News and Notes

Second Conference on Medium Energy Nuclear Physics

ABOUT 137 physicists assembled at the Mellon Research Institute on June 4, 5, and 6 for the second Conference on Medium Energy Nuclear Physics sponsored by the University of Pittsburgh. The sessions were quite informal, with a relatively small number of papers and ample opportunity for discussions. The fact that no time limits were imposed either on the speakers or on the ensuing discussions helped to make this conference a worth-while and enjoyable experience for those attending.

In the course of the three-day program 18 papers were presented, dealing with beta decay, nuclear forces and capture gamma rays, photon-induced reactions, inelastic neutron scattering, a review of nuclear energy levels, and neutron-induced reactions.

In the first paper of the opening session, L. Langer (Indiana) indicated that all the experimental data on beta decay can be understood by a unique interaction involving a linear combination of scalar, tensor, and pseudoscalar interactions. The last term is included to explain the unusual case of RaE. On the other hand, the next speaker, M. E. Rose (Oak Ridge), cautioned that perhaps more experimental evidence is needed before a final decision for a unique beta interaction can be made. He discussed some possible experiments which might decide between different interaction terms and also would give information about the occurrence of the so-called Fierz interference terms between scalar and tensor interactions. A quite different problem was the subject of the closing paper of this morning session presented by H. Primakoff (Washington, St. Louis), concerning double beta decay. After a review of the experimental data, he pointed out that more accurate experiments must be performed in order to make a choice between the two theories proposed for double beta decay, one assuming no emission of a neutrino, the other involving the emission of two neutrinos. He also mentioned that precise measurements of the energy distribution from μ meson decay would throw some light on this problem.

The afternoon session was opened with a paper by I. Talmi (Princeton) on the angular momenta and parities of excited states of even-even nuclei. Theoretical arguments, based on the independent particle model of nuclear structure, make plausible the empirical rule for even-even nuclei that states of odd augular momentum have odd parity and those with even angular momentum have even parity. E. Gerjuoy (Pittsburgh) presented a critical discussion of the Butler theory of stripping reactions and examined the agreement of this theory with experimental data. The last two speakers in this session reported investigations at Chalk River on the gamma radiation emitted in nuclear capture processes. The measurement of relative intensities of gamma transitions resulting from proton capture was discussed by E. B. Paul, while similar measurements for the neutron capture process were presented by G. Bartholomew. A comparison of the relative gamma transition probabilities with the Weisskopf formula, based on the independent particle model, showed good agreement if the complexity of the nuclear states is taken into account. Electric dipole transitions, however, appear to be somewhat slower than predicted by the theory.

The morning session of the second day was devoted to photon-induced reactions. The application of isotopic spin selection rules to gamma-alpha reactions was discussed by V. Telegdi (Chicago). The satisfactory agreement between the theory of Gell-Mann and Telegdi and the experimental data on the C^{12} $(\gamma, 3\alpha)$ and O^{16} $(\gamma, 4\alpha)$ reactions lend support to the assumption of isotopic spin selection rules. The determination of excitation functions for photon-induced reactions by using the continuous x-ray spectrum of a betatron was described by L. Katz (Saskatchewan). With careful regulation of the betatron energy the Saskatchewan group has observed breaks in the excitation curves which are interpreted as being due to nuclear level structure.

The first three papers of the fourth session were devoted to the determination of cross sections of inelastic scattering of neutrons. J. Beyster described the experimental arrangement at Los Alamos for measuring the inelastic scattering cross sections of fission neutrons for a number of elements. To reduce the influence of elastic scattering, the scattering material was used in the form of a spherical shell surrounding the detector. The theory pertinent to this arrangement was presented by H. Bethe (Cornell), who also reported the results. These show that the cross sections vary approximately as $A^{2/3}$, except for the "magic nuclei." T. Bonner (Rice) spoke of similar investigations using monoenergetic neutrons from the *d-d* and *d-t* reactions. R. Hellens (Westinghouse) gave preliminary results of photographic plate determinations of energies of neutrons scattered from iron. Concluding the afternoon session, an up-to-date compilation of all known energy levels of light nuclei was very clearly presented by F. Ajzenberg (MIT). The level diagrams were arranged in such a manner as to emphasize the implications of charge symmetry and charge independence of nuclear forces.

