

classifying them as hydrogen isotope of mass one and hydrogen isotope of mass two are much too lengthy for common usage. Prof. Harold C. Urey of Columbia University, on behalf of the discoverers of heavy weight hydrogen proposed the names "protium" and "deuterium," but Prof. Gilbert N. Lewis and Ernest O. Lawrence of the University of California call the heart or nucleus of the heavy hydrogen atom "deuton," as contrasted to the common name for the heart of the light hydrogen, "proton."

Prof. William D. Harkins of the University of Chicago has taken the "neutron," that electrically uncharged particle of mass equal to the proton, discovered last year by Dr. James Chadwick in Cambridge, England, and has considered that all the "neutrons" in the universe make up a new chemical element of atomic number zero. For this element he proposed the name "neuton."

The person who should be considered in all this naming is the poor scientific student of the future who will have to remember all these strange names. Since so few pure scientists are tremendously interested in the mythology behind the names the suggestion that they should be called by descriptive names that will bring their properties to mind is certainly worth considering.

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## SEISMOLOGY

## Fiji Island Region Gets Heavy Quake

**A** HEAVY earthquake shook the Pacific Ocean floor near the Fiji Islands on Wednesday, Sept. 6, scientists of the U. S. Coast and Geodetic Survey reported after examining data collected telegraphically by Science Service. The quake began at 5:08 p. m., eastern standard time. Its epicenter, or point of greatest movement, was in approximately 18 degrees north latitude, 180 degrees west longitude.

Seismograph stations reporting to Science Service were those of the Dominion Observatory, Ottawa; the University of California, Berkeley, Calif.; the Seismological Laboratory, Pasadena, Calif.; Fordham University, New York City; and the stations of the U. S. Coast and Geodetic Survey at Tucson, Ariz., and Ukiah, Calif.

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## CHEMISTRY

# Solids Near Absolute Zero Yield Secrets Through Spectra

## At Extremely Low Temperatures, Vibrations of Particles No Longer Cause Serious Distortions

**T**HE Langmuir Medal, awarded annually for outstanding research in chemistry, is to be presented to Dr. Frank H. Spedding of the University of California. Dr. Spedding delivered the Langmuir Award Address on "Energy Levels in Solids" before the Chicago meeting of the American Chemical Society.

White light shining through thin films of solid matter and being absorbed in characteristic ways by the atoms in the solid has proved to be a powerful tool in understanding and evaluating the physical properties of matter. Dr. Spedding told how these color pictures could be obtained and how they could be interpreted to give an enormous fund of information about solids.

White light is composed of all wave lengths or frequencies. When it is shone through a substance some of these frequencies are absorbed in the substance because the constituent atoms are free to vibrate with just these frequencies. The light coming through the substance when spread out into a color picture or spectrum is lacking in some colors or has dark sections spread through it.

By observing these dark sections chemists are able to tell just what frequencies the atoms in the substance are capable of absorbing. From this information they can calculate such physical and chemical properties as how much heat is necessary to raise its temperature, the attraction in a magnetic field, how strongly the atoms are bound together, and so forth.

These "absorption spectra" of solids at ordinary temperatures usually have very broad dark sections because the absorbing atoms are disturbed by the electric and magnetic effects of their neighbors. At high temperatures, Dr. Spedding said, the atoms are vibrating and the distortions are of all degrees. Since the light observed is from billions of atoms, light of many frequencies is ab-

sorbed and broad bands occur in the spectra.

However, if the solid is cooled to the enormous frigidty of nearly absolute zero, minus 451 degrees Fahrenheit, the atoms in the frozen solid no longer vibrate and so the deformation of all the atoms is the same. Then only certain frequencies of the incident light will be absorbed and sharp dark lines will appear in the absorption spectra. From the position of these sharp lines chemists can calculate physical and chemical properties of the solid.

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## ORNITHOLOGY

## Bird Lover Sacrifices Savings for Sanctuary

**S**TAKING his whole life savings for the preservation of a bird sanctuary is the heroic sacrifice made by a retired teacher, R. B. Burrowes, formerly of the Liverpool Technical College. Finding that the Dungeness Promontory, the only remaining natural and undisturbed area of any size on the southeast coast of Great Britain, was about to be exploited by building contractors, Mr. Burrowes sold and mortgaged everything he possessed to raise the sum of £5,585 (approximately \$25,150 at present exchange rates) necessary to obtain an option on the area.

A committee is now endeavoring to raise funds to give back at least £1,740, which will recover for Mr. Burrowes certain securities deposited at a bank as collateral for a loan. He will still be out of pocket to the extent of £3,845 pounds, but is content to accept this loss for the satisfaction of knowing that he has kept the birds' homes safe. In the meantime he is living on the slender annual pension of £138—about \$600.

The committee, which announces its quest in *Science*, states that contributions may be sent to the Manager, Lloyds Bank, Canterbury, England.

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