# Institute doings

# ... REPORT TO MEMBERS

### Anniversary Meeting

The year 1951 will be the twentieth anniversary year of the American Institute of Physics. Founded on May 3, 1931, it opened its offices at 654 Madison Avenue, New York, on October 1 of the same year. To signalize the anniversary, enjoy the fruits of unity, and demonstrate the magnitude of physics as a field of human endeavor, all of the Member Societies will this year meet together in Chicago during the week of October 22nd. The American Physical Society, the Optical Society of America, the Acoustical Society of America, and the Society of Rheology will hold then their regular fall meetings, and the American Association of Physics Teachers will hold a special one.

Plans for this occasion are now well advanced, and will be announced shortly by the Member Societies and the Institute. There will be a joint meeting day, Thursday, devoted to a symposium on the state of physics today. This will be of outstanding interest as is assured by the caliber of the speakers: Enrico Fermi, E. U. Condon, J. C. Slater, Edwin Land, Harvey Fletcher, and Karl K. Darrow. A joint banquet will be held in the evening of the same day.

A feature of the meeting will be an exhibition of instruments and apparatus. Suppliers have expressed considerable interest in this, and we can be assured that it will be of great interest also to all who attend.

### Manpower Mobilization

Increasing international tension has caused the Government to begin a build-up of military strength. The program to accomplish this end is not yet completely designed. Since it could help or hinder the advancement of physics, use or misuse the services of physicists, and augment or restrict the flow of recruits into the profession, the detailed development of the national program is a concern of the Institute.

The Institute has not been in a position to influence appreciably the planning of research and development projects, nor their allocation to new agencies, old agencies, companies, or educational institutions, although clearly the arrangements for such projects will affect the capacity of educational institutions to continue training. The Institute has, however, contributed to the writing of regulations and legislation governing the status of the individual in the present warlike circumstances.

### Selective Service

In 1948, the Director was appointed to the "Trytten Committee", which has developed a twofold plan for continuing the flow of students for professional careers and for the proper employment of those whose training is, or will have been, completed. Deferment of students, under the plan, is based on a national aptitude examination plus satisfactory achievement in college. Deferment is carried through graduate training. Those whose training is completed are subject to occupational deferment, national advisory committees in Selective Service Headquarters being set up under the plan to assist all elements of the System to carry out the intent of the law and the regulations in this respect.

### Resources Board

The National Security Resources Board approached the Institute in September for recommendations on mobilizing scientists in an "all out" emergency, such recommendations not to be necessarily within the framework of the Selective Service Act. After a special conference of experienced advisors, a letter was sent the NSRB on November 8, principally advocating that all professionally qualified men of draft age be transferred from the supervision of local draft boards to that of a National Scientific Personnel Board which could, on the basis of documented need, allow the induction of some into the armed forces, the rest being required to engage in approved essential civilian activities.

### Legislation

In January 1951 the Defense Department proposed legislation to draft all able-bodied men of the 18 year age group for Universal Military Service and Training. It can be said that the Trytten Committee's thinking is partly responsible for the provisions of the proposal under which some 75,000 men in each age group would be selected, after four months basic training, to "engage in study or research in medicine, the sciences, engineering, the humanities and other fields . . . in the national interest". For those older than the callable age group, essentially all of the present Selective Service Act would remain in force and the Trytten Committee recommendations would have direct validity.

The Chairman of the Governing Board testified on January 30th before the Preparedness Subcommittee of the Senate Armed Services Committee inquiry that the training and effective use of scientists should be a primary concern of legislation, not a residual matter subordinate to

military training and service. He also recommended that the calling up of scientists who are reservists be critically regulated.

### National Scientific Register

The Institute is assisting the NSRB, under provisions of a contract with the Federal Security Agency, Office of Education, to assemble the physics part of a new National Scientific Register. The Register will record the names and indicative professional facts of all AIP members who return the voluntary questionnaire. To date over 75% have responded. The present main purpose of the Register is to appraise the nation's scientific manpower resources as a guide to policies, regulations, and legislation.