H. Feshbach (MIT) opened the final session with a discussion of the magnitude of the nuclear radius based upon electron scattering measurements. Such experiments appear to indicate a value some 20% smaller than that derived from experiments involving only nuclear particles. No explanation for this discrepancy is known. In the second talk, H. Barschall gave an account of the excellent work at Wisconsin on neutron scattering. Total neutron cross sections

have been measured as a function of energy E from 1 to 3 Mev for over 50 nuclei of different A. The data, presented in a three-dimensional plot, showed a smooth variation with E and A, with several characteristic hills and dales. That all the features of these variations can be derived from a simple theory was demonstrated by V. Weisskopf (MIT) in the next talk. This theory assumes that the nucleus is represented by a square well potential including an imaginary term which gives rise to an absorption of the incident neutron wave (a so-called gray crystal ball). The limitations of this theory were carefully pointed out by the speaker and certain modifications suggested. After a brief summary of inelastic scattering experiments with monoenergetic neutrons, C. Goodman (MIT) reported on some preliminary experiments which indicate the possibility of excitation of low-lying levels of heavy nuclei (Ta, Pt) by low-energy protons (1.5 Mev).

In addition to the program, visitors were cordially welcomed to the laboratories of both the University of Pittsburgh and the Carnegie Institute of Technology. The social gatherings in the evenings and the picnic at the Saxonburg site of the Carnegie synchrocyclotron were certainly appreciated by all participants of the conference.

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Scientists in the News

Spencer R. Atkinson, Head of the Department of Graduate Orthodontics in the University of Southern California School of Dentistry, has been awarded the Albert H. Ketcham Memorial Award, the highest honor in the field of orthodontics, given by the American Board of Orthodontics with the approval of the American Association of Orthodontists. Dr. Atkinson was a pioneer in the development of dentistry for children. Next to his Pasadena residence he has built a modern and well-equipped laboratory for anthropological research in orthodontics. The laboratory collection contains more than 1000 human skulls, about 400 with normal "bite" and the majority with teeth free of cavities. Virtually every dental deformity is represented in the others. About 1500 upper and lower jaws of children from 17 different countries are included in the collection. Dr. Atkinson has also been decorated by the Mexican government with the Double Aztec Eagle, Insignia Grade, for his work in advancing dental education in Mexico.

Sanford S. Atwood, Head of the Department of Plant Breeding at Cornell University, has been appointed Dean of the Graduate School. Commencing July 1, he will serve a 5-year term. He will continue for the time being as Head of the Department of Plant Breeding. A member of the Cornell faculty since 1944, Professor Atwood is widely known for his work in improving forage crops.

George Granger Brown, Dean of the College of Engineering at the University of Michigan, has been appointed Treasurer of the American Institute of Chemical Engineers to fill out the term of C. R. DeLong, Vice President of North American Solvay and the Solvay American Corporation, who resigned after serving since 1936. Dr. Brown is a former President of A.I.Ch.E.

Merrill M. Flood, formerly with the Rand Corporation in Santa Monica, has accepted an appointment as Professor of Industrial Engineering at Columbia University.

Paul D. Foote, Executive Vice President of the Gulf Research and Development Company and Past President of the American Physical Society, was awarded in June an Honorary Doctor of Science degree from Carnegie Institute of Technology, the eighth to be given in the school's 53-year history.

Joseph K. Hill, lecturer in education and public health at Yale University, will join the staff of the State University of N. Y. College of Medicine as Assistant Professor of Public Health and Preventive Medicine.

In August a delegation of some 80 American home economists under the leadership of **Mildred Horton,** Executive Secretary of the American Home Economics Association, will attend the Eighth International Congress on Home Economics in Edinburgh, Scotland. The aim of this international federation is to encourage the development of home economics in every country, with the cooperation of the public authorities and of educational, scientific, and professional organizations.

Dwight J. Ingle, Research Physiologist at the Upjohn Company, has been appointed Professor of Physiology in the Ben May Laboratory for Cancer Research at the University of Chicago, effective September 1.

To honor outstanding engineering achievement in the field of agriculture, the American Society of Agricultural Engineers awarded the John Deere Gold Medal to **Orsen W. Israelsen** of Utah State Agricultural College, Logan, Utah, and the Cyrus Hall McCormick Gold Medal to **Andrew A. Potter,** Dean of the Engineering Schools at Purdue University, Lafayette, Ind.

