went on to point out that the flour "is made by grinding whole fish, including scales, eyeballs, and intestines," and warned that "the controversy over fish flour could develop into one of the agency's major battles."

Into the burgeoning fray has come George McGovern, director of Food for Peace. He spoke last week in Washington before the International Conference on Fish in Nutrition, sponsored by the Food and Agricultural Organization of the United Nations. When properly purged of impurities by heat and washing, he declared, fish flour "is no more adulterated than pigs' feet, or liver or brains or tripe or tongue, which has been properly prepared."

Also joining the battle was Senator Douglas, who announced he would serve fish-flour preparations to his congressional colleagues to publicize its wholesomeness. While Douglas and a number of Senators relied on simply vocalizing their displeasure over FDA's action, several House members introduced bills to exempt fish flour from FDA's jurisdiction. A White House source said that the President himself was displeased by the FDA position and that FDA would not be permitted to stand in the way of a promising solution to mass dietary deficiency in nations we seek to help. The White House was of the opinion that perhaps too much significance had been attached to the FDA action, and that foreign acceptance could be achieved without FDA approval.

For its part, FDA, which is an independent agency, said it would not be pressured by the Congress or the White House into disregarding its obligations to the American people. It said that, as part of the review process, it had requested public comments and had received the wholehearted approval of a number of organizations, including the General Federation of Women's Clubs. And it said it discerned additional support coming its way, some of it from Capitol Hill.

Source of Protein

Very likely to be obscured in the developing row is the great potential inherent in this unpalatable-sounding substance. Also known as fish protein concentrate, fish flour has been produced off and on in various parts of the world since the late 19th century. In recent years it has taken on special significance because of findings of serious protein deficiencies in many national diets.

Its advantages are said to be numerous: It is cheap and highly concentrated. It is nonperishable, even in hot, humid climates. Because it can be made virtually tasteless, it is compatible with a variety of dietary preferences. In small, but still potent quantities, it is undetectable as a supplement in bread and grain preparations, which are the dietary mainstays in the nations most afflicted by protein deficiencies.

Fish flour's potential as a protein supplement has nowhere been realized on a large scale, though it is produced and used in Sweden and a number of other countries.

Many of the most hopeful workers in the field emphasize that technical and production problems must first be overcome, and that these may prove minor as compared to the difficulties of distribution, marketing, and consumer education.

These uncertainties, however, are not shared by the man whose fish-flour petition brought on the FDA action, Ezra Levin, an aggressive businessman and scientist who is president of the BioVin Corporation. BioVin, employing a process of azeotropic dehydration and extraction of lipids from whole, granulated fish, offers a 70-percent protein concentrate at 15 cents a pound, F.O.B. its Monticello, Ill., plant. BioVin's process is well regarded by workers in the field, and its petition was filed with the "cooperation and approval" of the Bureau of Commercial Fisheries, which has a $50,000 fish-flour research project under way at College Park, Md.

To add further to the potential for public confusion on the issue, the petition was filed by a Senate staff aide, with the endorsement of several members of Congress, principally from New England fishing states. This unnecessary but by no means unique procedure has been cited by FDA officials as a sign of threats to the agency's integrity and has precipitated fight-to-the-death pronouncements.

FDA officials proudly point out they have been fighting "filth in food" for 50 years, and say they are not going to establish a precedent that will open the way to a lowering of standards. The fish-flour developers, on the other hand, point to FDA's allowable tolerances for rat dung in wheat.

The Administration, of course, has had more important things on its mind, but considering the interest that it has shown in fish flour's potential, it is difficult to avoid the reflection that this row could have been avoided—D.S.G.

Announcements

A formal statement on **civil defense and modern war**, issued this month by the Society for Social Responsibility in Science, calls for "full disclosure . . . of the facts about civil defense, and nuclear and biological war," since ". . . many inevitable effects . . . are largely ignored in public discussion: the fundamental disruption of the structure of society; genetic mutations in all living things, and unpredictable changes in the ecological balance of the world . . . ." To avoid these, the society calls for an "unwavering search for alternatives . . . ": "Mediation, a stronger United Nations, international law, and other non-violent approaches to conflict situations must be pursued and the world's resources put to constructive use."

The SSRS is defined as "an international group which holds that scientists are morally responsible for the consequences of their work to society, and that scientists should devote themselves to constructive rather than destructive work." (E. J. Lieberman, 24 Claflin Rd., Brookline 46, Mass.)

