

physics covering the entire energy spectrum from 1 Mev to the highest energies in the cosmic radiation that can be undertaken with a minimum amount of equipment by a small staff and yet lead to meaningful and to significant physical results, representing a real contribution to knowledge.

"4. It was felt that the participation of undergraduates in cooperative research is beneficial and should be encouraged. However, it is suggested that, for students, the physics rather than the purely technical aspects of the research problem be emphasized.

"5. It was recognized that in order for cooperative research to be carried out successfully by college physicists, it is absolutely essential that adequate time be made available. In some cases this can only be accomplished by decreasing teaching loads. In order to maintain effective cooperation it is also imperative that means for frequent visits to the cooperating institution be provided. While some colleges may not be able to make substantial financial contribution to these programs, they could share in the activity by giving such arrangements their whole-hearted support.

"6. Many college teachers find it difficult to get started in the rewarding field of nuclear emulsion research because of their need for information about recent research developments and specialized techniques. It is recommended, therefore, that summer institutes be established to instruct college teachers in current nuclear emulsion research techniques and to review knowledge in relevant fields of modern physics."

A more comprehensive digest of the proceedings of the conference is being prepared by members of the steering committee. Requests for these should be addressed to the undersigned at the Department of Physics, DePauw University, Greencastle, Indiana.

Malcolm Correll
DePauw University

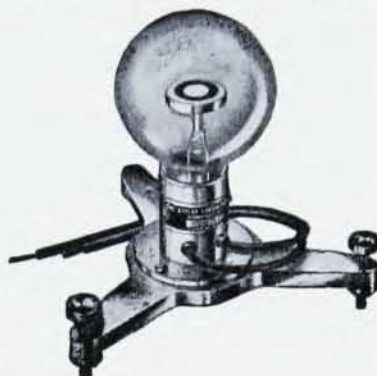
Association of Physics Teachers

The annual meeting of the American Association of Physics Teachers was held in downtown New York, using the facilities of the Hotel McAlpin, Hotel New Yorker, and The Manhattan Center, on January 27, 28, and 29.

The meetings on Thursday were devoted to a symposium on the role of physics in engineering education, and to one on solid-state physics and nuclear physics in engineering education. These were headed, respectively, by R. Ronald Palmer, Beloit College, and Raymond J. Seeger, National Science Foundation. Participating in the first symposium were J. R. Dunning (Columbia), L. P. Smith (Cornell), J. H. Keenan (Massachusetts Institute of Technology), O. W. Eshbach (Northwestern), G. H. Carragan (Rensselaer Polytechnic Institute) and W. W. Watson (Yale). Participating in the second symposium were F. Seitz (University of Illinois), E. Weber (Brooklyn Institute of Technology), J. E. Goldman (Carnegie Institute of Technology), C. Bonilla (Columbia), and D. Loughridge

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Bulletin No. 2 On Request

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(Northwestern). The results of intramural conferences between physics departments and schools of engineering in various institutions were reported, and discussions were held on the place and the importance of solid-state and nuclear physics in engineering education. The results of the past year's work with respect to the engineering physics problem are encouraging. There have been many joint meetings between physics and engineering departments resulting in greater clarification of the problem and in pointing up how the complete program can be altered to the mutual benefits of both in setting up curricula which are more efficient and which include recent developments in the various areas. With the rapid advancements in recent years in nuclear and solid-state physics and the many engineering problems that it has caused it becomes necessary for the inclusion of these important areas of work in the total engineering program. While the general pattern is becoming somewhat standardized by giving more time to the fundamentals in physics, mathematics, and chemistry and less to the pure engineering-type course, it is, however, necessary for each college or university to work out its own pattern on how to best homogenize the total program.

During Friday morning F. W. Van Name, Franklin and Marshall College, and Mark W. Zemansky, the City College of New York, were presiding officers. The first portion of the program was given over to demonstration experiments and ten-minute papers, while the second portion included a symposium on audio-visual aids. Leonard O. Olsen, Case Institute of Technology, discussed the effectiveness of the Case-General Electric science fellowship program for high school teachers. The symposium dealt with the use of physics lecture demonstrations, the use of television as an educational tool, and the production of animated films in physics. Two new AAPT films were shown: "Standing Longitudinal Waves" and "The Properties of Liquid Helium."