Joseph M. Kirshner has joined the staff of the Ordnance Electronics Division of the National Bureau of Standards, Washington. A specialist in solid state physics and gas discharge phenomena, Dr. Kirshner will be engaged in investigations of the theoretical aspects of guided missile fusing. Since 1948 Dr. Kirshner has been associated with the Naval Research

Laboratory, Washington, where he conducted research on photoconductivity and on the behavior of electrons in gases.

Paul Meeks has resigned as chief of the guided missile engineering division of the California Institute of Technology's Jet Propulsion Laboratory in Pasadena, where he has been stationed for more than 10 years, to head a new development and manufacturing program for guided missile instruments at the Clary Multiplier Corporation, San Gabriel.

Edward G. Spencer has joined the staff of the Ordnance Electronics Division of the National Bureau of Standards. A specialist in microwave spectroscopy and magnetic resonance, he came to the NBS from the Naval Research Laboratory, Washington, D.C., where he was investigating paramagnetic and nuclear resonance of solids.

Harlow L. Walster, who retired July 1 after 34 years on the North Dakota Agricultural College faculty, received the sole honorary degree granted by the institution this year. Dr. Walster joined N.D.A.C. as an agronomist in 1919, was appointed Dean of the School of Agriculture in 1924, and in 1934 became Director of the North Dakota Experiment Station. He also organized the Flax Institute of the United States two decades ago and was its president for 20 years, until retiring a few months ago.

Grants and Fellowships

Authors of outstanding technical papers presented at previous meetings of the **American Society for Testing Materials** received awards at the 56th Annual Meeting of ASTM in Atlantic City during the week of June 29, as follows: to Evan A. Davis and Michael J. Manjoine, Research Engineers, Westinghouse Research Labs., for their paper "Effect of Notch Geometry on Rupture Strength at Elevated Temperatures," the *Charles B. Dudley Medal*; to William N. Findley and P. G. Jones, Theoretical and Applied Mechanics Dept., University of Illinois, Robert L. Sutherland, Mechanical Engineering Dept., State University of Iowa, and W. I. Mitchell, South Dakota School of Mines, for their paper "Fatigue Machines for Low Temperatures and for Miniature Specimens," the *Richard L. Templin Award*; to Katherine Mather, Corps of Engineers, Jackson, Miss., for "Applications of Light Microscopy in Concrete Research," the *Sanford E. Thompson Award*; to J. R. McDowell, Westinghouse Research Labs., for "Fretting Corrosion Tendencies of Several Combinations of Materials," the *Sam Tour Award*. All papers were read at the 1952 50th Anniversary Meeting.

Cornell University is the recipient of a three-year grant of $260,000 from the **Ford Foundation,** for support of their program of Indian studies, for the creation of fellowships for the study of India and Indian problems, and for field research in India. Morris E. Opler will direct the program. A team of Cornell social scientists and technicians will carry on research in the field in connection with the community development enterprises which has been developed in rural India under the auspices of the Indian Government, the Ford Foundation, and Point IV-TCA. They will cooperate in research being carried on to evaluate results and measure progress, and to assess long range implications. The project is a part of studies in culture and applied social science that began in 1948.

Eli Lilly and Company has recently renewed a grant to the University of California to support the work of Saul Winstein on fundamental projects in organic chemistry.

Howard H. Hillemann of the Department of Zoology, Oregon State College, has been awarded a **U. S. Public Health Service** grant of $13,589 to support a comparative study on the placenta of primates other than man, including cyto- and histochemical studies of tissues. The grant is to cover a 3-year period.

Meetings and Elections

The 11th Annual Meeting of the **Electron Microscope Society of America** will be held at the Pocono Manor Inn, Pocono Manor, Pa., Nov. 5–7. Programs with abstracts of papers to be presented will be available Oct. 15 from A. R. T. Denues, Program Chairman, Sloan-Kettering Institute for Cancer Research, 444 E. 68th St., N. Y. 21, N. Y. Local arrangements are being handled by Kenneth S. McCarty, Veterans Administration, 130 W. Kingsbridge Rd., Bronx, N. Y.