### Physics Students

According to estimates, 350 doctor's degrees, 900 master's degrees and 3400 bachelor's degrees were awarded in physics. Enrollments of undergraduate majors have increased from 8700 in 1946–47 to 12,670 in 1949–50. While these latter figures include part-time students and reflect varying definitions of the term "majoring in physics", their magnitude explains why a demand has developed for a system of professional "student sections" in physics to meet a need already recognized and served by such sections in chemistry and engineering.

### Student Sections

The Institute began in the fall of 1950 to establish such sections on an experimental basis. Any accredited institution may have a section if its physics department continually provides a physics major curriculum and at least fifteen physics students want to be members. Membership must be open to all undergraduate and graduate students having physics as a primary interest. None other than a student may be an active member. Dues are collected locally, out of which $2 per member is paid to the Institute. The Institute provides *Physics Today* to the members by bulk distribution through the local secretary.

Thus far 28 sections have been approved by the Executive Committee, and 19 of these are fully established. This is only a beginning but it will guide the Institute to such adjustments and further development as appears desirable. The Institute's aim will be to serve and stimulate the student, to enhance his professional pride and responsibility at the start of his career, and cultivate his desire to belong to the appropriate Member Societies. *Physics Today* will serve as the principal medium for the achievement of this aim.

### Placement Service

The Institute's Placement Service held its annual "Register" in February at New York. The following significant statistics compared with those of one year earlier indicate the sharp change that has occurred in the employment situation.

| | *1950* | *1951* |
|---|---|---|
| Number of registrants | 434 | 361 |
| Number of employers represented | 119 | 177 |
| Number of job openings listed | 260 | 1361 |

A special Register is planned for the Anniversary Meeting next October in Chicago. Any doubt that the Placement Service is worth its cost has been dispelled by the praise it has received from employers. Under the direction of Donald E. Kirkpatrick, our procedures have now been developed to a high point of efficiency.

### *Physics Today*

*Physics Today* continued in 1950 to mature in quality and usefulness. Begun with two main objectives, to be a "house organ" for physics and a kind of readable report on physics for non-physicists, *Physics Today* continued to test its reception in both directions. The feeling has grown that it should develop primarily as a medium to serve physicists but that a continuation of its feature articles, presenting the state of special fields of physics in non-specialized language, is consistent with such a development.

Mr. David A. Katcher, to whose creative ability much of the excellent character of *Physics Today* must be ascribed, resigned, the October issue being the last for which he was responsible. The Institute is most fortunate that Mr. Robert R. Davis, who had assisted Mr. Katcher since January 1949, was by then fully prepared to take over the duties of Managing Editor. He has done so with the policy guidance and backing of Dr. Gaylord P. Harnwell as Editorial Director and a group of distinguished and public spirited physicists as Editorial Board.

As the potential value of *Physics Today* to physics and physicists has each year become more clear, various steps have been taken to carry it through the difficult initial years. General circulation to all members was in 1950 made optional to each of the Member Societies. The Institute is indebted to the Optical Society, the Acoustical Society, and the Society of Rheology for taking, during 1950, group subscriptions for their members, at a rate of $2 per member. They thus bore the circulation cost for these groups. Other Institute members desiring the journal paid the full subscription price of $4 as individuals.

### *Physics Today*, 1951

The Executive Committee duly noted that the group subscription plan had not been acceptable to the American Physical Society or the American Association of Physics Teachers, our largest Member Societies, and that those societies which had joined in it had done so at the sacrifice of reserve funds. The Committee therefore felt *Physics Today* should be placed on a voluntary individual subscription basis. To the extent that it succeeds, on its own, to attract readers and advertisers it will demonstrate its worthiness as an element in the Institute's work for the service of the physicist and the advancement of physics.

The Institute's aim for *Physics Today* remains the ultimate establishment of a medium of intercommunication between all physicists, a medium that is truly serviceable and welcome. The plan for 1951 is based on the idea that such a goal must be achieved by merit and cannot be forced. If *Physics Today* comes to be favored by enough members of the Physical Society and of the Association of Physics Teachers, the Councils of these and the other Member Societies should find it possible through the Institute to reestablish the general circulation of *Physics Today* to all members.

