.50 and gold @ 5.50 pesos per gram), which is actually less than a pure gold crucible would have cost, because of the smaller weight necessary to give sufficient rigidity for handling.

<sup>1</sup> Courtesy of Societé Affinage de Metaux, MM. Antoine Pagés, Director and Paul Tapie, Assayer.

<sup>2</sup> Washington, H. S., Note on crucibles used in rock analysis. *Jour. Wash. Acad. Sci.*, 11, 9-13 (1921).

#### HOLLOW PRISM FOR GONIOMETRIC CALIBRATION OF REFRACTIVE INDEX MEDIA

RICHARD F. COGSWELL,

*Petrographic Laboratory, AC Spark Plug Division, General Motors Corporation, Flint, Michigan.*

The speed with which refractive indices of media over 1.710 can be determined using an ordinary spectrometer depends largely upon the hollow prism. Several types of prisms have been tried in this laboratory and the one shown in the accompanying sketch has proven the most satisfactory.

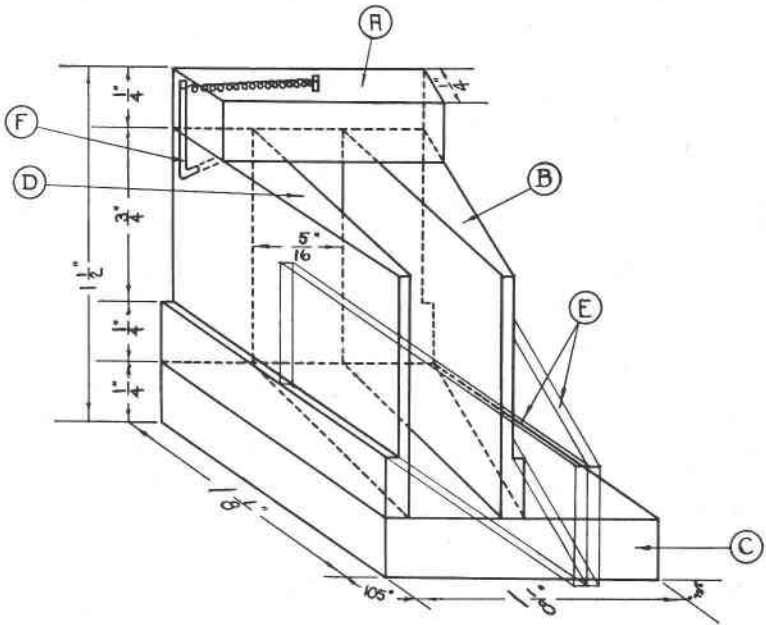
The fixture is made of brass, excepting the spring which is of steel; the stock should be of sufficient thickness to insure rigidity. The top brace bar (*A*), the right prism wall (*B*), and the base (*C*) are held together by a  $\frac{1}{8}$ " pin of  $1\frac{1}{2}$ " length. The left prism wall (*D*) is similarly pinned to the top brace bar and the base, but in a manner to allow outward swing of the prism wall so that the prism glasses (*E*) may be readily cleaned. The spring anchor (*F*) is placed at an angle to the prism wall (*D*), so that when the wall is swung back the spring passes the maximum extension point and holds the wall open.

A hole through the fixed prism wall (*B*) near the base, is tapped to accommodate an adjusting screw. An accurate 30° prism angle can be obtained with the minute adjustments afforded by this screw whose end abuts against the inner surface of the pivoted prism wall (*D*).

A standard 26×45 mm. microscope slide, chosen with parallel faces, is cut lengthwise to form the two faces of the hollow prism, between

which faces a drop of the liquid to be measured is suspended. Each of these faces is held securely against its prism wall by a thin metal plate, each plate being anchored to the prism wall by two screws above and two below the glass.

The fixture may be secured to the stage in the proper working position



Sketch of Hollow Prism and Fixture

FIG. 1

by means of two aligning dowel pins built into the base, which fit into appropriate holes provided in the goniometer table.

The rigidity of the fixture may be determined by opening and closing the prism faces and measuring the included angle several times. For example: It has been found that values vary from  $30^{\circ} 3'$  to  $30^{\circ} 3.5'$ . Thus, for rough calibration, the angle need be measured only once. Even after removing sulfur and various evaporation residues of high index media, the change in the prism angle is very slight upon re-closing the faces.

The Mineralogy of the Tin Mines of Cerro de Llallagua, Bolivia, by Samuel G. Gordon in the *Proceedings of the Academy of Natural Sciences of Philadelphia*, vol. **96**, 270-359 (1944), gives an interesting and comprehensive report on the minerals of this important region which has produced more than 350,000 tons of tin. The paper treats of the general geology of the region, sequence of mineralization, history of the deposit, and a description of the minerals with emphasis placed on the crystallographic forms observed. Many new forms were found. The minerals occur in a network of veins in a quartz porphyry less than a mile wide. While about 60 minerals are described special attention was given to the less common species yielding new mineralogical data. A list of the minerals described in considerable detail includes the following: stannite, greenockite, pyrrhotite-troilite, bismuthinite, marcasite, boulangerite, andorite, rutile, monazite, apatite, crandallite, wavelite, the vauxite group, and hisingerite.

In recent months the Mineralogical Society of America has lost through death one correspondent (Alexander E. Fersman, May 20, at the age of sixty-two years) and two fellows (Edward Wigglesworth, May 6, age fifty-nine, and Florence Bascom, June 19, at the age of eighty-two years). Memorials will be published in the *Journal* at a later date.

Word was received some time ago of the liberation of Professor Frantisek Slavik, of Charles University, Prague, Czechoslovakia, after two years spent in German prisons and concentration camps. He is in good health and sends his hearty greetings to his numerous American colleagues.

Dr. Alexander N. Winchell, professor emeritus of Geology at the University of Wisconsin, has accepted a position as resident consultant to the American Cyanamid Company at Stamford, Connecticut.

Dr. Waldemar T. Schaller of the United States Geological Survey, past president of the Mineralogical Society of America, and recipient of the Roebing medal in 1938 has been elected Honorary Member of the Mineralogical Society of Great Britain.