

## NUTRITION

# Chemicals Improve Diet

► YOU MAY be taking minute amounts of two minor chemical elements to improve your diet and make you less likely to die of heart disorders if investigations reported to the American Association for the Advancement of Science in Denver, Colo., are verified.

The elements are vanadium and zinc. Deficiencies of these two metals may be widespread in the American diet, Dr. William H. Strain of the University of Rochester (N.Y.) department of radiology reported.

Vanadium is present in the hard drinking water of areas of the Southwest where death rates are low. It is not found in appreciable quantities in the soft water of the Coastal and Great Lakes states. The important thing about enough vanadium is that it inhibits the formation of cholesterol which is blamed for hardening of the arterial walls in heart disease.

"Proper dietary intake of vanadium may give lower cholesterol content of the skin, reduced incidence of gallstones, and less accumulation of cholesterol in the arterial walls," Dr. Strain declared.

Zinc in proper amount in human food would give better bones, better protein repair and fewer skin disorders, Dr. Strain suggested on the basis of experience with feeding of swine and poultry.

The fluid around the cells of the human body that constitute 30% of it is essentially dilute sea water. This is believed to be the result of life's origin in the oceans billions

of years ago. For maintenance of our internal environment, Dr. Strain suggested, our dietary intake of minerals should duplicate the mineral elements found in sea water, plus certain elements for specific needs.

Low death rates for all causes and particularly cardiovascular disease in some geographical regions may be due, Dr. Strain suggested, to more optimum intake of trace elements, particularly vanadium and zinc. High fish consumption may explain the longevity of the Scandinavians, since these elements are present in ocean fish.

The U.S. Geological Survey is determining the minor element content of the principal water supplies of the nation and an evaluation of the association of vanadium intake with geographical variations in cardiovascular death rates will be made.

Other studies in the past year have shown that the cardiovascular death rate seems to be influenced by some unknown constituent of water that is associated with hardness.

If it is found that vanadium and zinc need to be added to make up deficiencies, this will follow the use of iron, iodine and fluorine in a similar way. Iron therapy began with the Greeks. Iodized salt was introduced 40 years ago to become an inexpensive and effective way of preventing endemic goiter. Fluoridation of drinking water to prevent tooth decay has been extended to more than 30,000,000 people in the United States in the past 20 years.

• Science News Letter, 81:20 January 13, 1962

## MEDICINE

# Disease and Environment

► THE SOCIAL environment can determine what diseases people are most likely to get and also whether people get sick to "enjoy" poor health.

"In our society," Dr. Edmund Volkart of Stanford University said, "most illnesses, even minor ones, tend to provoke reactions of sympathy, protectiveness and release from obligations. Under these circumstances, sickness has a certain attractiveness as an escape from stress."

Dr. Volkart said that society can also influence the occurrence of disease by:

1. Modifying the physical environment, as in industrial societies where technological change may produce air pollution, which increases respiratory diseases.

2. Encouraging certain routine behavior, such as cigarette smoking, regarded by many physicians as injurious. Or a common diet such as polished rice may cause beriberi because of lack of thiamine, one of the vital B-complex vitamins.

3. Producing new stresses and problems of adaptation, which may be reflected in higher death rates of men, particularly in the middle years of life.

Dr. Volkart spoke at a joint meeting of

the American Association for the Advancement of Science and the American Sociological Association in Denver, Colo. He is a professor of sociology and also directs the Stanford program in medicine and the behavioral sciences for the University's School of Medicine.

• Science News Letter, 81:20 January 13, 1962

## Sun's Early Radius

► THE SUN when it was forming had a radius several hundred times the distance from the earth to the sun, the American Astronomical Society meeting was told in Denver, Colo.

Dr. A. G. W. Cameron of the National Aeronautics and Space Administration's Institute for Space Studies, New York, said the gas atoms of the forming sun were either in molecular form or condensed on interstellar grains when it was this large size.

During the time the "protosun," as it is called, was first contracting, half of the gravitational energy released was radiated from the surface, Dr. Cameron said. However, when the temperature became high

enough for the molecules to break up or the atoms to become charged, the energy came from that which would otherwise have been radiated.

When the protosun had a radius of about 100 times the distance from the earth to the sun, it became unstable and the instability lasted until after the protosun had shrunk to a radius of about the orbit of Mercury.

Dr. Cameron drew this picture of the birth and very early history of the sun from a study of how the sun could have formed from a vast cloud of interstellar gas.

• Science News Letter, 81:20 January 13, 1962

## SCIENCE NEWS LETTER

VOL. 81 JANUARY 13, 1962 NO. 2

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N. St., N.W., Washington 6, D. C., NORTH 7-2255. Cable Address: SCIENSERVIC.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 7½ cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is addressed. Your new address should include postal zone number if you have one.

Copyright © 1962 by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicated services issued by Science Service. Science Service also publishes CHEMISTRY (eight times a year) and THINGS of science (monthly).

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member of Audit Bureau of Circulation.



### SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: William W. Rubey, University of California at Los Angeles; Wallace R. Brode; Douglas Whitaker, Rockefeller Institute for Medical Research. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; Philip Bard, Johns Hopkins University; Henry Allen Moe, John Simon Guggenheim Memorial Foundation. Nominated by the National Research Council: Leonard Carmichael, Smithsonian Institution; John R. Dunning, Columbia University; Benjamin H. Willier, Johns Hopkins University. Nominated by the Journalistic Profession: Michael J. Ogden, Providence Journal-Bulletin; O. W. Riegel, Washington and Lee University; Ralph B. Curry, Flint Journal. Nominated by the Scripps Estate: Edward J. Meeman, Memphis Press-Scimitar; Frank Ford, Washington, D. C.; Charles E. Scripps, Cincinnati, Ohio.

Officers—President, Leonard Carmichael; Vice President and Chairman of Executive Committee, Charles E. Scripps; Treasurer, Wallace R. Brode; Secretary, Watson Davis.

Staff—Director, Watson Davis, Assistant Director, Dorothy Schriver. Writers: Ann Ewing, Faye Marley, Vincent Marteka, Tove Neville, Marjorie Van de Water, Judy Viorst. Science Youth Division: Joseph H. Kraus, Leslie Watkins. Photography: Fremont Davis. Production: Priscilla Howe, Marcia Nelson. Syndicate Sales: Hallie Jenkins. Conferences: Jane Marye. Librarian: Margit Friedrich. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., GRamercy 3-5410. Advertising Manager: Fred A. Moulton, METropolitan 8-2562.