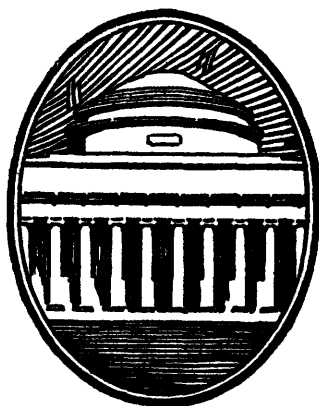


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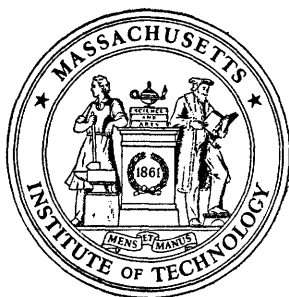
MASSACHUSETTS INSTITUTE
OF TECHNOLOGY
BULLETIN

President's Report Issue

1941-1942

*Covering Period from Meeting of Corporation October, 1941
to Meeting of Corporation October, 1942*

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REPORT OF THE PRESIDENT

TO MEMBERS OF THE CORPORATION:

DURING the past year all of our effort, our planning, and our policies at the Massachusetts Institute of Technology have been shaped and directed by the needs of our country at war. To each adjustment and modification in our program which has been considered and made we have applied the test, "Will it assist our institution in making its maximum contribution now to the winning of the war?" We have sought to apply this criterion — and I speak for students and staff alike — without regard to self-interest, expediency, or stress in the belief that the Institute community would be doing less than its share if it fell short of the maximum responsibility and effort of which it is capable. This attitude is vital, since the supreme and swift mobilization of all national resources required by the war permits no partial measures and no temporizing. It is especially vital since we are a technological institution in a war where technological superiority spells the difference between defeat and victory.

The extent to which this objective and this necessity are being met must be evaluated from the record; in this annual report I summarize the record of the Institute as it stands in October, 1942, the eleventh month of the war.

As you will see, the rôle of the Institute is very significant indeed, as measured by any yardstick. In terms of budget our special war operations are running over three times the rate of the Institute's normal peace-time budget and continue to increase. The teaching and research staff has been more than doubled. During the past year, the total enrollment of students has increased about fifty per cent above normal because of the establishment of special war training courses, and during

the coming year these special students will equal our normal enrollment.

To accommodate these activities, we have not only crowded our regular laboratories and class rooms to the limit, but have built since the beginning of the emergency one small and two large permanent buildings and one very large and two small temporary buildings, have added temporary stories on top of the George Eastman Research Laboratories, have purchased two nearby industrial buildings, have rented large space adjacent to the Boston Harbor, a Cambridge industrial building, part of a shore estate in Rhode Island, a commercial hangar at the East Boston Airport, and have received from the Commonwealth of Massachusetts the loan of its fine hangar facilities at the same airport — thus adding all told some 435,000 square feet or ten acres of floor space to our plant for the duration, in addition to devoting some 73,000 square feet of regular plant to war activities. All of this has been done without publicity and without confusion — but not without strenuous effort, since the war program is superimposed upon an educational program operating to date at normal level and with reduced teaching personnel.

WAR ACTIVITIES

With this overall picture in mind, let me turn now to specific details of our war operations in terms of man-power contributions, educational activities, and research.

Man-Power Contributions. The regular Faculty and staff have accepted the duty of leading the Institute to war. At present fifty-five have been given leave to accept war assignments and of those remaining at the Institute, one hundred and sixty are engaged full or part-time directly on war work. Dean Moreland of the School of Engineering is serving virtually full time in Washington as Executive Officer of the National Defense Research Committee. The Dean of Science, Dr.

Harrison, is chairman of an important section of N.D.R.C. Dean Caldwell of the Division of Humanities continues as an adviser on Latin America to the State Department and to the Coördinator of Inter-American Affairs. Deputy Dean of Engineering Williams is a member of the War Metallurgy Committee and Metallurgical Adviser to the Quartermaster General. Professor Hunsaker, Head of the Departments of Mechanical and Aeronautical Engineering, is Chairman of the National Advisory Committee on Aeronautics. Professor Whitman, Head of the Department of Chemical Engineering, administers a large portion of the chemical affairs of the War Production Board. Professor Keyes, Head of the Department of Chemistry, is devoting full time and Professor Slater, Head of the Department of Physics, is giving two-thirds time to vital war research projects.

Our Treasurer, Mr. Ford, along with three other college financial officers, is serving the Office of Scientific Research and Development as an adviser on contractual arrangements with colleges.

Among the teaching members of the Faculty, full or partial relief from Institute duties has been given to Professor Hardy (Section Chairman, N.D.R.C.), Professor Trump (Secretary, Microwave Committee, N.D.R.C.), Professor Bennett, now Commander (in charge of a research laboratory of the Bureau of Ordnance, U.S.N.), Professor Bowles (Expert Consultant to the Secretary of War), Professor Caldwell (Section Committeeman, N.D.R.C.), Professor Boyce (Technical Aide, N.D.R.C.), Professor Warren K. Lewis (Vice-Chairman, Division B, N.D.R.C.), Professor Sherwood (Technical Aide and Section Committeeman, N.D.R.C.), Professor Bissell (Economic Consultant to the War Shipping Board), Professor Samuelson (Consultant to the National Resources Planning Board), Professor Waterhouse (Consultant to the Lease-Lend Administration). Your President is a member of the National Defense Research

Committee and Chairman of its Division D. This past summer he served also as a member of the Rubber Survey Committee appointed by President Roosevelt.

An especially interesting and difficult assignment has fallen to six members of our Industrial Relations Section of the Department of Economics and Social Science. These six, with Professor Douglass Brown in charge, have been engaged as a group by the United States Army to make a study of labor conditions in the maritime and longshoreman industries. Their assignment covers the Gulf and the Pacific Coasts, as well as the eastern seaboard.

By the end of this year, the Institute will have contributed staff time to the war effort which, measured in terms of salaries, totals \$400,000.

I hesitate to single out the above names out of the total of over two hundred, but I cite them as typical and to show the extraordinary variety of our man-power contribution. I think it is fair to say that our organization is working effectively and with a fine spirit, and with a division of labor which permits some to take the more spectacular posts, while others fill those which are less exciting but equally essential in making up an entire coördinate war effort.

Special War Training. The intensive training of technical experts has been administered most effectively on a national scale under a division of the United States Office of Education, now called the Engineering, Science, and Management War Training Program. The Institute has coöperated with other colleges in Metropolitan Boston in providing a well-balanced and well-divided program to meet the most urgent requirements on the part of both industry and the government for technically trained men and women.

During the year ending October 1, 52 courses extending over periods varying from four to 16 weeks have been given by the Institute to 2,061 students, distributed as follows:

*War Training Courses Offered October, 1941
Through September, 1942*

	<i>No. of Courses</i>	<i>No. of Students Completing Courses</i>
Courses open to Civilians.....	19	409
Courses at Watertown Arsenal.....	7	389
Courses at Bethlehem Steel Co.....	2	48
Courses at United Shoe Machinery Co.....	2	28
Courses at Boston Navy Yard.....	1	16
Courses for Army and Navy Personnel.....	13	831
Courses for Radiation Laboratory Staff.....	4	121
Courses for Civil Service Employees.....	2	118
Courses for M. I. T. Students.....	1	61
Other.....	1	40
TOTAL.....	52	2,061

Of this program the largest course (actually it is a small institution in itself) provides training to about 2,200 Army and Navy officers a year in Ultrahigh Frequency Radio Techniques. These officers come in groups of about two hundred a month, each group staying for three months. In the same field we have given two courses designed to equip instructors in physics and electrical engineering from other colleges and universities to offer special instruction to college students in Ultrahigh Frequency Techniques. Over sixty institutions have sent instructors here to take this work under the direction of Professor W. L. Barrow. Two conferences have likewise been held, with the collaboration of the Army and Navy, to permit these instructors jointly to prepare a standard syllabus for the courses offered by the colleges. To facilitate the purchase of special equipment needed in these courses, the Institute, at the request of the Office of Education, has acted as a central purchasing agency for all.

I can not speak in too high praise and appreciation of the very able manner in which this special training program has been conducted under a committee headed by Professor R. D. Douglass. Over 60 regular members of our staff have given

the courses, largely as an overload, together with 81 other instructors drawn from elsewhere, including the Army and Navy. During the current year, training will be given to about 3,000, a total equal to the regular enrollment of the Institute.

In addition to these government-sponsored courses, we are continuing to offer other programs for military personnel as a part of our regular curriculum. A nine months' course in meteorology for 130 Army, Navy, and Weather Bureau representatives will be completed on December 1, and will be repeated again beginning in January with an expected enrollment of 350. We also continue to train post-graduate Naval officers in Torpedo Engineering, Fire Control, Naval Construction and Marine Engineering, Naval Engineering, and Aeronautical Engineering. To supervise the officers detailed here and to act as liaison officer between the Navy Department and the Institute, the Navy has assigned here Captain C. S. Joyce as Senior Naval Officer, and I wish to pay tribute to his wise administration of Navy activities.

War Research. Our major contribution to the war effort continues to lie in the field of research. When I reported to you a year ago, our number of research contracts with government and with industry totalled 55. Despite our rigid policy of refusing to undertake additional projects unless they are of first priority and unless no other arrangement for their prosecution appears feasible and comparably favorable, the number has now increased to 99, of which a third are for the Office of Scientific Research and Development. At this time last year the personnel engaged in this work numbered 466. This figure now stands at 1800, of which nearly half are scientific personnel and half accessory personnel such as clerical staff, guards, and mechanics. Of this scientific personnel in war research about ten per cent are part-time workers from our own staff, a majority of whom contributed their time. Of the full-time staff numbering about 800, about three per cent have

been drawn from the Institute staff. The remainder have come on leaves of absence from 73 educational institutions and 43 industrial organizations.

A program of this magnitude and widely representative staff is clearly a national undertaking, a group effort on the part of American colleges and universities with the Institute acting as host and providing management and services. This is notably true of the largest of the projects which is almost wholly administered and staffed by able scientists lent by other institutions in response to requests from the Office of Scientific Research and Development.

Although our principal research project for the O.S.R.D. is a coöperative group undertaking, the Institute has carried the contractual responsibility of managing and financing the work with all attendant risks and strenuous adjustments. This has given us much concern because of the size of the project in relation to the Institute's financial resources, but I can report to you now that with the assistance of able legal counsel and rigorous auditing we have negotiated revised contracts which provide maximum protection against all foreseeable contingencies, which require a minimum use of Institute funds, and which are designed to leave us without profit or loss on the operations.