### Institute Technical Journals

The *Review of Scientific Instruments*, *Journal of Chemical Physics*, and *Journal of Applied Physics* continued satisfactorily to serve their fields in 1950. The *Journal of Chemical Physics* eliminated its backlog of articles awaiting publication. The *Journal of Applied Physics* expanded its pages to meet the growing pressure for the publication of research reports in its field. It is expected that applied nuclear research will be represented in rapidly increasing volume in this journal.

### Advertising

In a further effort to increase our revenue from advertising, we decided, in August, to discontinue our agency agreement for advertising solicitation and to set up our own department staffed by Institute employees. This resulted in lower cost operation and several thousand dollars more net revenue in 1950.

By agreement between the Institute and Member Societies, only Institute journals carried advertising prior to 1950. Early last year it was decided to ask member societies whether they would be willing to open their journals to advertising with the understanding that the Institute would handle solicitations, that the cost of solicitation, production, and distribution of advertising pages would be paid for out of gross revenue, and that net revenue from such sales would be split on a 50–50 basis between the Member Society and the Institute. Two societies accepted the proposal and advertising has already started in their journals, in substantial volume in one case.

### Governmental Support

During most of 1949 and the earlier part of 1950, the Office of Naval Research, in association with the Atomic Energy Commission, helped to defray the cost of publishing the results of government-supported research in nuclear physics. The great stimulation of research in this field by government funds has brought the task of publication to emergency proportions. The agencies wish to publish in the appropriate scientific journals for many valid reasons, and have considered various ways of assisting such journals to carry the load.

### Page Charge

The Institute has been endeavoring to secure general acceptance of the page charge principle and procedure which has long been an integral part of the operation of the physics journals. A conference called by the National Research Council afforded us an opportunity to present the advantages of the procedure. Partly as a result of that conference, the Atomic Energy Commission has just adopted as a policy the honoring of regular page charges.

At the beginning of 1950 the page charge stood at $4 per page. Never a large fraction of the total cost per page, it had by then become quite a small one. Early in the year the page charge was raised from $4 to $8. This rate now applies to the *Physical Review, Journal of the Optical Society, Journal of the Acoustical Society, Review of Scientific Instruments, Journal of Chemical Physics,* and *Journal of Applied Physics.* The *American Journal of Physics* remained at $4. The charge is not applicable to the *Review of Modern Physics* and *Physics Today.*

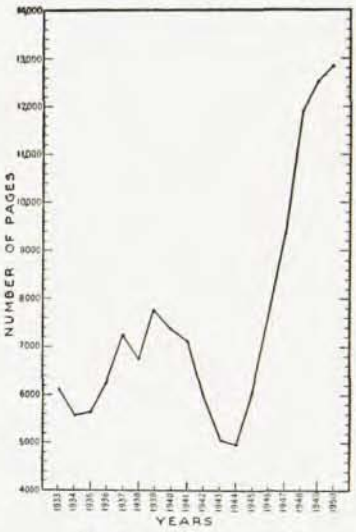
Considerable efforts were made to give circulation to the logic and justification of the charge and the higher rate thereof, and it is gratifying to note that acceptance of the increase has been good. Actually the percentage of chargeable pages for which charge has been honored *increased* in the cases of the *Physical Review, Journal of Chemical Physics,* and *Review of Scientific Instruments.* For the *Physical Review* it now runs close to 90%.

### Physics Abstracts

The Institute completed in 1950 an ONR supported study of the needs of physicists for abstracting services in physics. The joint AIP-APS Committee on Physics Abstracts supervised this study. Dr. Dwight E. Gray, now of the Science Division, Library of Congress, was Director of the project. A report is available of the findings in detail. They lead to the conclusion that the journal *Physics Abstracts* fairly well meets the needs but ought to cover a wider scope in borderline fields and needs better indexing. It was recommended that ways be found to make financial support available. Editors of physics journals were urged to edit author's abstracts so they could be used intact by *Physics Abstracts* and to provide copies of these in the proof stage.

