

ANTIMETABOLITES AND CANCER

AAAS Symposium Volume

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Cancer, Jan-Feb 1956.

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Birza, 196 Bilderdijkstraat, Amsterdam W, Netherlands.)

7-10. Planetaria, symp., Bloomfield Hills, Mich. (J. A. Fowler, Cranbrook Inst. of Science, Bloomfield Hills.)

7-11. Diseases of the Chest, 5th intern. cong., Tokyo, Japan. (M. Kornfeld, American College of Chest Physicians, 112 Chestnut St., Chicago 11, Ill.)

7-12. Laurentian Hormone Conf., annual, AAAS, Blaney Park, Mich. (G. Pincus, 222 Maple Ave., Shrewsbury, Mass.)

7-13. Hematology, 7th intern. cong., Rome, Italy. (S. Haberman, Baylor Univ. Hospital, 3500 Gaston Ave., Dallas, Tex.)

7-20. Industrial Chemistry, 31st intern. cong., Liège, Belgium. (Society of Industrial Chemistry, 28, rue Saint Dominique, Paris 7^e, France.)

8-12. Spectroscopy Colloquium, 7th Intern., Liège, Belgium. (Association des Ingénieurs de l'Université de Liège, 22, rue Forgeur, Liège.)

8-13. International Council of Aeronautical Sciences, Madrid, Spain. (R. R. Dexter, Inst. of Aeronautical Sciences, 2 E. 64 St., New York 21.)

8-17. Sociology, 18th intern. cong., Nürnberg, Germany. (International Inst. of Sociology, Findelgasse 7-9, Nürnberg.)

9-11. Engineering Meteorology 2nd natl. conf., Ann Arbor, Mich. (K. C. Spengler, American Meteorological Soc., 3 Joy St., Boston 8, Mass.)

11-19. Conservation of Nature and Natural Resources, 6th general assembly, Athens and Delphi, Greece. (International Union for Conservation of Nature and Natural Resources, 31, rue Vautier, Brussels, Belgium.)

13-17. Bronchoesophagology, 7th intern. cong., Kyoto, Japan. (C. L. Jackson, 3401 N. Broad St., Philadelphia 40, Pa.)

14-20. Ceramics Cong., 6th intern., Wiesbaden, Germany. (Sekretariat des VI Internationalen Keramischen Kongresses, Reuterstrasse 235, Bonn/Rh., Germany.)

14-21. Cardiology, 3rd world cong., Brussels, Belgium. (F. Van Dooren, 80, rue Mercelis, Brussels.)

15-19. Instrument-Automation Conf., 13th annual, Philadelphia, Pa. (H. S. Kindler, Instrument Soc. of America, 313 Sixth Ave., Pittsburgh 22, Pa.)

15-20. Agriculture, European Confederation 10th anniversary, Vienna, Austria. (European Confederation of Agriculture, Pestalozzistrasse 1, Brugg, Argovie, Switzerland.)

15-20. Carboniferous Stratigraphy and Geology, 4th intern. cong., Heerlen, Netherlands. (Secretary, 4th Carboniferous Cong., Geological Bureau, Akerstraat 86-88, Heerlen.)

16-20. Nuclear Electronics, intern. symp., Paris, France. (Colloque Electronique Nucléaire, 10, avenue Pierre-Larousse, Malakoff (Seine), France.)

16-24. Glacier Movement Symp., Chamonix, France. (International Assoc. of Scientific Hydrology, 61, rue de Ronces, Gentrugge, Belgium.)

21-25. Differential Anthropology, 5th intern. cong., Amsterdam, Netherlands. (R. A. M. Bergman, Royal Tropical Inst., Linnaeusstraat 2A, Amsterdam.)