Our major contract now enables us to request funds monthly in advance of expenditures, thus reducing the amount of working capital provided by the Institute. It covers us, within the limits of the contract total, against costs incident to the termination of the contract, provides for the restoration of our buildings to their normal use at the end of the work, specifies that the Institute shall be indemnified against outstanding commitments upon cancellation, and relieves us of all but a reasonable responsibility for loss of or damage to government property. All future liabilities of course can not be anticipated

and covered, especially those which will arise when the program is liquidated or cancelled.

Arrangements for reimbursement by the government have been governed by the principle that the Institute should in the long run neither gain nor lose financially. The contracts all provide for payment by the government of all direct costs. All indirect costs are covered by an overhead allowance which is a percentage of the salary and wages involved. On our major contract, as the project has grown, this allowance has been reduced in accordance with the no-profit, no-loss principle and controlled by periodic examinations of our accounts by financial officers of O.S.R.D. Over and above our estimated indirect costs, a modest surplus for the past fiscal year has been set aside as a reserve against contingencies and we have formally notified the government that any balance left in this reserve after the conclusion of the work will be returned to the government. That our overhead arrangements are fair both to the government and to the Institute received confirmation recently when a skilled financial officer representing the O.S.R.D. made an independent analysis of our overhead costs and arrived at a total within a few thousand dollars of the amount actually charged by us in our books.

When the government began to contract with educational institutions for research there was no experience to guide the formulation of agreements, and arrangements had to be made quickly to get the work under way without delay. The problem was different from that involved in dealing with business concerns; there was no question of arriving at a fair profit on a manufacturing operation, for by general agreement no profit is contemplated but only an arrangement which enables the institution to undertake the work, mainly in the form of service, without encroaching upon its income from tuition and endowment and without impairing its trust funds. In our relations with government agencies we have found a sympa-

thetic understanding of this situation and a willingness to evolve new contractual arrangements which recognize that educational institutions have a special problem and that in being asked to perform a public service without financial gain to themselves, they should not be expected to violate their fiduciary responsibility or to suffer permanent injury through liabilities imposed by the government. Our program at the Institute has grown to such magnitude that a miscalculation or inadequate contractual arrangement could permanently injure the institution. We have made steady progress in reducing this danger to a minimum, while at the same time proceeding with an all-out effort to obtain research results important to the prosecution of the war.

Many developments of importance have come from the research work carried on in our laboratories. I can not discuss these in detail, but I can say that equipment designed here has already been used in successful operations against the enemy, and is being procured in very large quantities by the armed services.

CHANGES AND TRENDS IN OUR NORMAL OPERATIONS

Educational Program. In contrast to the last war, it has been a recognized national policy so far in this war to maintain, expedite, and increase the education of young men and women in the sciences, engineering, and medicine. If we knew certainly that the crisis of the war would be passed in twelve or eighteen months, sound policy would dictate calling out from our educational institutions every available man to throw into a mighty effort. We have no assurance, however, that victory will come that quickly and consequently it would be a very short-sighted policy to cut off too soon the training programs which can most efficiently provide technical talent, of which there is an enormous shortage, to our industries and armed forces.

The Institute has been governed by this point of view in adjusting its educational program to war conditions. Our first move was to speed up the program of the Class of 1942, with some curtailment of non-professional subjects, to permit graduation on April 27, over a month in advance of the normal date. Last January the Faculty voted and the Corporation approved further changes for the war period which included:

(a) Starting the first term for fourth-year students in June immediately following the close of the second term of their third year, with graduation in February;

(b) Requesting undergraduate students to obtain employment contributory to the war effort during the summer periods when they were not engaged in academic work, and requiring them to submit to their registration officers on registration day of the fall term a report describing the duration and type of summer work engaged in by them;

(c) Making a special effort to accommodate freshmen beyond the normal limitation of about 600 to the extent that there are increased numbers of applicants with superior qualifications, and within the limitations consistent with good performance as imposed by available staff and laboratory space;

(d) Continuing with increased emphasis the practice of permitting qualified students to anticipate subjects, or to take advanced standing examinations in subjects in which they have not been enrolled, thus expediting their completion of graduation requirements.

Our experience thus far with this program has been satisfactory. Only a few of the Class of 1943 failed to attend the senior summer term, and the records of the class were good, indicating that this limited acceleration has not perceptibly injured performance and development, as a more extended speed-up plan might have done in the intensive kind of professional education offered by the Institute. We had gratifying success in placing students in war industries during their sum-

mer vacations; all members of the sophomore class and a high percentage of the freshman class obtained employment or attended summer school. As reported on page 24 we received a record number of applications for admission to the first year, and we have admitted for the current academic year over 700 freshmen, or about 100 more than usual.

Along with this four-point modification in our educational program we have found other adjustments necessary. The Sloan Fellowships in Business and Engineering Administration have been discontinued, although we hope that so successful a plan for training business executives may be resumed when the conclusion of the war permits industry to give leaves for this valuable type of graduate study. In Electrical Engineering, because of shortages in staff, we have temporarily discontinued the Honors Plan for exceptional students. We have further found it necessary, as our staff has been reduced, to omit numerous special subjects, primarily on the graduate level. While our Graduate School continues with a somewhat reduced enrollment, we may expect a further diminishing number of advanced students, especially since they are so much in demand for war service and since current draft regulations exclude their deferment unless they have staff appointments as teaching assistants or as research assistants assigned to government-sponsored research.

Students Under War Conditions. Under the provisions of the Selective Training and Service Act, the Institute has continued to assist members of the Junior and Senior classes in requesting deferment if they are preparing for work in essential occupations, if they are in high standing at the Institute, and if they show promise of making a significant contribution to the national welfare. Thus far the Selective Service program has been administered from Washington and by the local boards in a manner which has given recognition to the importance of advanced technological training. Selective Service Head-

quarters have continually emphasized the need for technically trained personnel, and all of the scientific and engineering aspects of the Institute's curriculum have been included in the category for which provisions have been made to permit qualified regularly enrolled students to continue their programs.

The Institute has further sought to aid its students in preparing for service by participating in the Enlisted Reserve Corps plan of the Army, which provides for insuring a future source of qualified officer candidates for the Navy and Marine Corps, as well as the Army. Both the Selective Service program and the reserve plans of the Army and Navy have posed many problems for students and we have tried to help them in reaching personal decisions by announcing to them through convocations and frequent bulletins the latest and most complete information available. We have also appointed special advisory officers to assist students and staff on problems relating to military service.

Our students clearly realize that the program of the Institute must be continually adjusted in accordance with rules formulated by the Federal authorities, and that the basic principle underlying the rules affecting students is that no student in this emergency has an inherent right to continue in college. On the contrary he, and everyone else, has a duty to perform for his country and his opportunity for continuing a college career is dependent upon evidence that the effectiveness of his service to the country will be increased by college study.

Although our actual experience to date with the draft boards and the armed services has been encouragingly satisfactory, we and all other educational institutions have reason to be concerned over the outlook for the future. In the last three months national policy on man power has become less coherent, and college students particularly have been left without any clear directive as to what their course should be. In September the Secretary of War announced that all

students in the Enlisted Reserve should expect to be called at the end of the term during which they reached draft age, thus reversing the implied policy of the reserve plan when it was announced last May. Within a few weeks the Secretary of War in another communication said, "My statement . . . has been interpreted in some quarters to mean the end of all higher education for the duration of the war. This is a misapprehension that should be corrected. The Army is greatly in need of men of specialized training in physics, chemistry, engineering and medicine. . . . It is hoped that colleges will maintain their training of students in engineering, medicine and other sciences."

Except to say that new plans were being developed for the training of those inducted into the Army, the statement gave no indication of how students in science and engineering, particularly Freshmen and Sophomores who cannot be deferred under draft regulations, may secure advanced scientific training after reaching draft age, whether it be twenty or ultimately eighteen. In late August a report of the Manpower Commission stated that all able-bodied students are destined for the armed forces and that students should recognize that the exigencies of war do not permit any assurance that they may remain in college for any specified time. Meanwhile a limited number of students in the Navy's V-1 and V-7 programs can remain in college until the completion of their college program, unless called earlier to active duty.

The lack of definite planning evident in this brief chronology of recent moves (other confusing expressions of policy could be cited) have left the science and engineering student in an equivocal position which is unfair to his demonstrated desire to serve his country in the most effective capacity. The colleges, moreover, are left without any discoverable educational directive as to their responsibility or national duty.

Our war effort is certain to suffer if the man-power policies

of the government are not quickly coördinated and clarified. With respect to technical students, there are several alternatives:

(1) Induct them all into the military services immediately upon their reaching the age for military service. This would mean cutting off the new supply of technically trained men in the face of an increasingly critical shortage of them both in the armed services and in industry. I believe that high strategy could wisely dictate so violent a course only if it were practically certain that the war could thus be won before these men would otherwise have become trained and available for technical service. But it would involve a huge risk if the war should last several years, and thus strain our technological resources to the utmost.

(2) Induct all able-bodied students into the armed services, and assign qualified ones back to colleges for scientific training with expenses paid. This would mean that any young man, regardless of his financial resources, would have an opportunity, if he were qualified, to be given advanced training in accordance with the needs of the country. In the light of present shortages this would seem clearly preferable to (1).

(3) Establish a civilian reserve into which young men qualified for scientific training could be inducted for the purpose of training them for work in essential industries or in the military services. Upon completion of their training they could be assigned either to industry or military service in accordance with their capacities and the needs of the situation.

(4) Continue the present reserve plans and draft policies but coördinate them, intelligently and courageously provide for deferment only in those fields of training where critical manpower shortages exist, clearly establish the student's responsibility and duty and the importance of his service as a student, and indicate the type and duration of the program which the colleges should provide for him.

The acute necessity is to adopt *some* consistent plan so that

the institutions and students may drive vigorously toward its objective. My own experience with the scientific program of the government and the technical problems of the services and of industry convinces me that cutting off the continued supply of technically competent men would be a national calamity, in that we would soon experience disastrous shortages of adequately trained personnel for the production and operation of the necessary huge arsenal of new weapons.

Our students have accepted the uncertainties in their status in fine spirit, just as they have accepted other restrictions in their activities. Last winter the Army commandeered the Briggs Field House and most of the adjacent playing space; for a good portion of the academic year it occupied the gymnasium in Walker Memorial; and in the spring we removed the hangar gymnasium to make room for an urgently needed temporary building for war research. Despite these serious reductions in athletic facilities, the students have maintained a reasonably rounded athletic program directed primarily at physical fitness.

We have also found it necessary to "double up" in a portion of our dormitories, and this may have to be further extended to make room for military personnel detailed to the Institute for special training programs.

LONG-TERM EDUCATIONAL POLICY

While the profound modifications dictated by the war have absorbed the major attention and energy of the Institute's governing bodies, they have continued to give consideration to long-term educational policy and to explore new ways of increasing the effectiveness of our over-all program.