According to the U.S. Office of Education, of the 13,400 **students working for doctorates** in the academic year 1960–61, more chose the physical sciences than any other branch of science. About 2400 of the candidates chose fields such as chemistry, metallurgy, physics, geophysics, and oceanography. Next in popularity were the fields of education, with approximately 1900 doctoral candidates; social sciences, with 1600; engineering, with 1500; and the biological sciences, with nearly 1400.

Of the approximately 314,000 students enrolled in 1959–60 as candidates for graduate degrees, 9800 received doctorates in that academic year. About two-thirds of those enrolled had completed less than 1 full year of graduate work and another third had completed more than a year.

An exhibition of **Soviet medical services and equipment**, organized by the U.S.S.R. Ministry of Health, has begun a 63-day tour of the United States. The exhibition, now appearing in Oklahoma City, is scheduled to spend a month at the Chicago Museum of Science and Industry, and will conclude its tour at the University of Minnesota. Designed "to acquaint

Americans with the organization of medical care in the USSR, [and with] the development of Soviet medical science, surgical equipment, and drugs," the exhibition will include sections on cardiovascular ailments, cancer, thoracic surgery, and space medicine.

The **Jaques Cattell Press** in Tempe, Arizona, publishers of *American Men of Science, Directory of American Scholars*, and *Leaders in Education*, has recently become a wholly owned subsidiary of the R. R. Bowker Company, New York. Daniel Melcher has been appointed president of the press, succeeding Garrison Cattell, nephew of the late Jaques Cattell. Mrs. Jaques Cattell will continue as vice president. The press will remain in Tempe.

A series of **geology reference pamphlets** for elementary and secondary school science teachers has been initiated by the American Geological Institute. The series will cover information sources, classroom teaching aids, and laboratory and field projects. Three pamphlets presently available in the series are (i) *Sources of Geological Information,* (ii) *Selected References for Earth Science Courses,* and (iii) *Films for Earth Science Courses.* (Publications, AGI, 2101 Constitution Ave., NW, Washington 25, D.C. Price: $0.10 each)

Annual stipends for Public Health Service **postdoctoral fellowships**, administered by the National Institutes of Health, have been increased by $500, to $5000 for the first year, $5500 for the second, and $6000 for the third. The increase applies to postdoctoral research fellowships (new or continuing) awarded on or after 1 July 1961. Allowances for dependents, travel expenses, and research supplies have not been increased.

A **science information service**, designed to aid industry and scientific institutions in implementing research and development projects, has been inaugurated by the Franklin Institute's Technical Library. The service offers literature searches in any area of mathematics, engineering, physics, chemistry, and industrial processing, and provides bibliographic compilations (author-title-source), annotated bibliographies, abstracts of articles, current literature monitoring, and translations. (Alec Peters, SIS, Franklin Institute, Philadelphia 3, Pa.)

Pupae of **saturniid silkmoths** are being solicited in connection with a research project being conducted at Northwestern University. Because a bacterial infection destroyed the university's silkworm crop, *Hyalophora cecropea* pupae in particular, as well as other species, are urgently needed. The university is willing to pay "good prices" for the specimens. (Lawrence Gilbert, Department of Biological Sciences, Northwestern University, Evanston, Ill.)

A new service is available through which an **exchange of homes** is arranged between American faculty members who wish to visit Europe and Europeans in various professional categories who wish to visit the United States. A registry of homes and apartments available for exchange both in North America and in Europe is maintained. Fees range from $25 to $75. (Quid Pro Quo, 865 West End Ave., New York 25)

A recent Soviet article on **antineoplastic therapy** reports that "existing antineoplastic preparations exert a therapeutic effect only on certain definite tumors and fail to influence others," and concludes that "the idea of developing a universal medication against all malignant tumors is absurd." The article is one in a collection of translations compiled from recent issues of the U.S.S.R.'s *Pathological Physiology and Experimental Therapy*. Other articles in the collection deal with experimental cancer of the stomach; hemoglobin changes in malignant and benign tumors; burn trauma and radiation sickness; and an improved heart-lung apparatus. (Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C. $1.50)

The services of the Oak Ridge Institute of Nuclear Studies' **traveling lecture program**, sponsored by the U.S. Atomic Energy Commission, are offered free of cost to colleges and universities in the southern area. A list of the 132 scientist-lecturers and their topics is available on request. (Traveling Lecture Program, P.O. Box 117, Oak Ridge, Tenn.)