At the 52nd Annual Meeting of the **Medical Library Association** the following officers were elected: president, Marion Dondale, Albany, N. Y.; vice president (president-elect), Wilma Troxel, Chicago, Ill.; honorary vice president, Louis S. Goodman, Salt Lake City, Utah; secretary, Audrey L. Kargus, St. Louis, Mo.; treasurer, R. A. Schlueter, Oak Ridge, Tenn. The Board of Directors includes William D. Postell, New Orleans, La. (immediate past president); Bertha B. Hallan, Portland, Ore.; and J. Alan MacWatt, Pearl River, N. Y. Mildred R. Crowe, Birmingham, Alabama will serve as chairman of the Nominating Committee.

The 16th Meeting of the **Meteoritical Society** will be held Sept. 2–4 in the Randall Physics Laboratory of the University of Pennsylvania on its Philadelphia campus. The general sessions will be open to the public, and members of the American Meteor Society are particularly invited to attend.

The newly organized **Southwestern Association of Naturalists** has elected the following officers: president, W. Frank Blair, University of Texas; vice president, George Goodman, University of Oklahoma; secretary-treasurer, Herndon Dowling, University of

Arkansas; editor, George M. Sutton, University of Oklahoma. The Association will promote field studies and distribute information about Southwestern plants and animals, and any interested person is invited to join.

An international conference on **Upper Atmosphere Research** is to be held at Oxford University, England, Aug. 24–26. Research will be presented by American, British, and European scientists, and arrangements for the meeting are under the direction of the Royal Society's Gassiot committee, led by H. S. W. Massey, University of London physicist. James Van Allen, Head of the Physics Department and rocket research specialist at the State University of Iowa, is coorganizer of the conference and is in charge of the U. S. delegation. He has been since 1948 Chairman of the national Upper Atmospheric Research panel, which is coordinating the research reporting of American institutions and organizations active in upper atmospheric research.

Miscellaneous

The editor of an American journal has received the following letter from a Russian member of his editorial board. Because it is singularly revealing of the state of affairs in Russian science, the letter is printed below, but without those identifying names that might lead to reprisals upon the writer.—EDITOR.

I received your letter of the second of September, 1952, and in accordance with your request I am writing to inform you that I am continuing my work at . . . and up to now have been receiving your journal . . . quite regularly.

For my part I want to ask you the following:

For nearly 20 years I have been a member of the editorial board of . . ., and throughout that time I have contributed nothing in this capacity.

A similar situation in regard to my participation in the work of the editorial staff will continue if I remain a member. In connection with this, I am asking you to remove my name from the editorial board and at the same time stop sending me your journal.

I am asking you not to send me the journal . . ., not only because I am resigning from the editorial staff, but also because in recent years there have been published in your journal papers and reviews which, according to their ideological content, do not correspond to my own convictions and point of view and therefore I do not care to carry any responsibility for them.

The most powerful electric motors known to have been built have been installed at the **Arnold Engineering Development Center,** Tullahoma, Tennessee. The motors are as high as a two-story house, and their installation is the first major step in the assembly of what is believed to be the world's largest rotating machine. The two motors, rated at 83,000 horsepower each, and a smaller pair, rated at 25,000 horsepower each, will produce a total of 216,000 horsepower to drive five huge compressors which will produce man-made hurricanes for transonic and supersonic wind tunnels of the Propulsion Wind Tunnel Facility at the Center. This Center is the newest of the nine research, development, and testing Centers of the Air Force's Air Research and Development Command, and will provide the means for testing and evaluating supersonic aircraft, guided missiles, and aircraft engines.