During the year the Visiting Committee of the Department of Biology and Public Health reviewed the status of public health instruction at the Institute in the light of a careful study, undertaken by the Administration, of trends in public health

instruction and professional requirements in this country. As a result of this review, the Committee concluded that in the future the Institute's most effective contribution to public health can be made in the fields of biological engineering and food technology and that the training of public health officers and professional workers can best be carried on in an educational environment which encompasses a school of medicine and other allied services.

This conclusion recognizes the increasing importance of medicine in the public health field, the spreading requirement that public health officers hold medical degrees, and the inordinate expenditure of funds which would be required if the Institute were to expand its public health program to meet these new conditions.

Since the Institute does provide an ideal environment for food technology, and for the fields of quantitative biology, biophysics, biochemistry, and biotechnology which are included in biological engineering, the committee recommended that available funds be devoted to increased vigorous development of these activities.

The Committee specifically recommended, and the Corporation approved, that the awarding of degrees in public health and of certificates in public health (but not including degrees in public health engineering) be discontinued after June 30, 1944, and that undergraduate and graduate students be admitted in the professional fields of public health, public health administration, or public health education only as they may reasonably be expected to qualify for a degree or certificate before June 30, 1944. Students at present enrolled in these fields will thus be enabled to complete their programs.

In accordance with the action taken by the Corporation, the Department of Biology and Biological Engineering is now concentrating on biological engineering, food technology, and allied fields, and until their discontinuance on June 30, 1944,

the programs in public health will be administered separately, along with the continuing course in public health engineering.

A similar review is now being made of our courses in Public Health Engineering and in Sanitary Engineering, looking toward a consolidation of our work in these fields.

In the Division of Humanities, which includes the social sciences, there have been significant developments. As the result of the recommendations of the Visiting Committee on English and History, the work in the history of science has been strengthened with the addition to the staff of a specialist in this field. Similarly, for the current year, two new members of the staff have been chosen to develop teaching and research in the field of industrial history, for which an institution of this type furnishes special opportunity.

On the teaching side, as the result of student initiative, special training will be furnished in the field of debating and public speech; and on the recommendation of the Visiting Committee, a new option on American civilization, open to Sophomores, will emphasize the development of the ideals which underlie our history.

In Economics, a new graduate program leading to the doctor's degree in Industrial Economics has been inaugurated. The initial group of graduate students was carefully selected from a surprisingly large number of applicants. Among them we hope to find able leaders for economic planning and coördination, especially after the war.

Closely allied with this new graduate program, is a plan for coöperative research financed in part by the Rockefeller Foundation, which will deal with various phases of post-war economic planning.

The Division of Industrial Relations in the Department of Economics has now completed five years of activity since its organization in 1937. A staff of specialists in various aspects of labor relations has been built up which has added vitality

to our teaching. This group has already published some significant studies, and has others in preparation, and its services have been made available, as I mentioned on page 8, for authoritative studies of practical situations which have arisen especially as a result first of the depression and more recently of the war. The graduate and research program in Economics, and the special studies in industrial relations have been made possible by generous contributions from leaders in industry and business.

STATISTICS OF THE YEAR

Finances. Having already discussed the finances of our *war program*, I now wish to summarize our *regular operations* on a basis that affords comparisons with normal years. The fiscal year 1941-1942 ended with an operating deficit of \$41,280. This was due largely to increased Plant Operation and Administrative expense and a reduction in the rate of yield on investments. Educational expenses were almost identical with those of the preceding year. The net result of all operations, including adjustments on the previous year, was to decrease the current surplus by \$9,253.68, leaving an all-time surplus of \$18,216.42.

Of the Institute's total budgeted regular expenditure of \$3,709,466, 61 per cent was Academic Expense (*i.e.*, teaching and research), 35 per cent Plant and Administration, and four per cent Miscellaneous Expense. Forty-two per cent of operating income was derived from students, 29 per cent from investments, eight per cent from loans and scholarships, and 21 per cent from other sources, compared with 45, 34, 10, and 11 per cent respectively for the preceding year.

The yield on all investments, based on market values as of June 30, was 4.22 per cent, compared with 4.36 per cent one year ago and 4.32 per cent two years ago. Investment income distributed to the pooled funds was at the rate of 3.93 per cent, compared with 4.10 per cent in 1941 and 4.38 per cent in 1940. The market value of the Institute's investments as of June 30

was 91 per cent of book value. In 1941 it was 98 per cent, and in 1940, 95 per cent. The June 30 investment portfolio showed 34.4 per cent in bonds, 3 per cent in preferred stocks, 39.8 per cent in common stocks, 11.8 per cent in mortgages and real estate, and 11.0 per cent in cash. Comparable percentages for the preceding year were 37.5, 4.6, 43.5, 9.7 and 4.7 respectively.

Along with all educational institutions, the Institute will be faced with acute financial problems as the war continues. A substantial reduction in regular enrollment is to be expected and in our budget planning for 1942-1943 we are taking this into consideration. We also may expect extraordinary additional expense, particularly if we find it necessary further to accelerate our teaching program. The Senior Summer Term this past summer added \$40,000 to our academic expense, since in accordance with long-standing policy we paid additional salaries to the staff for the extra teaching required.

The table below shows the status and trend of operating income and gifts:

FINANCIAL TRENDS

	<i>Operating Income Budget</i>	<i>Total Gifts</i>
1930-31	\$2,880,131	\$1,339,280
1931-32	3,029,881	1,781,473
1932-33	2,779,815	306,295
1933-34	2,646,648	208,635
1934-35	2,694,799	580,695
1935-36	2,714,301	429,533
1936-37	2,977,573	812,421
1937-38	3,008,530	2,347,693
1938-39	3,203,300	1,362,392
1939-40	3,334,271	790,559
1940-41	3,361,052	888,180
1941-42	3,668,186	926,897

Of the total gifts of \$926,897, \$534,000 represented capital additions. Among the large gifts may be mentioned a bequest

from the Louise B. Hills Estate of \$366,181 for the John Marshall Hills Fund for general Institute purposes, an additional \$30,000 from the Charles Hayden Foundation, \$18,000 from the John and Mary R. Markle Foundation, \$15,200 from Research Corporation, \$110,728 from the Rockefeller Foundation, and \$25,000 from the Alfred P. Sloan Foundation.

The Alumni Fund ended its second year rather successfully, having received \$78,015 from 7,964 alumni, as compared with \$63,526 from 7,865 alumni last year, which was the largest number of alumni ever to contribute to the support of an Institute project up to that time.

Enrollment. The large Freshman Class this year was selected from 2,080 applicants, the largest number ever to apply for entrance to the first year. The admission of a larger entering class was possible without lowering our entrance standards; if anything, our selection this year was more rigorous than previously.

ENROLLMENT AT M. I. T.*
(As of November 1)

	<i>Total Undergraduate</i>	<i>Freshmen</i>	<i>Total Graduate</i>	<i>Total Enrollment</i>
1930-31	2,670	734	539	3,209
1931-32	2,610	628	578	3,188
1932-33	2,308	562	523	2,831
1933-34	2,106	485	500	2,606
1934-35	2,009	542	498	2,507
1935-36	2,018	561	522	2,540
1936-37	2,174	650	619	2,793
1937-38	2,305	605	661	2,966
1938-39	2,401	656	692	3,093
1939-40	2,379	605	721	3,100
1940-41	2,379	605	759	3,138
1941-42	2,376	640	679	3,055
1942-43†	2,451	731	569	3,020

* Excluding short war training courses.

† As of third day of term.

In his annual report, the Director of Admissions calls attention to the wide distribution of secondary schools sending students to the Institute. Over the five-year period, 1937-1941, a total of 826 schools sent one or more students to the Institute, and in the group entering September, 1941, the representation included 10 military schools, 39 other boarding schools, 25 country day schools, 15 other day schools, and 222 public high schools, a total of 311. This wide diversity of school and regional origins emphasizes the national character of our student body and its wide selection.

Of interest, too, in this year's registration is the large number of students admitted (40) with advanced standing from the 11 liberal arts colleges included in the coöperative arrangement with the Institute. Of these 40, 23 (compared with 11 in 1941) entered under the exact terms of the three-year, two-year plan.

Student Aid. The distribution of aid to students during 1941-42 as compared with the preceding year is given in the table below:

SUMMARY OF STUDENT AID

	1940-41		1941-42	
	Number	Amount	Number	Amount
Undergraduate Scholarships	506	\$85,965	507	\$81,888
Graduate Scholarships and Fellowships.....	315	112,036	317	116,415
Loans.....	338	141,796	258	109,078
Student Employment Service	486	59,592	462	57,677
TOTAL STUDENT AID.....		\$399,389		\$365,058

The marked decline in the number of applicants for loans, as well as in the amount borrowed, was accompanied by a marked rise in the volume of repayments. Thus, for the first year since the establishment of the Technology Loan Fund, repayment on principal account exceeded the total of loans

made, the excess being \$28,411. Up to now 2,406 men have benefited from the foresight and generous contributions of those who made this Fund possible in 1930, and 1,035 of the 2,406 have completely discharged their financial obligations to the Fund. Over \$1,735,000 has been borrowed and over \$850,000 has now been repaid, which latter figure represents 93 per cent of the face value of notes matured. The loan fund is on a better than revolving basis.

Personnel. During the year the Corporation suffered the loss of Alfred H. Schoellkopf '15, who died on September 9. Mr. Schoellkopf was elected an Alumni Term Member of the Corporation in 1940, and served on Visiting Committees on the Departments of Electrical Engineering, of Mathematics, and of the Library.

The three Alumni Term Members whose five-year terms expired in June were William E. R. Covell, Albert F. Sulzer and George E. Whitwell. The Special Term Membership of Edmund C. Mayo expired in January.

New members elected to the Corporation during the year include one Special Term Member, Willard H. Dow; three Alumni Term Members, Richard L. Bowditch, Duncan R. Linsley, and B. Edwin Hutchinson; and the new President of the Alumni Association, Francis A. Barrett.

Retirements from the Faculty included Samuel C. Prescott, Dean of Science, Head of the Department of Biology and Public Health and a member of the staff for forty-seven years; Hervey W. Shimer, Professor of Paleontology and a member of the staff for thirty-nine years; M. deK. Thompson, Professor of Electro-Chemistry and a member of the staff for forty-four years; Tenney L. Davis, Professor of Organic Chemistry and member of the staff for twenty-three years, and Joseph C. Riley, Professor of Mechanical Engineering and member of the staff for forty-four years. Each of these was given the title of Emeritus Professor, and Dr. Prescott continues his long and

distinguished service to the Institute as an Honorary Lecturer in Biology for 1942-43.

