

THE number of returns (61) is small, yet it represents about 15 percent of the annual crop of PhD's in physics. The sampling covers only a few of the larger research institutions, and so is representative of the attitudes developed within relatively large student groups. The dates of the survey (May–September 1954) cover a period when there was considerable press coverage and discussion of the Oppenheimer security case, which has obviously affected some replies and may be transitory in its significance. Nevertheless, the results are qualitatively significant and expose a situation which has not previously been documented by statistical evidence.

We observe that 70 percent of the respondents had not yet accepted a position. Possibly when faced with the practical choice of salary and job security many will make decisions which do not fully match their hopes. Employers should be interested in the predominant choice of scientific personnel for job interviews, as shown by the answers to (2). We also note that military deferment is a problem to only a small fraction of students, possibly because many have already served their tour of duty in the services.

Answers to questions (4) to (7) show an expected strong interest in basic research and an understandable affection for the ideal combination of university teaching and research. However, the small number of such opportunities cannot accommodate more than a fraction of the students indicating such a preference, and many will of necessity accept other employment. The interest in government laboratories shown by (5) is abnormally low, and does not seem to agree with the considerably larger number accepting such jobs; the returns may reflect the effects of the security clearance problem. In the answers to (7) we observe that a majority desire continuing guidance or collaboration; few feel competent to direct their own efforts at this early stage in their careers.

The answers to questions (8), (9), and (10) show that the security clearance problem is real. They indicate a distrust of security procedures, and an urge to avoid involvement, for nearly half of these young scientists. About 30 percent have formed these opinions within the past 6 months, showing the effect of recent events. We can be confident that this does not represent any concern about their own clearability. And when the need arises, such as a national emergency, these young scientists will join in defense work and do their bit; of this we can be sure. Furthermore, the choice of salary and the urge for job security will force many who prefer not to become involved to go through security clearance procedures. Still it is clear that abuses of the security system have alienated the sympathies of young scientists to a significant extent.

Although these returns are fragmentary, they cast some light on several problems which have been much in the minds of thoughtful analysts of trends in science. Further evidence would be of real value, and also alternative interpretations of the significance of the results.

Miscellany

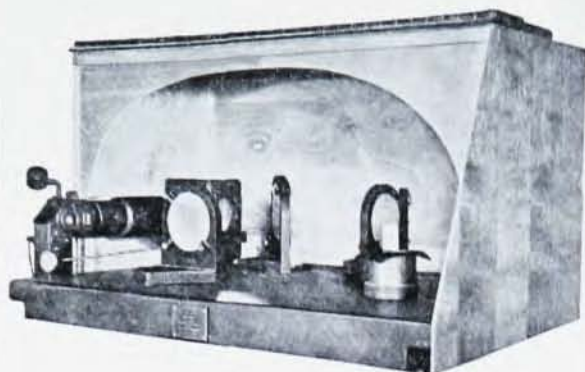
Bolling Resolution

A Joint Congressional Committee on the Economics of Atomic Defense was proposed in the House of Representatives on February 7th in a Concurrent Resolution (H. Con. Res. 66) introduced by Representative Richard Bolling of Missouri. The resolution, which has been sent to the House Rules Committee, is designed "to bring before the Congress and the American people the best judgments of scientists, lay readers, and congressional experts" on the effect of the H-bomb on existing concentrations of population and industry, the possibilities for defense, and the case for industrial dispersion and urban decentralization, including a full review of the many complicating factors that would be involved in such action. Membership of the proposed committee would be drawn from the Joint Committee on Atomic Energy and the Joint Committee on the Economic Report. According to the terms of the Bolling resolution, the committee would have the specific function of conducting a series of studies to establish and examine the relevant facts and to communicate the results of those studies to its parent committees and to Congress by the first of next year.

Education

The 1955 Summer Session at MIT will consist of 31 courses on a wide variety of subjects, including weather radar, parachute technology, ionizing radiations for industrial processing, numerical analysis, numerical weather prediction, technique of infrared spectroscopy, noise in electron devices, applications of infrared spectroscopy, low-temperature engineering and research, and noise reduction. There will also be a special program for science teachers. Detailed information may be obtained from the Summer Session Office, Room 7-103, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

A cooperative effort between Wayne University and a number of business and industrial concerns has resulted in a program of four special summer courses in the field of computing. Scheduled to take place from June 6th through July 2nd, the areas covered are: electronic computers, business and engineering applications; automatic data processing; mathematical programming of management problems; and numerical methods and advanced programming techniques. "Foremost experts in the respective fields" as well as the



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staff of the University's Computation Laboratory will conduct the lectures, discussions, and workshops. During the courses, representative business and engineering problems will be programmed for the Laboratory's digital computer, UDEC, and for several commercially available machines. For further information write to A. W. Jacobson, Director, Computation Laboratory, Wayne University, Detroit 1, Michigan.