Geological Survey topographic mapping parties have started operations in the 1953 Alaskan mapping program. Work is scheduled in two general areas. One covers approximately 17,000 square miles in the Kantishna River, Melozitna, Tanana, Fairbanks, Healy, and Mt. McKinley areas. This is to be all new mapping at a scale of 1: 63,360. The other area will cover approximately 68 additional "inch-to-the-mile" quadrangles in the Seward, Kenai, Tyonek, Blying Sound, and Seldovia areas. The latter operations will be in the nature of "field completion," to check the cultural data contained on maps almost ready for publication. Mapping in Alaska is a cooperative effort with the U. S. Air Force and the Navy photographing the territory from the air for all photogrammetry accomplished by the Survey and the Corps of Engineers. Electronic aids have also been used to cut costs and speed operations. This summer it is planned to use two helicopters for the reconnaissance and transportation necessary to establish basic and supplemental control in the area of the new mapping. One helicopter party will be under the direction of party chief Leo H. Hendrickson, assisted by I. J. Benes, A. J. Kordziel and E. E. McClelland; the other helicopter party will be directed by party chief M. A. Harmel, assisted by I. B. Johnson, L. J. Roberts, and T. E. Taylor. The field completion work in the vicinity of Seward and Kenai will be accomplished by party chief R. L. Longworth. Maps of the Reconnaissance Series may be purchased for 25 cents each and those of the 1: 63,360 series at 20 cents each, from the Chief of Distribution, Geological Survey, Washington 25, D. C. An index map showing the areas in Alaska covered by Survey mapping is available free.

Following a request from the Secretary of Commerce that the National Academy of Sciences appraise the quality of the work performed by the **National Bureau of Standards** in relation to the battery additive AD-X2, the Academy has appointed the following scientists to constitute a committee for that purpose: Zay Jeffries, Chairman, retired Vice President in charge of Chemical Department, General Electric Company; E. K. Bolton, retired Director of Chemical Department, E. I. du Pont de Nemours and Co.; William G. Cochran, Professor of Biostatistics, Johns Hopkins University; John G. Kirkwood, Professor of Chemistry, Yale University; Victor K. La Mer, Professor of Chemistry, Columbia University; L. G. Longsworth, Member, Rockefeller Institute; Joseph E. Mayer, Professor of Chemistry, University of Chicago; John C. Warner, President, Carnegie Institute of Technology.

"The Healing Art of Old New York," a special exhibition arranged in connection with the New York

meetings of the American Medical Association, opened at the **New York Historical Society** on June 2nd. Covering the period of the last 150 years, the exhibit is composed of portraits and engravings of prominent physicians, doctoral theses, medical tracts, illustrations of early hospital buildings, and items of medical equipment from Revolutionary and Civil War times. Century-old manuscripts, books, and doctors' bills provide an interesting contrast to modern medical methods. The display will be continued through Nov. 15.

The U. S. Public Health Service's new Clinical Center at Bethesda was formally dedicated on July 2 by Oveta Culp Hobby, Secretary of the Department of Health, Education, and Welfare. Marking the culmination of more than 5 years of planning and construction, the dedication inaugurated use of the new 500-bed Center which is designed to strengthen the Public Health Service's efforts to solve the problems of cancer, mental illness, arthritis, heart disease, and other long-term illnesses under research programs conducted by the National Institutes of Health at Bethesda.

Recent Deaths

Eugene Antrim (79); educator and university president, Crescent, Okla., June 4; **John B. Appleton** (62), geographer, Bethesda, Md., June 24; **Ralph Bailey** (79), analytical chemist, Westfield, N. J., June 11; **Paul H. Belding** (56), dentist and editor, Waucoma, Iowa, June 3; **Dmitri Belyankin** (76), Russian geologist, Moscow, June 21; **William Braunstein** (53), pathologist, Weehawken, N. J., June 23; **John J. Breslawsky** (75), mathematician and engineer, Passaic, N. J., June 13; **Robert H. Briggs** (55), industrialist and chemist, Bronxville, N. Y., June 2; **Harry W. Cave** (63), agriculturalist, Stillwater, Okla., June 23; **Louis M. Chokla** (74), civil engineer, East Rockaway, L. I., N. Y., June 1; **Al D. Crowley** (55), chemical engineer, Union, N. J., June 6; **Thomas H. Curtin,** eye-specialist, lecturer and writer, New York, N. Y., June 3; **Benjamin M. Davis** (?), physiologist, Oxford, Ohio, June 18; **Tihamer I. De Fabinyi** (62), economist, Boston, Mass., June 10; **Charles C. Deam** (87), botanist and conservationist, Bluffton, Ind., May 29; **George L. Diggles** (65), laboratory director and electrical engineer, Greenport, L. I., N. Y., June 17; **Theodore Ferris** (80), naval architect and marine engineer, Wallington, N. J., May 30; **Walter S. Finlay, Jr.** (70), mechanical engineer, New Rochelle, N. Y., June 17; **Alma M. Frank** (55), child psychologist, New York, N. Y., June 1; **E. D. Friedman** (68), neurologist, New York, N. Y., June 7; **Irving I. Gellman** (63), chief medical officer, veterans' hospital (Huntington, W. Va.), Queens, N. Y., June 14; **Walter Goldfarb** (43), psychiatrist, New York, N. Y., June 5; **Edwin Graham** (89), pediatrician, Madison, Va., June 10; **Joseph R. Gray, Jr.,** (83), bacteriologist and pathologist, Upland, Pa., June 9.