George Russell Harrison, Professor of Physics and Director of the Research Laboratory of Experimental Physics, has been appointed Dean of Science. Dean Harrison joined the staff of the Institute's Department of Physics in 1930 and is widely known for his accomplishments in spectroscopic research and the study of atomic structure. Dr. Robert S. Williams, Head of the Department of Metallurgy, has been appointed Deputy Dean of Engineering while Dean Edward L. Moreland is on part-time leave as Executive Officer of the National Defense Research Committee.

Clair E. Turner, Professor of Public Health, has been appointed Head of the new Department of Public Health; Leicester F. Hamilton, Professor of Analytical Chemistry, Acting Head of the Department of Chemistry; Warren K. Lewis, Professor of Chemical Engineering, Executive Officer of the Department of Chemical Engineering; and Henry G. Houghton, Associate Professor of Meteorology, Executive Officer of the Department of Meteorology.

New additions to the staff include Claude R. Fountain and Norton A. Kent, Visiting Professors of Physics; Richard M. Bissell, Jr., Associate Professor of Economics; Major Perley D. Baker, Assistant Professor of Military Science and Tactics; David O. Coelho deSouza, Assistant Professor of Naval Construction; August L. Hesselschwerdt, Jr., Assistant Professor of Mechanical Engineering, and Warren C. Scoville, Assistant Professor of History. In addition to these academic appointments, Dr. John M. Murray has been appointed Psychiatrist on the staff of the Medical Department, and Dr. John J. Gibbons, Director of the Dental Clinic.

Promotions were as follows: to the grade of Professor: Charles W. MacGregor, W. Rupert Maclaurin, Hans Mueller, John T. Norton, Wayne B. Nottingham and Edward S. Taylor.

To Associate Professor: Archibald W. Adkins, Morris Cohen, Prescott D. Crout, Carl F. Floe, Truman S. Gray, William C. Greene, Henry G. Houghton, Jr., M. Stanley Livingston, Douglas M. McGregor, Ronald H. Robnett, Alvin Sloane, and Irwin W. Sizer. To Assistant Professor: Lawrence B. Arguimbau, Lynwood Bryant, William W. Buechner, George deSantillana, Seibert Q. Duntley, Clark Goodman, Herbert F. Goodwin, Christian Grosser, Delbar P. Keily, John H. Lutz, Eric Reissner, Brandon G. Rightmire, Daniel Rosenthal, John C. Sluder, Charles F. Squire, Clark C. Stephenson, Charles A. Stokes, Alberto F. Thompson, Jr., J. Edward Vivian, Scott W. Walker, Walter L. Whitehead, Glenn C. Williams, and J. Albert Wood, Jr.

Leaves of Absence were granted to the following in order that they might accept assignments in war work: Walter G. Whitman, Head of Department of Chemical Engineering; Professors James A. Beattie, Ralph D. Bennett, Edward L. Bowles, Karl D. Fernstrom, Louis B. Slichter, Julius A. Stratton, and George B. Waterhouse; Associate Professors William P. Allis, Richard M. Bissell, Jr., Francis Bitter, Joseph C. Boyce, Samuel C. Collins, J. Warren Horton, Clark S. Robinson, Thomas K. Sherwood, and John G. Trump; Assistant Professors Walter E. Albertson, Alfred H. Clifford, Cecil G. Dunn, Paul C. Eaton, William M. Hall, Edward S. Lamar, Roland D. Parks, Theodore Smith, John D. Trimmer, and Dr. Chaim L. Pekeris; Dr. John W. Chamberlain and Dr. Harland F. Lancaster, Assistant Medical Directors. Leave was granted to Associate Professor John L. Reid for a third year.

Resignations were accepted from Dr. Sverre Petterssen, Head of the Department of Meteorology; Lt. Col. E. C. Harwood and Lt. Col. T. J. Johnston, Associate Professors in Military Science; and Dwight L. Palmer, Associate Professor in Economics; Joseph A. Bergantz, Assistant Professor in Chemical Engineering; Col. Frank S. Post, Assistant Professor

in Military Science; and Charles E. Reed, Assistant Professor in Chemical Engineering.

Emeritus Professor Carroll W. Doten, a member of the staff in Economics and Statistics from 1903 until his retirement in 1936, died on June 13; Emeritus Professor Ervin Kenison, a member of the Section in Drawing from 1893 to 1933, died on May 12.

Conclusion. I again wish to express my very sincere appreciation of the manner in which the members of the Corporation and its various committees have performed their various assignments, and, beyond these assignments, have been interested, sympathetic, understanding and uniformly helpful in their relationships with the administrative officers of the Institute. I cannot imagine a more effective or satisfying situation than that which is so loyally based on the coöperation between the various groups which, at different levels, compose our institution, — the Corporation, the Alumni, the administrative officers, the teaching and research staff, the students and the employees. There is nothing so important for the future of the institution as the continuation of this fine spirit of effective coöperation.

Respectfully submitted,

KARL T. COMPTON,
President.

REPORTS OF ADMINISTRATIVE OFFICERS

DEAN OF STUDENTS

Upon the declaration of war in early December, various proposals for modification of the academic calendar and curricula were advanced. These received careful and thorough consideration by the Administrative and Faculty Councils and by the Faculty itself with the following results:

(1) At a Convocation held December 19, it was announced that the program for the graduating Class of 1942 would "be speeded up, with some curtailment of non-professional subjects, to permit graduation on April 27."

On January 6 the Faculty voted that for the war period:

(2) The first-term program for fourth-year students begin in June immediately following the close of the second term of their third year, with graduation in January;

(3) Undergraduate students of the Institute be requested to obtain employment contributory to the war effort during the summer periods when not engaged in academic work, and that they be required to submit to their registration officers on Registration Day of the fall term a report describing the duration and type of summer work engaged in by them;

(4) A special effort be made to accommodate freshmen beyond the present limitation of about six hundred to the extent that there are increased numbers of applicants with superior qualifications within the limitations consistent with good performance as imposed by available staff and laboratory space;

(5) The present practice be continued of permitting qualified students to anticipate subjects, or to take advanced standing examinations in subjects in which they have not been enrolled, thus expediting their completion of graduation requirements.

Public announcement of "this program as the one in its judgment best designed to yield maximum educational results in the light of present national needs" was accompanied by a statement that "the Institute realizes that new or different

conditions may arise which will dictate a different program. At present, however, it believes that this program is preferable for such an institution as M. I. T. to the more extreme speed-ups which are being adopted for sound reasons in other types of institutions, particularly liberal arts colleges."

During 1941-42 the Institute continued to "assist students in requesting deferment [under the provisions of the Selective Training and Service Act of 1940] if these students are preparing for work in essential occupations, if they are in high standing at the Institute, and if they show promise of making a significant contribution to the national welfare in civilian capacities." Beginning in May, however, the Selective Service regulations were so amended that deferment of a student could not be considered "until approximately the satisfactory completion of the second academic year of his college work."

At a Convocation held May 23 President Compton again outlined "the special opportunities and obligations confronting students at M. I. T. as a result of the war" and gave a report "on the effect of the war on our educational program." At this time he announced the Institute's participation in the new Enlisted Reserve Corps plan of the Army, which provides for insuring a future source of qualified officer candidates for the Navy and Marine Corps, as well as for the Army. At this Convocation President Compton also announced that Mr. J. J. Rowlands would succeed Mr. H. B. Kane as special adviser in handling requests for deferment, and that Professor J. D. Mitsch had been appointed adviser to students on the various reserve plans of the armed services.

The gross number of applicants seeking admission to the Class of 1945 was 1,844 compared with 1,705 for the Class of 1944. For 1941-42 the year opened with a registration of 640 compared with 605 in 1940-41. Percentage geographical distribution of first-year students in the past five years has been:

	<i>Percentage of First-Year Class</i>				
	<i>1941-42</i>	<i>1940-41</i>	<i>1939-40</i>	<i>1938-39</i>	<i>1937-38</i>
From outside New England.	61.0	61.5	62.0	58.1	60.0
From outside Massachusetts	69.3	67.6	69.3	67.1	66.0

Distribution of student aid to undergraduates during 1941-42 compared with 1940-41 was:

	1941-42		1940-41	
	Number	Award	Number	Award
Freshman Scholarships	194	\$41,030	206	\$45,500
Other Undergraduate Scholarships	313	40,858	300	40,465
Total Scholarships	507	\$81,888	506	\$85,965
Undergraduate Loans	212	\$93,578	267	\$110,328
Total Aid to Undergraduates . .	631*	\$175,466	609*	\$196,293
Percentage of Undergraduate Registration Receiving Aid . .		26.5		25.6

* Allowing for individuals receiving both scholarship and loan.

Of the 194 1941-42 Freshman Scholarships noted above, 37, totaling \$9,850, were Charles Hayden Memorial Scholarships for "Boston and New York boys." These awards were established in 1939 by the Hayden Foundation.

The above tabulation, however, does not include grants totaling \$6,900 to 23 undergraduates of the three upper classes "born in Massachusetts" made possible by the continued generosity of the trustees of the James Melvin Trust, which aided 24 men to the extent of \$7,200 during 1940-41. Nor does it include William Barton Rogers Awards of \$300 made, as in 1940-41, to six members of the Class of 1942 who had in the opinion of the Faculty Committee on Undergraduate Scholarships demonstrated "outstanding qualities," judged on the dual basis of their academic records and extra-curricular accomplishments.

Including both graduate and undergraduate students, the Loan Fund Board received 354 applications during 1941-42 and acted favorably upon 258, or 72.9 per cent, \$109,078 being loaned. For 1940-41 the corresponding figures were 486, 338, 69.6 per cent, and \$141,796.

Repayments to the Fund during 1941-42 were: \$137,489 on principal account and \$18,417 for interest, or a total of

\$155,906. Thus for the first year in the history of the Fund repayments on principal account exceeded the total of loans made, the excess being \$28,411.

The cumulative record of the Fund from its establishment in 1930 up to June 30, 1942, shows:

	<i>June 30, 1942</i>	<i>June 30, 1941</i>
Number of individuals receiving loans.	2,406	2,287
Total amount loaned.	\$1,736,084	\$1,627,006
Average amount loaned per capita.	\$722	\$710
Number of individuals whose indebtedness has been completely discharged.	1,035	860
Repayments received on principal account	\$850,348	\$712,859
Total matured principal.	\$914,419	\$783,476
Percentage of maturities paid.	93.1	91.0
Total matured principal unpaid.	\$64,071	\$70,617
Total interest received.	\$146,330	\$127,913

It is notable that the \$146,330 received for interest up to June 30, 1942, was more than twice the amount of matured principal then unpaid, \$64,071.

The Student Employment Bureau of the T. C. A. placed a total of 462 individuals compared with 486 in 1940-41, and those placed this year earned \$57,677 compared with \$59,592 last year. Of the 462 placed this year, 120 were under the N. Y. A. program of the Federal Government, 317 were in private employment, and 25 were in both classifications. Earnings were \$8,370 under the N. Y. A. and \$49,307 from other sources.