A bibliography of **mathematical research articles published in Communist China** from 1949 to 1960 will be issued by the American Mathematical Society, with the support of the National Science Foundation. (AMS, 190 Hope St., Providence, R.I. $1)

Grants, Fellowships, and Awards

Applications for the 1962 Glorney-Raisbeck fellowship in the **medical sciences** are being accepted by the New York Academy of Medicine. The $6000 fellowship is open to all physicians, with preference to candidates from the New York City area. Fellows will be expected to spend the year in full-time investigation, or in study in a special area of science for a career in research and teaching. Deadline: *1 December.* (Executive Secretary for Medical Education, New York Academy of Medicine, 2 E. 103 St., New York 29)

Nominations for career investigators in **leukemia research** are being solicited by the Leukemia Society. A 5-year award of $10,000 to $15,000 per annum, renewable to 10 years, will be presented to qualified investigators in basic science whose research is broadly related to the problem of leukemia. Nominees must serve as a regular member of the faculty or staff of their institution. Deadline: *1 November.* (Herbert C. Lichtman, 405 Lexington Ave., New York 17)

Two research fellowships in **marine biology**, financed by the U.S. Office of Naval Research, are available through the Scottish Marine Biological Association. Applicants should have a master's degree, or its equivalent, in biological sciences. Fellows will be trained in analysis of plankton collections obtained from the Continuous Plankton Recorder survey of the northeastern Atlantic Ocean and the North Sea. The survey is to be expanded to include new routes across the Atlantic and in North American waters. Funds will be available for attendance at scientific meetings in the United Kingdom and Europe. Salaries will range from £800 to £1000 per annum. Applications should be made immediately. (Officer-in-Charge, Oceanographic Laboratory, Craighall Rd., Edinburgh 6, Scotland)

The following awards for support of **medical research and teaching careers** are available through a program recently established by the U.S. Public Health Service and administered by the National Institutes of Health.

Research career awards, intended for experienced investigators, will provide full-career support in 5-year increments. A yearly maximum of four

applications may be submitted by each institution.

Research development awards, intended for younger postdoctoral investigators with 3 years' professional experience, will be made initially for 5 years and are renewable for up to 5 additional years. No limit is placed on the yearly number of applications to be submitted by individual institutions.

Recipients of awards in either category will be responsible to their sponsoring institutions. (Career Development Review Branch, Division of Research Grants, NIH, Bethesda, Md.)

Meeting Notes

The 12th national conference on **standards** will be held from 10 to 12 October in Houston, Texas. The conference will include sessions on the philosophy and practice of standardization; plastics, safety, and data processing standards; optimum distribution through standardization; and a case history of growth through standards. (American Standards Association, 10 E. 40 St., New York 16)

The 1961 international conference on **luminescence** will be held from 9 to 13 October at New York University. The conference, jointly sponsored by the university, the Air Force Aeronautical Research Laboratory, the Army Research Office (Durham, N.C.), and the Office of Naval Research, is similar to one held in Paris in 1956. (Grace M. Spruch, Physics Department, New York University, Washington Square, New York 3)

A symposium on **optical character recognition** will be held from 15 to 17 January 1962, in Washington, D.C. The meeting will cover available equipment, current research, requirements of potential users, and future progress. Demonstrations of optical character recognition systems in operation in the Washington area will be arranged. (Josephine Leno, Code 430A, Office of Naval Research, Washington, D.C.)

A **chemistry symposium**, honoring Carl S. Marvel, will be held on 27 and 28 December at the University of Arizona. (H. Freiser, Department of Chemistry, University of Arizona, Tucson)

New Journals

Environmental Health Letters (introductory issue), Aug. 1961. G. Fishbein, publisher. Environmental Health Newsletter, National Press Building, Washington 4, D.C. Semi-monthly. $50 per year.

Food Research Institute Studies, vol. 1, No. 1, Feb. 1960. M. K. Bennett, director. Food Research Institute Studies, Stanford University, Stanford, Calif. Tri-annually. $2.50 per issue; $7 per year.

Sportärztliche Praxis, Heft 2-3, 1961. Verlag Brüder Hollinek, Wein III, Steingasse 25, Austria. Quarterly. DM. 3 per issue.