Robert M. Haig (65), political economist, New York, N. Y., June 9; **Daniel Hanson** (61), British metallurgist, Haselor, England, June 12; **Frank R. Henderson** (60), pharmacist and Sharp and Dohme government representative, Philadelphia, Pa., May 30; **W. Oakley Hermance** (80), medical professor, Philadelphia, Pa., June 12; **William Holman** (74), bacteriologist, Toronto, Canada, June 22; **George W. Humpfer** (63), electrical engineer, Philadelphia, Pa., June 10; **Albert F. Hutchinson** (60), safety engineer and chemist, Plainfield, N. J., June 11; **Albert E. Jenks** (83), anthropologist, Minneapolis, Minn., June 6; **Louis A. Klein** (82), dean and professor of veterinary medicine, Philadelphia, Pa., June 22; **Edwin P. Kolb** (69), tuberculosis specialist, Patchogue, L. I., N. Y., June 14; **Milton Kutz** (69), electro-chemist, Wilmington, Del., June 16; **Murray A. Last** (52), eye surgeon, New York, N. Y., June 25; **David Lieberthal** (86), consulting dermatologist, Chicago, Ill., June 10; **Ralph K. Logan** (54), metallurgist and industrialist, Cleveland, Ohio, May 29; **Harry McCormack** (76), chemical engineer and professor, Chicago, Ill., June 8; **William L. Mann, Jr.** (68), head of Naval Medical Research Institute (Bethesda), Washington, D. C., June 12; **Dan O. Mason** (61), chemist and safety engineer, Highland Park, N. J., June 11; **Aristotle D. Michal** (54), mathematician, Pasadena, Calif., June 14; **Ellis H. Minns** (78), British archaeologist, Cambridge, England, June 14.

Oscar Norgorden (44), of Washington, D. C., electronic scientist, Hokkaido, Japan, May 29; **John W. Nuzum** (62), cancer specialist, Chicago, Ill., June 14; **Leland B. Norton** (43), entomologist, Ithaca, N. Y., June 11; **Joseph G. Parker** (29), surgeon, USPHS, New York, N. Y., June 21; **Earle B. Phelps** (76), chemical biologist and public health specialist, Gainesville, Fla., May 29; **Martin L. Reymert** (69), psychologist and director of child research, Mooseheart, Ill., June 2; **Geza Roheim** (61), anthropologist and psychoanalyst, New York, N. Y., June 7; **Edward Schaub** (71), of Chicago, Ill., philosopher, Durham, N. C., May 24; **Robert C. Schott** (62), electrical engineer, New York, N. Y., June 12; **Geddes Smith** (63), executive associate of Commonwealth Fund, New York, N. Y., June 16; **Ferdinand Sonneborn** (79), chemist, and industrialist, New York, N. Y., June 9; **D. A. Steele** (59), mathematician, New York, N. Y., June 18; **Earle Strain** (87), pathologist, Great Falls, Montana, June 2; **Cyril Tasker** (54), director of heating and ventilating research, Warren, Ohio, June 24; **David Turnoff** (41), specialist in internal medicine, Philadelphia, Pa., June 14; **Alexander A. Vasiliev** (85), historian, Washington, D. C., May 30; **Perley C. Voter** (64), chemist and professor, Middlebury, Vt., June 12; **Stephen H. Watts** (75), professor of surgery, Charlottesville, Va., June 7; **Mary Willcox** (97), zoologist, Pocasset, Mass., June 5; **P. D. R. Williams-Hunt** (31), museum curator, Kuala Lumpur, Malay, June 12; **Erle F. Young** (64), sociologist, Modesto, California, May 31.