The average scholastic record of 505 men in 19 groups was 3.47 in June, 1942, compared with 3.50 for 474 men in 19 activity groups in June, 1941. Fraternity averages declined slightly, for 739 men averaged 3.24 in June, 1942, compared with 718 men who averaged 3.26 a year ago.

H. E. LOBDELL.

DEAN OF THE GRADUATE SCHOOL

The training of scientists and engineers at the postgraduate level has been maintained at the Institute during the year

1941-42, although many students who had planned on graduate work have transferred during the year to full-time service on projects under government contracts with the Institute and elsewhere. As of November 1, 1941 the total enrollment in the Graduate School was 672 (as compared with 764 in the previous year). Of these, the number not enrolled for an advanced degree continued to show an increase.

On account of the acceleration of the undergraduate program this year, separate graduation exercises were held on the evening of May 28 at Walker Memorial for conferring advanced degrees.

A notable addition to the facilities of the Graduate School is the Research Center of Applied Mathematics, described in the report of that department.

Certain special subjects of instruction have been offered for particular warfare services, and since the subject matter involved is taken from existing subjects of instruction they have not received formal listing in the Catalogue. Other more formal programs have been established as, for instance, the comprehensive program of training in Meteorology, to which 140 Army, Navy, or other government personnel have been detailed.* Registration in these programs is being greatly increased. These special subjects and programs, which have a definite rôle in forwarding the war effort, are not designed to count toward a degree. This type of graduate school service, not pointed to the usual goal of an advanced degree but constituting a particular service toward a definite improvement in the technical status of those enrolled therein, is an innovation begotten of the war. The service rendered by the staff in arranging and presenting this special instruction is deemed to be of the highest practical value in the war effort.

The decision of the Selective Service System that graduate students in specified critical fields (which comprise most of the subjects offered at the Institute) are eligible for consideration for occupational deferment (1) if they are engaged in research on a war problem under supervision of a recognized Federal agency, or (2) if they are graduate assistants contributing to

* These and other graduate students, detailed to the Institute for instruction since November 1, 1941, are not recorded in any statistical data elsewhere in this report.

instruction of undergraduates in the fields of their own specialization, will undoubtedly decrease the registration in the Graduate School in 1942-43.

A census of departmental opinion as to the desirability of encouraging graduate work instead of immediate industrial employment for holders of the S.B. degree shows that in most departments some postgraduate training for the most able students is deemed to be for the best national interest, since by such postgraduate training some supply of technological man power to undertake supervisory work will be maintained with ultimate gain to all concerned.

Graduate students enrolling for 1942-43 have been encouraged to register for as much graduate work as is available in their fields in the Summer Session, and it has been voted that Summer Session attendance will be accepted in partial fulfillment of residence requirements for advanced degrees on the same basis as that in any regular term. While no definite change of registration dates for graduate students is proposed, every effort is being made to maintain during the summer term schedules of work comparable to those normally available in regular terms, particularly in such subjects as are normally selected for removal of deficiencies in undergraduate preparation elsewhere than at the Institute.

Applications for graduate scholarship aid numbered 667; grants totaled 318; the awards exceeded slightly \$116,000 (including \$33,030 from general funds for tuition for staff members).

Advanced degrees conferred during the academic year 1941-42 were: Ph.D., 26; Sc.D., 32; Dr.P.H., 1; S.M., 214; M.Arch., 6; M.C.P., 4; and M.P.H., 7; a total of 290.

JOHN W. M. BUNKER.

THE REGISTRAR

The total registration last year decreased for the first time since 1934. There were 83 less students, or a drop of 2.6 per cent. The change in most of the classes was minor, except for the Graduate Class where the decrease was 80 students. This decrease would have been larger except for the fact that there

were over 100 Graduate students in Meteorology detailed here from the Army, the Navy, and the Weather Bureau.

For the coming year it is expected that the Freshman Class will be larger than usual; the other three undergraduate classes will probably be smaller, and there will be a substantial decrease in the number of Graduate students.

Only a few of the students in the Class of 1943 failed to attend this past summer, which was their first term. The records for this Summer Term were good, indicating that the accelerated program for seniors is working satisfactorily.

The statistics for the year 1941-42 follow.

J. C. MacKINNON.

FOR THE YEAR 1941-1942

All statistics on registration are as of November 1, 1941

All statistics on degrees are through June, 1942

TABLE 1. REGISTRATION SINCE THE FOUNDATION OF THE INSTITUTE

Year	Number of Students	Year	Number of Students	Year	Number of Students
1865-66	72	1891-92	1,011	1917-18	1,698
1866-67	137	1892-93	1,060	1918-19	1,819
1867-68	167	1893-94	1,157	1919-20	3,078
1868-69	172	1894-95	1,183	1920-21	3,436
1869-70	206	1895-96	1,187	1921-22	3,505
1870-71	224	1896-97	1,198	1922-23	3,180
1871-72	261	1897-98	1,198	1923-24	2,949
1872-73	348	1898-99	1,171	1924-25	2,938
1873-74	276	1899-00	1,178	1925-26	2,813
1874-75	248	1900-01	1,277	1926-27	2,671
1875-76	255	1901-02	1,415	1927-28	2,712
1876-77	215	1902-03	1,608	1928-29	2,868
1877-78	194	1903-04	1,528	1929-30	3,066
1878-79	188	1904-05	1,561	1930-31	3,209
1879-80	203	1905-06	1,466	1931-32	3,188
1880-81	253	1906-07	1,397	1932-33	2,831
1881-82	302	1907-08	1,415	1933-34	2,606
1882-83	368	1908-09	1,461	1934-35	2,507
1883-84	443	1909-10	1,479	1935-36	2,540
1884-85	579	1910-11	1,506	1936-37	2,793
1885-86	609	1911-12	1,559	1937-38	2,966
1886-87	637	1912-13	1,611	1938-39	3,093
1887-88	720	1913-14	1,685	1939-40	3,100
1888-89	827	1914-15	1,816	1940-41	3,138
1889-90	909	1915-16	1,900	1941-42	3,055
1890-91	937	1916-17	1,957		

TABLE 2. THE CORPUS OF INSTRUCTORS

	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41
Faculty Members of the Staff . . .	220	240	253	242	235	245	245	244	267	273	282	285	292
Professors	81	86	98	93	88	83	87	78	87	90	98	99	95
Associate Professors	59	63	68	60	57	69	81	87	89	98	89	92	99
Assistant Professors	71	80	79	81	80	82	68	70	76	72	83	83	86
Ex-Officio	2	4	3	3	5	6	6	6	5	6	7	7	7
Instructors	7	7	5	5	5	5	3	3	3	3	3	3	2
Technical Instructors	—	—	—	—	—	—	—	—	—	—	—	—	1
Research Associates	—	—	—	—	—	—	—	—	7	4	2	1	2
Other Members of the Staff	295	323	335	283	263	272	284	291	331	368	401	396	395
Instructors	116	123	133	105	90	86	90	97	101	97	99	91	101
Technical Instructors	—	—	—	—	—	—	—	—	—	—	—	—	6
Teaching Fellows	—	—	—	21	22	20	24	51	52	52	52	55	52
Assistants	68	70	96	45	43	70	76	64	69	79	78	85	87
Technical Assistants	—	—	—	28	31	28	—	—	—	—	—	—	—
Lecturers	32	32	34	28	25	25	24	19	29	28	31	31	17
Research Associates	21	31	31	32	25	22	27	31	22	25	36	35	47
Research Assistants	58	65	36	20	21	18	30	24	42	72	90	91	84
Research Fellows (D. I. C.)	—	2	5	3	3	2	1	—	—	—	—	—	—
Research Fellows	—	—	—	—	3	1	12	5	16	15	15	8	—
National Research Council Fellows .	—	—	—	—	—	—	—	—	—	—	—	—	1
Special Investigator	—	—	—	1	—	—	—	—	—	—	—	—	—
Total	515	563	588	525	498	517	529	535	598	641	683	681	687
Other Members of the Faculty . . .	14	15	15	17	25	26	27	31	28	28	28	32	37
Professors: Emeriti	4	6	7	13	21	23	24	29	27	27	27	31	36
Retired	4	3	3	—	—	—	—	—	—	—	—	—	—
Non-Resident	6	6	5	4	4	3	3	2	1	1	1	1	1