On Friday afternoon the AAPT met jointly with the American Physical Society for the address of the retiring president of APS, presentation of the Oersted Medal, and the Richtmyer Memorial Lecture. Marsh W. White, retiring president of AAPT, and R. T. Birge, president of APS, were the presiding officers. Retiring APS president Hans A. Bethe spoke on "Pi Mesons and Nucleons," being a summary of the theory and experimental confirmations to date in this particular area of physics. Vernet E. Eaton, Connecticut Wesleyan, was the recipient of the Oersted Medal, which is awarded each year to an outstanding teacher of physics. Dr. Eaton addressed the session on the subject "Physics is an Art". Dr. Eaton stated that he had spent his life in trying to improve undergraduate teaching in physics and that the core of physics is simple and must come first in teaching. He stated that we can insist upon complete rigor, for physics is based on logic and logic can be learned perhaps better in physics than in a course called logic. Physics structure is a thing of beauty, simplicity, and logic, and a lot of imagination, and the important advances have come from using great

imagination. At this point he mentioned the work of Fermi, Bohr, Einstein, and others. He cited the familiar phrase "honesty is the only policy" as being a correct statement for a person working with natural law in the field of physics. The scientific method is very important and must be well understood by the physicist because he must be prepared to attack almost any problem from the laboratory standpoint. He stressed the importance of the teacher sharing the emotional stresses that the student gets in his learning process and that the student should be put on his own in much of his laboratory work in order that he will develop scientific muscle. The experiences must be those of the student with the instructor acting as a guiding hand in the background. A successful lecturer must have a keen sense of timing to lead the students to feel they are a part of the whole and each student must feel that the lecture is meant directly for him. Dr. Eaton ended with the statement that physics is based on mathematical rigor, logic, sound architecture, beauty, and imagination, and is truly an exciting study.

Eugene P. Wigner, Princeton University, and president elect of APS, 1955-1956, delivered the thirteenth Richtmyer Memorial Lecture, using as his subject "The Development of the Compound Nucleus Model". Dr. Wigner reviewed the history and development of the compound nucleus model, giving the basic physical reasons for this model, the extensions that have been added to the basic theory through confirming experiments, and discussed the relation between the compound model and other nucleus models.

At the annual dinner on Friday evening LeRoy Apker, General Electric Company, was the recipient of the Physical Society's Oliver E. Buckley Solid-State Physics prize. Dr. Apker briefly reviewed his work in the photo-electric effect on potassium iodide crystals. H. D. Smyth, formerly of the Atomic Energy Commission, now at Princeton, gave the first address of the evening. His paper was published in full in the May 1955 issue of *Physics Today*. The second lecture of the evening was illustrated by kodachrome slides and given by G. E. Bell, who was a member of the 1953 American expedition that attempted to climb the mountain K-2 in the Himalayas near Pakistan.

Saturday morning was given to a symposium on physics in the secondary school curriculum under the chairmanship of S. Winston Cram (Kansas State Teachers College), who heads the AAPT committee on physics in secondary education. Participating in the symposium were Willard Geer (University of Southern California), Fletcher Watson (Harvard University), Paul Brandwein (Forest Hills High School), Morris Meister (Bronx High School of Science), and M. H. Trytten (National Research Council). Reports on the role of science in secondary schools, the obstacles to increased physics enrollment, and the future outlook for science teachers brought considerable discussion as to how the role of physics in the secondary school could be improved. There were many ideas presented which will be given further consideration by the various com-

mittees working on the problem. It was pointed out that the future supply of science teachers of the secondary school may not depend much on the training we give and encouragement as to the need for a larger supply of these teachers. When college, industry, and government pay is so much greater and with the other attractions offered in these areas many teachers find it almost impossible to remain at the secondary level.

V. L. Bollman, Occidental College, was the presiding officer of the Saturday afternoon session, at which time several ten-minute papers and demonstration experiments were presented. Attention was called to the preparation of the Taylor Memorial manual and people were urged to send their contributions for the manual to Dr. T. B. Brown, George Washington University, Chairman of the Memorial Manual Committee. Frank Verbrugge, Carleton College, presented an experiment on "Forced Oscillations", which has proven very interesting and instructive to students performing the experiment. Eric M. Rogers, Princeton University, presented two experiments in mechanics and showed his 20-foot standard with a continuous roll of paper outlining six weeks' work in astronomy that he uses as a part of the general college physical science course at Princeton. He pointed out that theory and experiment based on basic laws are most essential and best fitted to guide the student to critical thinking of his own. Richard M. Sutton, Haverford College, gave the results of an interesting experiment on "The Equation of Time" that he has been conducting during the past year. With a shaft of sunlight passing through a small opening in an otherwise opaque window, the data have been recorded on his office floor.

The annual business meeting on Saturday morning was conducted by President Marsh W. White, Pennsylvania State University. The following report of officers was made: president-elect, W. C. Michels; secretary, F. Verbrugge; member of the Executive Committee to 1957, H. K. Schilling. The treasurer of the association is F. W. Sears; R. F. Paton was nominated as a member to the Board of Directors of the American Institute of Physics. W. S. Webb and M. W. Zemansky received citations for meritorious services to AAPT. President White introduced the president for 1955, R. Ronald Palmer of Beloit College.

Dr. White pointed out the special importance of the work of the committee studying the importance of physics in engineering education and of the committee studying the relation of AAPT with the problems confronting the teaching of physics in the secondary school. Heartfelt appreciation was expressed by the membership of AAPT to the retiring president, M. W. White, and to the retiring secretary of the past six years, R. F. Paton, for the excellent service and hard work that they have given to the association.