(See issue of 18 July for comprehensive list)

Letters

Monitoring of Foods

I heartily agree with Barry Commoner [*Science* 127, 1023 (1958)] on the necessity for more data regarding the basic facts of fallout. Because of the extreme complexity of the problem, a detailed understanding can result only from the analysis of very large numbers of samples derived from sampling networks providing intensive, as well as extensive, coverage of the world. One of the practical difficulties preventing the development of such a network has been the extreme difficulty of the radiochemical analysis for significant fission products which are present only to the extent of a small fraction of the natural radioactivity levels.

However, I wish to point out that the nationwide monitoring of foods is not as limited as his reference to the six-station network of the U.S. Public Health Service would imply.

Intensive effort at the Los Alamos Scientific Laboratory over the past 6 years has led to the development of large liquid scintillation counters which are capable of measuring and identifying changes as small as 10 percent of the natural gamma activity of people and foods in counting times of only 3 minutes per sample. Because of the large sample capacity (10,000 per year), the cost per sample is much less than that of conventional techniques. This system was placed in routine operation in the spring of 1956, and the results of the first year's operation were reported in *Science* [125, 1273 (1957)]. During 1956, 1133 measurements were made on people, including subjects from 29 states. The milk program included 168 samples from 11 states, and additional measurements were reported on meat and vegetables. During 1957, the milk network was expanded to include weekly or monthly samples from 31 locations within the United States and a few foreign countries. Eight hundred and eighty-seven milk samples were processed, and 820 determinations were made on people, including 311 subjects from 30 states. The total number of determinations was 2200, with the machine operating at about one-fifth its capacity. A preliminary report has been published [*Science* 127, 283 (1958)], and a more detailed report is in preparation. During 1958, the milk network has been further expanded, and over 1300 samples will be measured for their potassium-40, cesium-137, and barium-140 activities.

Now that the feasibility of such a foodstuffs monitoring program has been demonstrated, I join Commoner in hoping that other agencies, both state and national, will apply these techniques on

an even greater scale. Even with the cessation of weapon testing, similar systems of monitoring will be necessary because of the increased use of nuclear power reactors, whose potential production of fission products far exceeds the amounts of activity produced by bombs.

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E. C. Anderson's comments regarding the feasibility of widespread monitoring of radioactivity in foodstuffs are encouraging evidence that it may now be possible to remedy "the lack of detailed, integrated, continuing data published in a form capable of enlisting the interest of the entire scientific community" that I pointed out in my article. Despite the very valuable contributions made by the Los Alamos group, the over-all situation on the radioactivity of food, especially with respect to strontium-90 in milk, remains rather confused. Anderson's laboratory has indeed produced extremely useful data which have been published in detail in *Science*. However because of the limitations of the bulk-counting technique, strontium-90 data are lacking. The Health and Safety Laboratory of the New York Operations Office of the AEC has studied at close intervals samples of milk from a half-dozen locations in the United States. The data are available in the form of a separate report, but most of the information does not appear in scientific journals. The results of the milk survey conducted by the U.S. Public Health Service were made public on 25 May 1958. In this case publication was in the form of a news release, and the data were restricted to an "average" for the 12 monthly analyses conducted at each of five locations. These variations in the form of publication and in the factual detail that is published illustrate the problem with which I am concerned. Surely the time has come when the agencies concerned with this problem should pool their data and publish them in detail in ordinary scientific journals.

BARRY COMMONER

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Washington University, St. Louis,
Missouri

U.S. and Soviet Science

Many an article has been published recently on Russian science and Russian education. Undoubtedly the training given the pupils of Soviet schools is far more advanced, in the field of science, than that offered their American coun-

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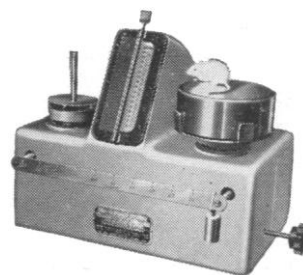
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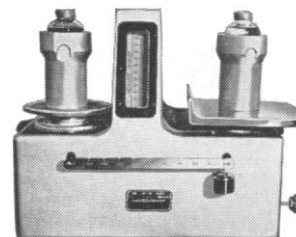
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