Infrared Physics, vol. 1, No. 1, Mar. 1961. W. K. Weihe, S. Passman, N. Migeotte, T. S. Moss, Eds. Pergamon Press, Inc., 122 E. 55th St., New York 22, N.Y. Institutions, $20 per year; individuals, $10 per year.

Vision Research, vol. 1, Nos. 1 and 2, June 1961. T. Shipley, Ed. Pergamon Press, Inc., 122 E. 55th St., New York 22, N.Y. Institutions, $30 per year; individuals, $10 per year.

Experimental Agriculture and Animal Husbandry, vol. 1, No. 1, May 1961. R. N. Sandiford, Ed. Australian Institute of Agricultural Science, 226 Clarendon St., East Melbourne, C.2, Victoria. Quarterly. £5 (Australian) per year.

Scientists in the News

Barry Commoner, professor of plant physiology at Washington University and a member of the St. Louis (Mo.) Committee on Nuclear Information, will be a visiting lecturer in Moscow and Leningrad this month, in response to an invitation from the U.S.S.R. Academy of Sciences.

Recent staff appointments at the Wyeth Laboratories' Steroids and Natural Products Section:

Herchel Smith, of Manchester University, has been named manager of the section.

David Herbst, of Syntex, S.A., and **James F. Fisher**, of Colgate Palmolive Company, will become senior research chemists.

Daniel M. Teller, of duPont Laboratories, **George H. Douglas**, of Manchester University, and **Theodore J. Foell**, of Lederle Laboratories, will become research chemists.

Roger Revelle, on leave from his post as director of the University of California's Scripps Institution of Oceanography, has been appointed science adviser to the Secretary of the Interior.

Reinhold Rüdenberg, emeritus Gordon McKay professor of electrical engineering at Harvard, will receive an Elliott Cresson medal of the Franklin Institute "for his many contributions to the electric power industry."

Kenneth F. Girard, technical director of clinical laboratories at the Boston dispensary and assistant professor of bacteriology at Tufts Medical School, has been named assistant director of the diagnostic laboratories of the Massachusetts State Department of Health.

Carey Croneis, professor of geology, and **W. V. Houston**, physicist and past president of Rice University, have been named chancellor and honorary chancellor, respectively, of the University.

The following senior faculty members in the University of Maryland's department of physics will be on sabbatical leave during 1961–62:

John S. Toll, chairman of the department, will be at the Institute for Theoretical Physics, Lund, Sweden. **Howard J. Laster**, associate chairman of the department, will be acting chairman during Toll's absence.

George Snow will be at the European Organization for Nuclear Research (CERN), Geneva, Switzerland.

S. Fred Singer will be at California Institute of Technology's Jet Propulsion Laboratory.

Leon Gintzig, director of hospital administration research and development for the Veterans Administration, has been appointed associate professor of hospital administration at George Washington University College of Government, Business, and International Affairs.

Frederick S. Brackett, biophysicist, has retired from the U.S. Public Health Service's National Institute of Arthritis and Metabolic Diseases. Brackett, chief of the section of photobiology in the institute's laboratory of physical biology, will be retained by the institute as a consultant.

Recent staff appointments in the U.S. Atomic Energy Commission's Division of Reactor Development:

Robert W. Ritzmann, nuclear engineer in the division's evaluation and planning branch, has been named AEC Scientific Representative to Canada.

Ira F. Zartman, chief of the division's reactor physics branch, has been named AEC Scientific Representative in Tokyo.

Nelson Sievering, senior AEC representative in the U.S.-Euratom cooperative program on the peaceful uses of atomic energy, Brussels, Belgium, has returned to the U.S. as the division's associate director for advanced systems. He is succeeded by **John A. Erlewine**, special assistant in the research and industrial development section.

Torkel Weis-Fogh, of the University of Copenhagen, has been appointed Harvard University Prather lecturer in biology for the current academic year.

V. Harry Adrounie has been appointed Air Force adviser to headquarters of the 3rd Aeromedical Evacuation Group, and detachment commander of the 1st Aero-medical Transportation Group at Mather Air Force Base, California. He was previously environmental medicine officer in the Surgeon General's Aerospace Medicine Division.

Harry C. Allen, Jr., of the National Bureau of Standards, has been named chief of the bureau's Analytical and Inorganic Chemistry Division.