At the meeting of the council on Thursday evening and annual business meeting on Saturday morning many important resolutions and recommendations were passed which will continue and increase the interests and activities of the association.

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Plans were made for holding the 1955 summer meeting of AAPT at Pennsylvania State University in conjunction with ASEE and the 1956 annual meeting in New York City in conjunction with the 25th anniversary meeting of the American Institute of Physics.

Glenn Q. Lefler
Eastern Illinois State College

Temperature Scale Revision

During the meeting of the American Physical Society in Washington, D. C., late in April, some fifty low-temperature physicists met at the National Bureau of Standards under the chairmanship of F. G. Brickwedde to discuss the problems associated with the shortcomings of the presently-used helium vapor pressure scale of temperature (1948 scale). The topic of greatest interest was a proposal by J. R. Clement of the Naval Research Laboratory arising out of his critical survey of the deficiencies in the 1948 scale. This was that recent and future thermometric work in this region be examined in relation, not to the 1948 tables, but rather to an empirical formula developed by Dr. Clement and his NRL associates which fits the published data within about two millidegrees over the entire range.

The meeting reacted favorably to the proposal and it was urged that all interested laboratories throughout the world be acquainted with the NRL research in the hope of obtaining a generally-acceptable revision of the 1948 scale during the Fourth International Conference on Low Temperature Physics, to be held in Paris later this year. The detailed reports were expected to be mailed before the first of June. For further information, those interested are advised to write to Dr. Clement at the Naval Research Laboratory, Cryogenic Physics Section, Washington 25, D. C.

Sigma Pi Sigma

The annual spring luncheon meeting of Sigma Pi Sigma, physics honor society, was held in Washington, D. C. on April 29th. Raymond T. Birge, president of the American Physical Society, and M. H. Trytten, retiring president of Sigma Pi Sigma, were the guests of honor. The society has elected the following officers for a three-year term: Vincent E. Parker, president (Louisiana State University); Stanley S. Ballard, vice president (Visibility Laboratory, Scripps Institution of Oceanography); Marsh W. White, executive secretary (Pennsylvania State University). Two members of the executive council were elected at the annual meeting of the council on April 28th: Donald H. Loughridge, dean of the Northwestern University Institute of Technology, and Frederic A. Scott, head of the physics department at the University of Connecticut. Retiring from membership on the council were E. Scott Barr of the University of Alabama, and W. B. Pietenpol of the University of Colorado.

The executive secretary reported to the Sigma Pi

Sigma council that the society has continued its growth during the academic year 1954-55. Four new chapters have been installed at Loyola University (New Orleans), Texas Technological College, the University of Hawaii, and Wabash College. The society now has about 13 000 members, with approximately 2000 active members in the 87 chapters.

50 Years of Relativity

A conference is to take place July 11-16 in Berne, Switzerland, to celebrate the 50th anniversary of the theory of relativity, announced in 1905 by the late Albert Einstein. The program includes addresses by W. Baade, P. G. Bergmann, N. Bohr, P. Jordan, B. Kaufman, O. Klein, L. Kollros, A. Lichnerowicz, W. Pauli, H. P. Robertson, R. J. Trumpler, and E. P. Wigner. The conference is under the presidency of Professor Pauli; the secretary is Professor A. Mercier of the Institute of Theoretical Physics, University of Berne.

Glass Structure

The Gordon Conference on Glass Structure, one of the Gordon Research Conferences for 1955 sponsored by the American Association for the Advancement of Science, is to be held at Kimball Union Academy, Meriden, New Hampshire, August 15-19. The meeting, the first of its kind, is designed to assemble physicists, chemists, and glass technologists who are interested in the details of the vitreous state and the properties of glass. The fields covered will be liquids, inorganic glasses, and polymers. Application for attendance can be made to O. L. Anderson, Bell Telephone Laboratories, Murray Hill, New Jersey.

Nuclear Science

The 2nd annual meeting of the Institute of Radio Engineers Professional Group on Nuclear Science (PGNS) will be held September 14-16 in Oak Ridge. Those interested have been invited to submit (by July 15th) abstracts of 200 words or less to: Dr. H. E. Banta, Papers Committee, Oak Ridge National Laboratory, P. O. Box P, Oak Ridge, Tennessee.

Electrical Techniques in Medicine

The 8th annual Conference on Electrical Techniques in Medicine and Biology will be held in November, probably in Washington, D. C. The exact date and place are to be announced later. Sponsored jointly by the Institutes of Electrical and Radio Engineers and the Instrument Society of America, the conference brings together research workers in biology, medicine, physics, electronics, and electrical and instrument engineering. Authors are invited to submit titles of papers for consideration by the program committee to E. Dale Trout, Conference Chairman, 4855 Electric Avenue, Milwaukee 1, Wisconsin.