The Summer Laboratory Course in Techniques and Applications of the Electron Microscope will be given again this summer from June 13 to June 25 by Cornell University's Laboratory of Electron Microscopy. The course, under the direction of Professor Benjamin M. Siegel, is designed to give members an intensive survey of basic theory and interpretation of results and will have Professors Cecil E. Hall of MIT and Robley C. Williams of the University of California at Berkeley as guest lecturers. The registration is limited to a small group so that ample facilities are available for each participant to pursue laboratory work in his special field at an introductory or advanced level depending on his previous experience. Further inquiries should be addressed to Professor Benjamin M. Siegel, Department of Engineering Physics, Rockefeller Hall, Cornell University, Ithaca, New York.

A two-week workshop on the use of radioisotopes in high school science teaching will be held at Iowa State Teachers College from June 13 to 25 with the technical assistance of the Atomic Energy Commission. Enrollment is limited to 24, and 20 scholarships are available through a grant from the Standard Oil Foundation, Inc. Housing for a limited number will be provided on the campus, and married teachers may bring their wives. Inquiries may be addressed to J. W. Kercheval, Science Department, Iowa State Teachers College, Cedar Falls, Iowa.

The University of Maryland has announced the availability of a number of graduate and postgraduate positions for research in upper-atmosphere physics and cosmic rays. Applicants for predoctoral research assistantships must satisfy all requirements for admission to the University of Maryland Graduate School. A limited number of postdoctoral fellowships will be awarded to candidates possessing a PhD or equivalent who wish to pursue advanced studies in upper-atmosphere physics, cosmic radiation, and related astrophysical topics, using high altitude rocket techniques. For further information on these postdoctoral fellowships, write to Professor S. F. Singer, Physics Department, University of Maryland, College Park, Maryland. Applications for the graduate research assistantships can be obtained from the Physics Department Secretary, University of Maryland.

Thirty all-expense fellowships for qualified secondary school mathematics teachers are available in connection with a program to be held at the Case Institute of Technology from June 19 to July 29. The program, sponsored by du Pont, will consist of courses, lectures, and visits to nearby computer establishments.

ENGINEERS SCIENTISTS

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Graduate credit is available for the courses. For information and application blanks write Dean Elmer Hutchisson, Case Institute of Technology, 10900 Euclid Avenue, Cleveland 6, Ohio.

A summer institute for secondary school teachers will be conducted at the Oak Ridge Institute of Nuclear Studies from August 1 to 26 under the sponsorship of the National Science Foundation. Financial assistance up to \$215 will be granted to a number of the participants who will be limited to approximately 48. A variegated program will be carried on, including lectures and laboratory work in physics, chemistry, mathematics, and engineering, and conferences on various pertinent aspects of high school science teaching. For application blanks and further information write Dr. Ralph T. Overman, Special Training Division, Oak Ridge Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tennessee.

Armstrong Cork Company has announced the inauguration of a program of undergraduate scholarships and graduate science fellowships for colleges and universities, with participating schools to be selected by the company on the basis of their high scholastic standards and the total number of each school's graduates employed by the company. The plan, which is part of Armstrong's broad program of support of higher education, is designed "to assist young men who are planning their careers in business or industry to acquire undergraduate degrees, and to help graduate students acquire doctors' degrees in chemistry or physics." Tuition, fees, and books up to a maximum of \$1100 per year are covered for each scholarship or fellowship, and the participating school, if privately supported, receives a grant of \$500. Each fellow will also receive a stipend of \$1500. The first Armstrong fellowships have been awarded to Cornell University and the University of Pennsylvania. The following institutions have been selected to receive scholarships: Bucknell University, Drexel Institute of Technology, Franklin and Marshall College, Indiana University, Lehigh University, Northwestern University, The Pennsylvania State University, University of Pennsylvania, Rensselaer Polytechnic Institute, and Syracuse University.

The Classical Geon

The geon (an abbreviation for "gravitational-electromagnetic entity", and a replacement for the name *kugelblitz*) is an electromagnetic disturbance held together by the gravitational attraction of the mass associated with it. The significance of the geon and some of its properties are examined in detail in the January 15th *Physical Review* in an article by John A. Wheeler, who concludes that it completes the scheme of classical physics by providing for the first time an acceptable classical theory of the concept of body. "The existence of geons would seem to impart to classical general relativity theory a comprehensiveness for which one had not dared to hope. This theory turns out not only to