Recent faculty appointments at St. Louis University's Institute of Technology:

Charles B. Belt, Jr., of the University of Utah, will become assistant professor of geology and geological engineering.

Leonard C. Jones, of Emerson Electric Manufacturing Co., will become associate professor of engineering.

Joseph V. McKenna, of Syracuse University, will become professor of engineering.

Stanislaw A. Vincenz, of the Industrial Development Corp., Jamaica, B.W.I., will become associate professor of geophysics and geophysical engineering.

F. Norman Briggs, associate professor of physiology at Tufts University School of Medicine, has been appointed professor in the University of Pittsburgh School of Medicine's newly created department of physiology. **William D. Peckham**, head of the biochemistry department of Schering Corp., has been appointed research associate in the new department.

Leo Esaki, a physicist for International Business Machines Corporation, will receive a Stuart Ballantine medal from the Franklin Institute for his discovery of the tunnel diode.

Recent staff appointments in the U.S. Office of Naval Research:

F. Joachim Weyl, former ONR research director, has been named deputy chief and chief scientist. He succeeds **Thomas J. Killian**, who resigned to accept a position in private industry. **Shirleigh Silverman**, head of the Naval Research Group, will replace Weyl as research director.

Joseph F. Saunders, who has been with the ONR since 1952, has been named head of the medicine and dentistry branch in the Biological Sciences Division. He succeeds Capt. **James A. English**, who has retired.

Arthur R. Von Hippel, director of Massachusetts Institute of Technology's Laboratory for Insulation Research, has been elected vice president in charge of fundamental materials research for U.S. Sonics Corporation, a firm which designs and manufactures solid-state materials and devices.

William E. Swinton, principal scientific officer of the British Museum (Natural History) and one of the three general secretaries of the British Association for the Advancement of Science, has been appointed head of the Royal Ontario Museum's life sciences division, Toronto.

Recent Deaths

Sister **Aloysius Marie**, 82; organizer of the physics department at Trinity College; physics teacher at the college from 1915 until her retirement in 1951; 4 Sept.

Andrew Bagdasarov, 64; director of the U.S.S.R. Institute of Hematology and Blood Transfusion and a member of the Soviet Academy of Sciences.

Philip P. Calvert, 90; emeritus professor of zoology at the University of Pennsylvania; 23 Aug.

Fay-Cooper Cole, 79; emeritus professor of anthropology and founder of the department at the University of Chicago; department chairman from 1929 to 1947; 3 Sept.

John R. Freeman, 65; metallurgical consultant and retired vice president in charge of research at Anaconda-American Brass Company; 2 Sept.

Walter Horning, 69; forestry expert and adviser to the director of the Interior Department's Bureau of Land Management since 1949; 5 Aug.

Aaron S. Levin, 65; surgeon who specialized in industrial medicine and geriatrics; 23 Aug.

J. Heng Liu, 71; surgeon and president of the Red Cross Society of China; first Minister of Health of the Republic of China; 26 Aug.

Malcolm C. Moore, 60; chemist and manager of the Hercules Powder Company's technical personnel development section; 1 Sept.

R. Henry Morris III, 64; chemical engineer and retired special assistant for industrial liaison to the director of the U.S. Department of Agriculture's Eastern Utilization Research and Development Division, Wyndmoor, Pa.; 22 Aug.

Evan C. Noonan, 49; chief of the physical chemistry division of the Naval Ordnance Laboratory's chemistry research department, White Oak, Md.; 23 Aug.

H. P. Robertson, 58; member of the President's Science Advisory Committee, and professor of mathematical physics at California Institute of Technology; 26 Aug.

D. E. Robinson, 38; engineer in the Oak Ridge National Laboratory's engineering and mechanical division; 6 Aug.

Henry S. Sharp, 55; chairman of mathematics at Purdue's Calumet extension and former commandant of the U.S. Coast Guard Academy; 7 Aug.

Clarence A. Shelton, 59; geodesist and chief of the Coast and Geodetic Survey's horizontal control section; 4 Aug.

Harry C. Storrs, 75; psychiatrist and retired superintendent of the Letchworth Village (N.Y.) state school for retarded children; 25 Aug.

Morris W. Travers, 89; emeritus professor of physics at University College, Bristol, England; 25 Aug.

Elmer M. Ward, 59; engineer and assistant director of the National Academy of Sciences Highway Research Board; 27 Aug.