

formed no solid solution or addition compound with the major constituents. Eventually it turned out that potassium chloride was suitable for that purpose, but in the meantime it occurred to us that the above difficulties could be removed or greatly minimized by using a radioactive tracer.

To this end radioactive phosphorus, P^{32} , in the form of potassium dihydrogen phosphate was chosen, as its type of activity was suited to the problem at hand. The peroxide solutions containing 0.025 mg tracer/l were partly frozen, and the bulk of the liquid was separated from the crystals by means of a filter stick. After warming to room temperature the activity of each phase was measured with a thin glass counter immersed in the liquid; the hydrogen peroxide content was determined from refractive index. The results obtained with a dilute (10%) and a concentrated (90%) solution indicated that the solid phase was pure ice and pure hydrogen peroxide, respectively. Further details on the experimental procedure and results will be published elsewhere (3).

Summing up, the use of a radioactive tracer offers the following advantages: minimum complications re-

sulting from addition of a third component to the original system; no interference of the tracer with chemical analyses or measurements of some physical property of the solutions such as density, refractive index, etc.; only one component need be determined instead of two. This technique is equally applicable to the "synthetic" method of Bancroft (4) which requires no separation of phases. The results may be analyzed algebraically or graphically by plotting on rectangular coordinates activity against concentration of the component in greater proportion.

A number of years ago Terrey and Jolly (5) used natural radioelements to study the degree of hydration of certain salts. We feel that the availability of powerful artificial isotopes and the development of modern counting techniques add greatly to the interest and possibilities of this method.

References

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Comments and Communications

Touché!

In *SCIENCE* for May 11, 1951 (p. 543), in the article, "The Origins of American Scientists," by Robert H. Knapp and Hubert B. Goodrich, they list "the first fifty institutions with 30 or more annual graduates, ranked in order of their production index." The authors commented that "No Southern institutions appear here." Johns Hopkins University, Maryland, is nineteenth, and Charleston, South Carolina, twenty-ninth. I realize that Maryland, although below the Mason-Dixon Line, is sometimes felt to be a border state; but this is the first time that I had known that South Carolina was not considered a Southern state.

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Condensation Globules at Meteor Crater

THE American Meteorite Museum, located on U. S. 66, 5 miles from Arizona's meteorite crater, has been making extensive and intensive studies of the adjacent soil. These studies have brought to light minute metallic globules that are believed to have been formed as condensation products from metallic vapors generated by the explosion of the colliding meteorite or meteorites.

Chemical analysis of these particles by F. G. Haw-

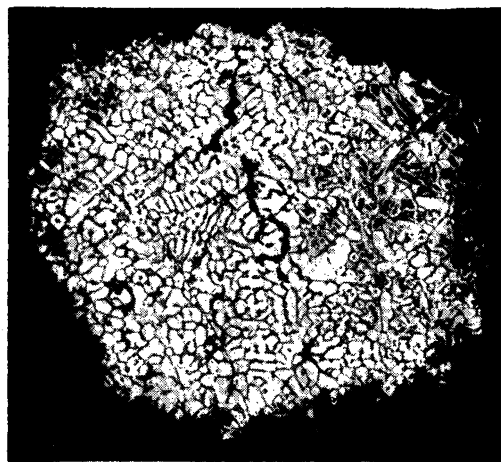


FIG. 1. Dendritic structure indicative of rapid cooling from liquid state. Black veinlike areas are oxide. The white dendrites are nickel-iron, and the gray filling between the lobes of the dendrites is sulfide, carbide, and phosphide more or less mixed. ($\times 100$.)

ley¹ shows them to be about 17% nickel, and metallographic studies by A. W. Herbenar¹ prove the presence of cohenite, steadite, and schreibersite, as well as troilite. The percentage of nickel is about double that of the meteorite fragments found in the same area.

¹ We wish to express our thanks to F. G. Hawley for the chemical analysis, to A. W. Herbenar for his metallographic report, and to both Mr. Herbenar and Glenn E. Mills for photographs.