TABLE 3. CLASSIFICATION OF STUDENTS BY COURSES AND YEARS

COURSE NAME AND NUMBER	1939-40						1940-41						1941-42					
	YEAR						YEAR						YEAR					
	1	2	3	4	G	Total	1	2	3	4	G	Total	1	2	3	4	G	Total
Aeronautical Engineering XVI	96	28	31	34	29	218	—	39	34	33	40	146	—	44	42	39	22	147
Architecture IV, IV-B, IV-C	18	12	24	17	22	93	13	18	16	19	20	94	13	13	21	16	18	76
Architecture (IV, IV-B, IV-C) Fifth Year	—	6	6	15	—	15	—	—	6	5	35	18	—	6	—	11	—	16
Biology and Public Health VII	6	6	3	11	35	61	—	6	6	2	5	52	—	6	3	5	37	48
Biophysics and Biological Engineering VII-A	5	6	1	1	1	14	—	—	3	2	—	7	—	—	3	2	2	13
Building Engineering and Construction XVII	3	6	8	9	—	26	—	6	4	7	—	17	—	2	8	4	—	14
Business and Engineering Administration XV	44	62	56	68	21	251	44	71	67	63	32	223	—	97	55	61	22	205
Chemical Engineering X	124	102	66	75	83	450	—	84	56	60	70	280	—	97	70	62	68	297
Chemical Engineering Practice X-A, X-B	—	—	—	—	47	47	—	—	—	—	7	58	—	—	—	—	—	41
Chemistry V	26	31	31	26	80	194	—	21	32	30	79	162	—	19	29	36	67	151
Civil Engineering I	22	19	21	18	24	104	—	13	16	24	27	80	—	23	14	18	16	71
Army Engineer (in Civil Eng. Department)	—	—	—	—	13	13	—	—	—	—	—	—	—	—	—	—	—	1
Economics and Engineering or Science	—	—	—	—	1	1	—	—	—	—	3	3	—	—	—	—	—	1
Electrical Engineering VI, VI-B, VI-C	68	49	59	59	63	298	—	46	49	67	60	222	—	22	40	50	39	151
Electrical Engineering (Cooperative) VI-A	26	36	15	22	35	134	—	46	20	17	20	103	—	31	41	19	14	105
§Electrochemical Engineering XIV	—	—	—	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—
Food Technology and Indust. Biology VII-B	1	4	7	4	—	16	—	9	9	5	—	23	—	6	5	9	—	20
General Engineering IX-B	9	8	12	39	—	68	—	9	9	24	—	42	—	7	13	16	—	36
General Science IX-A	4	2	5	19	—	30	—	5	11	6	—	22	—	3	8	10	—	21
Geology XII	3	5	8	7	13	36	—	—	6	5	7	16	—	3	5	5	14	27
Industrial Economics	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Marine Transportation XIII-C	6	6	9	4	—	25	—	4	8	7	—	19	—	10	5	5	—	12
Marine Transportation (XIII-C) Fifth Year	—	—	—	8	—	8	—	—	—	—	—	6	—	—	—	—	—	20
Mathematics XVIII	5	6	5	7	17	40	—	7	6	7	10	30	—	5	7	4	—	27
Mechanical Engineering II	78	105	86	91	52	412	—	96	90	81	63	330	—	116	66	91	46	319
Army Ordnance (in Mech. Eng. Dept.)	—	—	—	—	22	22	—	—	—	—	4	4	—	—	—	—	2	2
Torpedo Engineering (in Mech. Eng. Dept.)	—	—	—	—	2	2	—	—	—	—	2	2	—	—	—	—	—	2
Mechanical Engineering (Cooperative) II-A	—	—	—	6	7	19	—	—	9	6	6	21	—	—	8	9	7	24
†Metallurgy III	18	25	25	29	24	121	—	27	26	29	38	120	—	25	23	33	32	113
†Metallurgy (in Metallurgy Department)	—	—	—	—	3	3	—	—	—	—	9	9	—	—	—	—	12	12
‡Meteorology XIV	—	—	—	—	27	27	—	—	—	—	91	91	—	—	—	—	—	110
†Mining Engineering III	—	—	—	—	3	10	—	—	—	—	—	—	—	—	—	—	—	—
Naval Architecture and Marine Eng. XIII	29	21	18	19	5	92	—	34	31	15	5	85	—	32	27	23	3	85
Naval Engineering (in Naval Arch. Dept.)	—	—	—	—	14	14	—	—	—	—	11	11	—	—	—	—	—	13
Naval Construction and Engineering XIII-A	—	—	—	—	10	10	—	—	—	18	21	10	49	—	19	18	9	46
Physics VIII	13	24	27	27	61	152	—	16	26	26	55	123	—	18	16	27	59	120
Sanitary Engineering XI	1	1	1	1	7	10	—	—	2	2	2	4	—	—	—	3	1	2
Unclassified	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
†First Year (Not including Course IV)	—	4	25	1	—	30	584	—	12	50	2	64	—	13	43	4	—	60
Total	605	568	570	656*	721	3,100	605	578	602	594*	759	3,138	640	567	574	595*	679	3,055

* These totals include fifth year in Architecture IV, City Planning IV-B, City Planning Practice IV-C, and Marine Transportation XIII-C.
 † June 1946, Mining Engineering discontinued. Metallurgy, formerly Course XIX, changed to Course III.
 ‡ Beginning September 1940, First Year Students not required to designate choice of course except for Course IV.
 § June 1946, Electrochemical Engineering discontinued. June 1941, Meteorology changed to Course XIV.

TABLE 4-A
CLASSIFICATION OF STUDENTS BY COURSES, OPTIONS, AND YEARS

No.	NAME	OPTION	Opt.	YEAR												TOTAL	COURSE NUMBER
				2		3		4		G		Tot.					
				Opt.	Tot.	Opt.	Tot.	Opt.	Tot.	Opt.	Tot.						
I	Civil Engineering	1. General	1	23	14	18	16	—	—	—	—	—	—	—	71	I	
		2. Automotive	2	—	—	—	—	—	—	—	—	—	—	—	—		
		3. Heat	3	—	—	—	—	—	—	—	—	—	—	—	—		
II	Mechanical Engineering	4. Materials and Design	4	116	66	91	48	46	—	—	—	—	—	—	321	II	
		Torpedo Engineering		—	—	—	—	—	—	—	—	—	—	—	—		
II-A	Mechanical Engineering — Cooperative	1. Metallurgy	1	—	8	9	7	—	—	—	—	—	—	—	24	II-A	
		2. Mineral Dressing	2	25	23	33	44	32	—	—	—	—	—	—	125	III	
III	Metalurgy			—	—	—	—	—	—	—	—	—	—	—	—		
IV	Ceramics			13	21	9	8	—	—	—	—	—	—	—	66	IV	
	Architecture			—	—	—	—	—	—	—	—	—	—	—	—		
	Fifth Year			—	—	15	9	—	—	—	—	—	—	—	—		
IV-B	City Planning			—	—	—	—	—	—	—	—	—	—	—	12	IV-B	
	Fifth Year			—	—	—	—	—	—	—	—	—	—	—	—		
IV-C	City Planning Practice			—	—	—	—	—	—	—	—	—	—	—	—		
	Fifth Year			—	—	—	—	—	—	—	—	—	—	—	—		
V	Chemistry			—	—	—	—	—	—	—	—	—	—	—	—		
VI	Electrical Engineering			19	29	36	67	—	—	—	—	—	—	—	131	V	
VI-A	Electrical Engineering — Cooperative			21	21	21	39	—	—	—	—	—	—	—	102	VI-A	
VI-B	Electrical Engineering — Illuminating			31	41	19	14	—	—	—	—	—	—	—	105	VI-B	
VI-C	Electrical Engineering — Communications			1	3	1	1	—	—	—	—	—	—	—	5	VI-C	
VII	Biology and Public Health	1a. Biology and Public Health		—	—	—	—	—	—	—	—	—	—	—	—		
		1b. Biology	1a	—	—	—	—	—	—	—	—	—	—	—	—		
		2. Public Health Engineering	1b	3	3	5	37	—	—	—	—	—	—	—	44	VII	
VII-A	Biophysics and Biological Engineering			—	—	—	—	—	—	—	—	—	—	—	—		
VII-B	Food Technology and Industrial Biology			6	3	1	2	—	—	—	—	—	—	—	13	VII-A	
VIII	Physics	1. General	2	—	—	—	—	—	—	—	—	—	—	—	—		
		2. Applied		9	8	16	27	9	—	—	—	—	—	—	20	VII-B	
IX-A	General Science			18	16	11	59	—	—	—	—	—	—	—	120	VIII	
IX-B	General Engineering			3	8	10	—	—	—	—	—	—	—	—	21	IX-A	
X	Chemical Engineering			7	13	16	—	—	—	—	—	—	—	—	36	IX-B	
X-A	Chemical Engineering Practice — Graduate			97	70	62	68	—	—	—	—	—	—	—	297	X	
X-B	Chemical Engineering Practice — Undergraduate			—	—	—	—	—	—	—	—	—	—	—	41	X-A	
XI	Sanitary Engineering			—	—	—	—	—	—	—	—	—	—	—	10	X-B	
XII	Geology	1. Geology	1	2	3	3	2	—	—	—	—	—	—	—	8	XI	
		2. Mineral Resources	2	3	5	5	14	—	—	—	—	—	—	—	27	XII	

(Continued on page 40)

TABLE 4-A — (Continued)
CLASSIFICATION OF STUDENTS BY COURSES, OPTIONS, AND YEARS

No.	NAME	OPTION	Opt.	YEAR										TOTAL	COURSE NUMBER
				2		3		4		G					
				Opt.	Tot.	Opt.	Tot.	Opt.	Tot.	Opt.	Tot.				
XIII	Naval Architecture and Marine Eng.			32	27	27	23	23	3	16	98	XIII			
	Naval Engineering								13						
XIII-A	Naval Construction and Engineering						18	18		9	46	XIII-A			
XIII-C	Marine Transportation			10	5	5	5	7			27	XIII-C			
	Fifth Year									110	110	XIV			
XIV	Meteorology														
XV	Business and Engineering Administration		1	48	39	55	45	61		22	205	XV			
	1. Physical Sciences			19	16	16	16	16							
	2. Chemical Sciences		2	44	2	42				22	147	XVI			
XVI	Aeronautical Engineering										14	XVII			
XVII	Building Engineering and Construction														
	1. Pure		1	3	2	2	1	1							
	2. Applied		2	1	1	1	1	1							
XVIII	Mathematics		3	5	4	7	2	4		11	27	XVIII			
	1. Economics and Engineering														
	2. Economics and Science														
	3. Industrial Statistics														
	Economics										13	Econ.			
	— Economics and Science														
	— Industrial Economics														
	Unclassified										60	Unc.			
	First Year			13		43									
	Total			567	574	595*	679	640			640	First Year			
											3,955	Total			

* This total includes fifth year in Architecture, City Planning, and Marine Transportation.
† Includes 13 in Architecture.

TABLE 4-B
CLASSIFICATION OF SPECIAL STUDENTS BY COURSES AND YEARS
 (Included in Table 4-A)

COURSE	YEAR					TOTAL	COURSE
	I	2	3	4	G		
I Civil Engineering	—	—	—	—	2	8	I
II Mechanical Engineering	—	3	—	1	4		II
III Metallurgy	—	—	2	—	3		III
Ceramics (in Metallurgy Department)	—	—	—	—	4	9	
IV Architecture	5	1	5	2	—		13
IV-B City Planning	—	—	—	2	—	2	IV-B
V Chemistry	—	—	1	—	—	1	V
VI Electrical Engineering	—	1	—	—	—	1	VI
VI-C Electrical Engineering (Communications)	—	—	—	1	—	1	VI-C
VII Biology and Public Health	—	—	2	1	2	5	VII
VIII Physics	—	—	1	—	1	2	VIII
X Chemical Engineering	—	—	—	1	2	3	X
XII Geology	—	—	1	—	—	1	XII
XIII Naval Architecture and Marine Engineering	—	—	1	—	—	1	XIII
XIV Meteorology	—	—	—	—	95	95	XIV
XV Business and Engineering Administration	—	2	—	—	3	5	XV
XVII Building Engineering and Construction	—	—	1	1	—	2	XVII
XVIII Mathematics	—	1	—	—	1	2	XVIII
Total	5	8	14	9	117	153	Total

TABLE 4-C
CLASSIFICATION OF FORMER STUDENTS WHO RETURNED THIS YEAR*
 (Included in Table 4-A)

COURSE	YEAR					TOTAL	COURSE
	I	2	3	4	G		
I Civil Engineering	—	1	1	—	—	2	I
II Mechanical Engineering	—	2	1	3	1	7	II
III Metallurgy	—	—	—	—	1	1	III
V Chemistry	—	2	—	—	2	4	V
VI Electrical Engineering	—	2	1	—	—	3	VI
VI-C Electrical Engineering (Communications)	—	—	1	—	—	1	VI-C
VII-B Food Technology and Industrial Biology	—	—	—	1	—	1	VII-B
VIII Physics	—	—	—	2	4	6	VIII
IX-B General Engineering	—	—	1	—	—	1	IX-B
X Chemical Engineering	—	2	—	3	1	6	X
XII Geology	—	—	—	—	2	2	XII
XIII Naval Architecture and Marine Engineering	—	1	1	1	—	3	XIII
XIII-A Naval Construction and Engineering	—	—	1	—	—	1	XIII-A
XV Business and Engineering Administration	—	1	1	—	—	2	XV
XVI Aeronautical Engineering	—	—	1	1	1	3	XVI
XVIII Mathematics	—	1	—	—	—	1	XVIII
Unclassified	—	4	7	4	—	15	Unc.
First Year	11	—	—	—	—	11	First Year
Total	11	16	16	15	14	72	Total

* Excludes five special students.