### Publishing Department

The Institute in 1950 published 12,820 pages of journals and 316 pages of meeting bulletins—a record 13,136 in all. The graph shows actual pages published without adjustment for the fact that during part of 1949 and all of 1950 the average number of words per page was, because of typographical changes, considerably higher than in earlier years. Had such an adjustment been made, the decrease in slope would still have been present but less marked.




*Number of pages published*

| | |
|---|---|
| For the member Societies: | |
| Phys. Rev. | 4076 |
| Rev. Mod. Phys. | 446 |
| J. Op. Soc. Am. | 988 |
| J. Acous. Soc. | 1026 |
| Am. J. Phys. | 644 |
| | 7180 |
| For the Institute: | |
| Rev. Sci. Inst. | 1572 |
| J. Chem. Phys. | 1780 |
| J. App. Phys. | 1752 |
| Phys. Tdy. | 536 |
| | 5640 |
| Total for journals | 12,820 |

### Financial

Below are the Institute's Balance Sheet, as of December 31, 1950, and Summary Statement of Income and Expense for the year 1950. The Balance Sheet is not different from that of last year in significant respects except that more subscriptions and dues money for 1951 was in hand, and working "surplus" was up $19,442.81 as a result of 1950 operations. In this connection, it is pleasant to report that an appropriation out of surplus which had been allowed to make up the backlog in the case of two of the Institute's journals did not have to be used.

### 1950 Operations

The Income Statement shows increased amounts due to rises in subscription prices, page charge rates, and space rates for advertising, but back number sales were down. Support from Member Societies was still at 15% of their dues collections. In 1951 this has been reduced to 13%. Expenses for publications were higher because of the greater volume. Editorial and subscription handling costs in the AIP office were respectively less per page, or per subscription, than in 1949.

The Statement shows adjustments with the Societies for all publishing or other work done at their direction, all

collections and disbursements on their order, and balancing payments. The detail for each Society may be found in the report of its Treasurer.

The "AIP" column shows all transactions affecting the Institute's own finances. While the "black-figure" result is gratifying, such a favorable outcome was unexpected and is not to be anticipated in 1951.

### John T. Tate

In the death, on May 27, 1950, of John T. Tate, Board Member, Adviser on Publications and former Chairman, the Institute lost the original author of much that the Institute is, and the original guide of much that the Institute has done. What physicists owe him in this connection alone can be realized only by those who worked closely with him as his creative contributions to the Institute during this constructive period were evolved.

### Mrs. Tate

This is a fitting time to put on record also the contribution of Dr. Tate's wife, the former Madeline M. Mitchell, now residing in Minneapolis. As Publications Manager of the Institute from 1932 to 1945, she rendered an outstanding contribution to the Institute and its work. It was she who first suggested the purchase of the Institute's house, rightly convinced her associates of its financial feasibility and then supervised the actual establishment in the new quarters.

The Institute, as a concept, as an operating organism and as a building on 55th Street, is in no small part an achievement of Dr. and Mrs. Tate.

Respectfully submitted,

Henry A. Barton
Director

## *AMERICAN INSTITUTE OF PHYSICS*

*Summary Statement of Income and Expense Including Activities Carried on for Account of Member Societies*