TABLE 5. CLASSIFICATION OF STUDENTS BY COURSES SINCE 1934

	1934-35	1935-36	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42
<i>Engineering Courses</i>	1,961	2,028	2,187	2,288	2,379	2,418	1,922	1,836
<i>Total</i>								
Aeronautical Engineering XVI	183	200	221	210	230	245	237	147
Architectural Engineering IV-A	23	17	12	5	2	—	—	—
Building Engineering and Construction XVII	31	32	23	27	29	26	17	14
Business and Engineering Administration XV	305	280	274	269	265	251	223	205
Chemical Engineering X, X-A, X-B	356	414	452	473	524	497	338	348
Civil Engineering I	129	142	122	123	114	104	80	71
Army Engineer (in Civil Engineering Dept.)	—	—	11	15	17	13	—	—
Electrical Engineering VI, VI-A, VI-B, VI-C	380	381	444	452	448	432	325	256
†Electrochemical Engineering XIV	38	27	23	22	9	2	—	—
General Engineering IX-B	52	61	47	64	73	68	42	36
Mechanical Engineering II, II-A	255	274	313	370	401	433	353	345
Army Ordnance (in Mechanical Engineering Dept.)	9	10	10	12	10	22	4	—
*Metallurgy III	50	60	81	84	108	124	129	125
†Meteorology XIV	—	—	—	—	—	—	—	110
*Mining Engineering III	32	28	32	35	25	10	—	—
Naval Architecture and Marine Eng. XIII, XIII-C	90	80	93	100	89	139	121	125
Naval Construction and Engineering XIII-A	25	23	23	21	28	42	49	46
Sanitary Engineering XI	12	9	6	6	7	10	4	8
<i>Science Courses</i>	405	382	467	501	555	543	453	427
<i>Total</i>								
Biology and Public Health VII, VII-A, VII-B	81	65	91	94	86	91	82	81
Chemistry V	137	140	176	186	203	194	162	151
General Science IX-A	10	12	20	25	33	30	22	21
Geology XII	16	15	26	32	45	36	34	27
Mathematics XVIII	35	26	20	27	28	40	30	27
Physics VIII	126	124	134	137	160	152	123	120
<i>Architecture IV, IV-B, IV-C</i>	120	100	97	111	100	108	112	92
<i>Total</i>								
<i>Economics and Engineering or Science</i>	—	2	7	3	4	1	3	13
<i>Unclassified</i>	12	18	35	63	55	30	64	60
† <i>First Year (not including Course IV)</i>	—	—	—	—	—	—	584	627
Grand Total	2,507	2,540	2,793	2,966	3,093	3,100	3,138	3,055

* June 1940, Mining Engineering discontinued. Metallurgy, formerly Course XIX, changed to Course III.

† Beginning September 1940, First Year Students not required to designate choice of course except for Course IV.

‡ June 1940, Electrochemical Engineering discontinued. June 1941, Meteorology, formerly included in Aeronautical Engineering, changed to Course XIV.

TABLE 6. GEOGRAPHICAL CLASSIFICATION OF STUDENTS SINCE 1937

UNITED STATES		1937	1938	1939	1940	1941
<i>North Atlantic</i> Total		2,026	2,057	2,050	2,060	2,056
Connecticut		113	125	124	104	116
Maine		26	20	22	22	28
Massachusetts		1,077	1,032	979	951	896
New Hampshire		23	22	19	21	28
New Jersey		169	169	173	180	178
New York		432	492	522	558	586
Pennsylvania		142	146	152	165	177
Rhode Island		35	40	50	47	35
Vermont		9	11	9	12	12
<i>South Atlantic</i> Total		139	170	185	187	167
Delaware		14	14	15	14	10
District of Columbia		32	40	59	52	42
Florida		13	18	21	26	25
Georgia		6	10	11	11	13
Maryland		29	30	27	36	29
North Carolina		8	8	6	11	16
South Carolina		2	7	5	4	1
Virginia		24	25	23	21	20
West Virginia		11	18	18	12	11
<i>South Central</i> Total		94	105	106	99	103
Alabama		12	16	15	9	9
Arkansas		3	6	6	4	8
Kentucky		12	15	14	18	18
Louisiana		14	11	12	12	9
Mississippi		5	3	4	7	8
Tennessee		10	9	13	14	18
Texas		38	45	42	35	33
<i>North Central</i> Total		350	365	375	403	377
Illinois		106	111	115	121	103
Indiana		14	15	12	22	23
Iowa		8	7	9	14	5
Kansas		10	10	8	7	7
Michigan		34	39	44	45	47
Minnesota		18	11	14	18	10
Missouri		41	40	50	41	44
Nebraska		5	2	2	1	9
North Dakota		4	—	—	—	4
Ohio		95	105	96	99	99
South Dakota		1	—	2	3	3
Wisconsin		14	17	14	19	23
<i>Western</i> Total		129	155	153	154	145
Arizona		3	2	6	6	—
California		46	49	42	44	45
Colorado		26	28	28	26	22
Idaho		2	3	1	—	1
Montana		6	12	11	6	8
Nevada		2	3	2	1	—
New Mexico		5	4	7	6	3
Oklahoma		6	13	9	19	19
Oregon		7	11	12	12	15
Utah		6	6	11	10	7
Washington		19	21	22	21	23
Wyoming		1	3	2	3	2
<i>Territories and Dependencies</i> Total		12	10	14	11	12
Alaska		—	—	—	—	1
Canal Zone		1	1	1	1	1
Hawaii		6	4	4	5	4
Puerto Rico		5	5	9	5	6
Total for United States		2,750	2,862	2,883	2,914	2,860

(Continued on page 44)

TABLE 6 — (Continued)

FOREIGN COUNTRIES	1937	1938	1939	1940	1941
Total	216	231	217	224	195
Argentina	2	5	5	6	4
Australia	2	—	1	1	1
Austria	1	1	—	—	—
Barbados	—	—	—	2	—
Belgium	—	2	4	2	—
Bolivia	—	—	—	1	—
Brazil	1	1	11	11	14
British West Indies	1	3	3	1	2
Canada	37	52	47	37	24
Chile	—	—	1	3	—
China	57	37	29	26	37
Colombia	6	6	6	6	6
Cuba	14	10	11	13	15
Czechoslovakia	—	1	1	1	—
Denmark	1	1	2	1	1
Dominican Republic	1	1	1	1	1
Dutch West Indies	—	1	—	—	—
Ecuador	—	—	—	—	1
Egypt	—	—	—	1	—
England	8	11	4	2	1
Finland	—	—	—	—	1
France	5	5	6	2	2
Germany	2	4	4	2	1
Greece	—	—	—	2	1
Guatemala	1	—	1	2	2
Haiti	2	1	1	2	—
Honduras	1	2	2	2	2
Iceland	—	—	—	1	—
India	8	10	4	14	11
Iraq	1	—	—	—	1
Ireland	—	1	—	—	—
Italy	2	4	4	3	1
Japan	2	1	1	2	—
Mexico	7	7	8	8	9
Netherland Indies	1	—	—	—	—
Netherlands	4	5	7	1	1
Newfoundland	1	1	—	—	—
New Zealand	2	—	1	1	—
Norway	2	3	7	7	4
Palestine	—	—	—	1	—
Panama	—	1	—	—	—
Paraguay	—	1	—	—	—
Peru	1	2	1	5	6
Philippines	13	14	10	18	11
Poland	—	2	1	—	—
Portugal	—	—	—	1	2
Rhodesia	—	—	—	1	—
Roumania	—	—	1	2	2
Salvador	—	2	—	1	1
Scotland	—	1	1	—	—
South Africa	—	1	—	—	—
Spain	1	1	1	1	—
Straits Settlements	—	—	1	1	1
Sweden	1	2	1	1	—
Switzerland	3	4	5	4	1
Syria	2	1	1	1	1
Thailand	9	8	8	6	4
Turkey	6	8	9	12	16
Union of South Africa	5	3	1	1	1
Union of Socialistic Soviet Republics	—	3	2	—	—
Uruguay	—	—	—	—	2
Venezuela	3	1	2	4	4
Grand Total, United States and Foreign	2,966	3,093	3,100	3,138	3,055

TABLE 7. NEW STUDENTS ENTERING FROM OTHER COLLEGES AS CANDIDATES FOR DEGREES

Class Joined at the Institute	Years Spent at College				Total
	One	Two	Three	Four or more	
First Year	24	13	1	3	41
Second Year	15	20	6	4	45
Third Year	2	9	19	37	67
Fourth Year	—	—	3	—	3
Graduate Year	—	—	4	207	211
Total	41	42	33	251	367

TABLE 8
WOMEN STUDENTS CLASSIFIED BY COURSES AND YEARS

COURSE	YEAR					Total
	I	2	3	4	G	
III Metallurgy	—	—	—	—	2	2
IV Architecture	2	4	6	1	—	13
Fifth Year	—	—	—	3	—	3
V Chemistry	—	2	—	1	4	7
VII Biology and Public Health	—	1	1	2	11	15
VII-A Biophysics and Biological Engineering	—	1	—	—	—	1
VIII Physics	—	1	—	—	3	4
IX-A General Science	—	1	—	—	—	1
X Chemical Engineering	—	—	—	—	1	1
XIV Meteorology	—	—	—	—	1	1
XV Business and Engineering Administration	—	1	—	—	—	1
XVIII Mathematics	—	—	—	1	2	3
First Year (not including Course IV)	7	—	—	—	—	7
Total	9	11	7	8*	24	59

* This total includes Fifth Year in Architecture.