*Year Ended December 31, 1950*

| | *Total* | *American Institute of Physics* | *For Account of Member Societies* |
|---|---|---|---|
| *Income:* | | | |
| Subscriptions to journals | $265,563.60 | $143,327.55 | $122,236.05 |
| Publication charges | 45,064.04 | 18,464.40 | 26,599.64 |
| Sales of reprints | 35,254.00 | 14,095.07 | 21,158.93 |
| Sales of back numbers | 39,796.29 | 14,994.30 | 24,801.99 |
| Sales of advertising | 100,608.54 | 95,148.14 | 5,460.40 |
| Proceeds from Contract with ONR for study of abstracting in field of physics (see contra item below) | 6,210.47 | 6,210.47 | —— |
| Proceeds from Contract with ONR for publication of nuclear research articles (contra item of cost included in publishing expenses shown below) | 5,644.00 | 1,655.80 | 3,988.20 |
| Contributions from member societies | 23,222.56 | 23,222.56 | —— |
| Dues from associate members, corporations, etc. | 7,315.75 | 7,315.75 | —— |
| Receipts for account of member societies and others, mostly members' dues | 59,085.18 | 14,297.10 | 44,788.08 |
| Income from investments and other miscellaneous income | 6,255.76 | 6,255.76 | —— |
| *Total Income* | $594,020.19 | $344,986.90 | $249,033.29 |
| Net paid by member societies and credited to their accounts | 10,145.40 | —— | 10,145.40 |
| | $604,165.59 | $344,986.90 | $259,178.69 |
| *Expenses:* | | | |
| Printing and mailing of journals | $278,753.86 | $110,371.70 | $168,382.16 |
| Printing and mailing of reprints and back numbers | 32,210.77 | 13,133.01 | 19,077.76 |
| Printing of advertising pages | 21,649.12 | 20,128.61 | 1,520.51 |
| Engravings and art work | 38,438.34 | 18,893.05 | 19,545.29 |
| Administrative and organizational services | 36,856.51 | 36,856.51 | —— |
| Editorial | 60,569.56 | 44,737.95 | 15,831.61 |
| Business management and subscription handling | 33,914.34 | 17,799.92 | 16,114.42 |
| Reprints and back number expense | 16,071.66 | 6,281.23 | 9,790.43 |
| Advertising Department expense | 12,982.00 | 11,211.44 | 1,770.56 |
| Expenses on contract with ONR for abstracting study | 6,210.47 | 6,210.47 | —— |
| Commissions on advertising sales | 18,806.98 | 17,838.94 | 968.04 |
| Special projects and promotion | 6,084.16 | 6,084.16 | —— |
| All other expenses including disbursements for account of member societies | 22,175.01 | 15,997.10 | 6,177.91 |
| *Total Expenses* | $584,722.78 | $325,544.09 | $259,178.69 |
| Excess of income over expense | $ 19,442.81 | $ 19,442.81 | —— |

## *AMERICAN INSTITUTE OF PHYSICS, INC.*

*Balance Sheet*

*As at December 31, 1950*

*Assets*

| | | | |
|---|---|---|---|
| Current Assets: | | | |
| Cash | | $127,956.21 | |
| Due from member societies: | | | |
| American Physical Society | $ 21,463.86 | | |
| Optical Society of America | 3,553.55 | 25,017.41 | |
| Accounts receivable: | | | |
| Advertising, reprints and publication charges | $ 25,784.62 | | |
| U. S. Navy Department | 1,213.85 | | |
| Miscellaneous | 89.59 | 27,088.06 | |
| Notes receivable | | 709.10 | |
| Securities: | | | |
| U. S. Government | $100,622.66 | | |
| Other | 1.00 | 100,623.66 | $281,394.44 |
| Land and building | | $ 1.00 | |
| Furniture and fixtures | | 1.00 | 2.00 |
| Deferred charges: | | | |
| Journal Expense | | $ 7,017.15 | |
| Insurance Premiums | | 7,835.13 | 14,852.28 |
| | | | $296,248.72 |

*Liabilities and Capital*

| | | | |
|---|---|---|---|
| Current liabilities: | | | |
| Trade accounts payable | | $ 55,392.04 | |
| Advertising commissions payable | | 598.74 | |
| Due to member societies: | | | |
| Society of Rheology | $ 1,024.09 | | |
| Acoustical Society of America | 3,973.93 | | |
| American Association of Physics Teachers | 7,379.42 | 12,377.44 | |
| Miscellaneous credits | | 2,784.92 | $ 71,153.14 |
| Reserve for building repairs and improvements | | | 7,367.65 |
| Reserve for furniture and fixtures | | | 1,024.85 |
| Deferred credits: | | | |
| Subscriptions for future years | | $118,215.78 | |
| Associate and corporate dues for 1951 | | 1,482.75 | 119,698.53 |
| Surplus | | | 97,004.55 |
| | | | $296,248.72 |