TABLE 9
OLD AND NEW STUDENTS

Year	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42
Students registered at end of last academic year (including spe- cials)	1,634	1,843	1,955	1,985	1,973	1,897
Students who have previously at- tended the Institute, but were not registered at end of last aca- demic year (including specials)	110	124	96	100	127	77
New students who entered by ex- amination	190	162	213	198	229	318
New students who entered with- out examination	371	377	399	338	303	264
New students who entered from other colleges as candidates for degrees	432	395	379	419	404	367
New students (specials, not candi- dates for degrees)	56	65	51	60	102	132
Total	2,793	2,966	3,093	3,100	3,138	3,055

TABLE 10. LIST OF AMERICAN COLLEGES AND UNIVERSITIES WITH NUMBER OF GRADUATES ATTENDING THE INSTITUTE

College	College	College
A. & M. College of Texas 2	Manhattan College 1	Tusculum College 3
Albion College 1	Marietta College 1	Union College (N. Y.) 4
Alabama Polytechnic Inst. 2	Mass. Inst. of Tech. 160	U. S. Coast Guard Academy 6
Albright College 1	Mass. School of Art 1	U. S. Military Academy 4
Alfred University 2	Mass. State College 8	U. S. Naval Academy 60
Amherst College 5	Mercer University 1	University of Akron 2
Antioch College 1	Mich. Coll. of Min.&Tech. 1	University of Alabama 3
Arkansas State College 1	Mich. State Coll. A.&A.S. 1	University of Arkansas 3
Baldwin Wallace College 1	Mich. State Normal Coll. 1	University of Buffalo 2
Ball State Teachers' Coll. 1	Michigan Western State Teachers' College 2	University of California 7
Bard College 1	Middlebury College 2	University of Chicago 5
Bates College 1	Middlesex University 1	University of Colorado 5
Baylor University 1	Milwaukee Downer College 1	University of Dayton 1
Beloit College 1	Mississippi State College 1	University of Denver 6
Berea College 1	Montana School of Mines 3	University of Georgia 1
Bethany College 4	Montana State College 1	University of Illinois 8
Berea College 7	Moravian Coll.&Theol.Sem. 1	University of Kansas 5
Boston University 4	Mt. Holyoke College 3	University of Kentucky 4
Bowdoin College 2	Muhlenberg College 2	University of Louisville 1
Bridgewater State Teachers' College 1	Murray State Teachers' Coll. 2	University of Maine 1
Brigham Young University 1	Neb. State Teachers' Coll. 2	University of Maryland 1
Brooklyn College 1	Nebraska Wesleyan Univ. 1	Univ. of Memphis Law Sch. 1
Brown University 3	Newark College of Eng. 1	University of Michigan 12
Bucknell University 3	New York University 3	University of Minnesota 3
California Inst. of Tech. 5	N. C. State Coll. of Agric. and Engineering 3	University of Missouri 3
Carleton College 3	Northeast Missouri State Teachers' College 1	University of Nebraska 4
Carnegie Inst. of Tech. 6	Northeastern University 2	Univ. of New Hampshire 7
Case School of App.Science 5	Northwestern University 3	Univ. of North Carolina 1
Catawba College 2	Oberlin College 4	University of Notre Dame 5
Clark University 2	Ohio Northern University 1	University of Oklahoma 1
Colby College 3	Ohio State University 8	University of Pittsburgh 3
College of the City o N. Y. 4	Ohio University 1	University of Rochester 3
College of Idaho 1	Ohio Wesleyan University 3	University of Scranton 1
Coll. of Holy Cross (Mass.) 3	Oklahoma A. & M. College 1	University of Tennessee 3
College of William & Mary 2	Oklahoma Baptist Univ. 1	University of Texas 3
College of Wooster 2	Oregon State College 2	University of Toledo 1
Colorado College 3	Pennsylvania State Coll. 9	University of Utah 3
Colorado School of Mines 1	Poly. Inst. of Brooklyn 2	University of Vermont 1
Columbia University(N.Y.) 2	Pomona College 2	University of Washington 8
Cooper Union 1	Princeton University 11	University of Wisconsin 6
Cornell University 4	Providence College 1	Ursinus College 1
Dartmouth College 16	Purdue University 4	Vassar College 1
Denison University 1	Reed College 3	Virginia Military Institute 2
DePaul University 1	Rensselaer Poly. Inst. 6	Virginia Union University 1
DePauw University 1	Rhode Island State Coll. 2	Virginia Polytechnic Inst. 1
Dickinson College 2	Rice Institute 1	Washington College 1
Drexel Institute 2	Ripon College 3	Washington & Jefferson Coll. 3
Duke University 2	Roanoke College 1	Washington & Lee Univ. 1
Emmanuel College 2	Rockhurst College 1	Washington Univ. (Mo.) 4
Emory University 2	Rose Polytech. Inst. 1	Wayne University 1
Fairmont State Teachers' College 1	Rutgers University 3	Webb Inst. of Naval Arch. 1
Geneva College 1	St. Bonaventura College 1	Wellesley College 4
Georgetown University 1	St. Joseph's College 1	Wesleyan University 4
George Washington Uni. 1	St. Lawrence University 5	Western Kentucky State Teachers' College 1
Georgia School of Tech. 2	St. Vincent College 1	Western Reserve University 1
Hamilton College 1	Simmons College 2	West Virginia University 1
Hampden-Sydney College 1	Smith College 3	W. Virginia Wesleyan Coll. 1
Harvard University 25	S. D. State School of Mines Southwestern 1	William Jewell College 2
Haverford College 2	Springfield College 2	Williams College 10
H. Sophie Newcomb Mem. College 1	Stanford University 9	Wilson College 1
Hobart College 1	State Coll. of Washington 2	Wisconsin State Teachers' College (LaCrosse) 1
Iowa State Coll.of A.&M.A. 5	State University of Iowa 2	Wisconsin State Teachers' College (Superior) 1
Iowa Wesleyan College 1	Swarthmore College 3	Woodstock College 1
Johnson C. Smith Univ. 1	Syracuse University 3	Worcester Polytechnic Inst. 2
Juniata College 2	Teachers College of the City of Boston 1	Yale University 12
Kansas State Coll.of A.&A.S 1	Temple University 1	Total 788
Kenyon College 4	Tennessee Poly. Inst. 1	Number of American Colleges Represented 213
Knox College 1	Texas Technical College 1	Number of Foreign Colleges Represented (Not Listed) 51
Lafayette College 1	The Principia 2	Total 264
Lehigh University 5	Trinity Coll. (Washington D. C.) 1	
Lincoln Memorial Univ. 1	Tufts College 9	
Louisiana State Uni. & Agric. & Mech. College 2	Tulane Univ.of Louisiana 3	
Lowell Textile Institute 1		
Loyola University 1		

TABLE II
REGULAR STUDENTS FROM COLLEGES CLASSIFIED BY COURSES

COURSE	No Previous Degree			Graduates of Other Colleges				Graduates of M. I. T. Taking Graduate Work			
	Entered		Total	Entered		Total	S. B. Degree June 1941	Other Graduates	Total		
	Sept. 1941	Pre-vious Years		September 1941						Previous Years	
			Under-grad.	Grad.	Under-grad.	Grad.					
Aeronautical Engineering XVI	—	16	16	—	9	7	11	27	2	—	2
Architecture IV, IV-B, IV-C	5	10	15	1	7	2	7	17	4	—	4
Biology and Public Health VII, VII-A, VII-B	—	—	—	20	—	—	11	31	3	—	6
Building Engineering and Construction XVII	—	1	1	—	—	—	—	—	—	—	—
Business and Engineering Administration XV	12	21	33	2	14	5	5	26	—	—	—
Chemical Engineering X, X-A, X-B	10	20	30	3	39	1	49	91	15	4	19
Chemistry V	2	10	12	1	15	1	33	50	7	12	19
Civil Engineering I	5	12	17	—	5	1	7	13	1	—	1
Economics and Engineering or Science	—	—	—	—	12	—	—	12	1	—	1
Electrical Engineering VI, VI-A, VI-B, VI-C	11	23	34	8	14	5	17	44	17	5	22
General Engineering IX-B	2	7	9	—	—	—	—	—	—	—	—
General Science IX-A	—	—	—	—	—	—	—	—	—	—	—
Geology XII	—	—	—	—	—	—	—	—	—	—	—
Mathematics XVIII	1	4	5	—	3	—	9	12	1	—	2
Mechanical Engineering II, II-A	9	33	42	3	11	10	13	37	14	3	4
Metallurgy III	3	4	7	—	11	—	16	27	2	13	27
Meteorology XIV	—	—	—	—	12	2	2	14	1	—	1
Naval Architecture XIII, XIII-C	5	12	17	—	3	3	—	6	—	—	—
Naval Engineering (in Naval Arch. Department)	—	—	—	—	13	—	—	13	—	—	—
Naval Construction and Engineering XIII-A	—	—	—	18	18	18	9	45	—	—	—
Physics VIII	2	9	11	—	16	—	29	45	—	—	—
Sanitary Engineering XI	1	1	2	—	1	—	1	2	5	8	13
Unclassified	13	7	20	—	—	—	—	—	—	—	—
First Year	35	3	38	2	—	—	—	2	—	—	—
Total	116	194	310	40	211	52	219	522	74	58	132

TABLE 12. NUMBER OF DEGREES AWARDED IN DECEMBER 1941, APRIL 1942, AND MAY 1942

Name of Course	S.B.		B.Arch. and B.Arch.C.P.		S.M.		M.Arch. and M.C.P.		Ph.D.		Sc.D.		Total	
	Dec. 1941	April and May 1942	Dec. 1941	April 1942	Dec. 1941	May 1942	Dec. 1941	May 1942	Dec. 1941	May 1942	Dec. 1941	May 1942	Dec. 1941	April and May 1942
Aeronautical Engineering														
Architecture	4	36	—	—	3	9	—	—	—	—	—	—	—	7
Biology	—	—	3	14	—	—	5	1	—	—	—	—	—	8
Biology and Public Health	—	—	—	—	2*	6†	—	—	—	—	—	—	—	—
Biophysics and Biological Engineering	—	3	—	—	—	—	—	—	—	—	—	—	—	2
Building Engineering and Construction	—	3	—	—	—	—	—	—	—	—	—	—	—	—
Business and Engineering Administration	3	55	—	—	1	13	—	—	—	—	—	—	—	4
Ceramics	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Chemical Engineering	4	53	—	—	7	7	—	—	—	—	—	—	—	3
Chemical Engineering Practice	1	8	—	—	14	20	—	—	—	—	—	—	—	67
Chemistry	2	30	—	—	3	1	—	—	—	—	—	—	—	17
City Planning	—	—	—	—	—	—	—	—	—	—	—	—	—	15
Civil Engineering	3	16	—	1	—	—	1	3	—	—	—	—	—	11
Economics and Engineering	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Electrical Engineering (Inc. VI-A)	9	55	—	—	1	1	—	—	—	—	—	—	—	3
Food Technology and Industrial Biology	—	9	—	—	9	13	—	—	—	—	—	—	—	1
General Engineering	2	15	—	—	—	—	—	—	—	—	—	—	—	18
General Science	—	7	—	—	—	—	—	—	—	—	—	—	—	9
Geology	1	4	—	—	—	—	—	—	—	—	—	—	—	2
Marine Engineering	—	—	—	—	—	—	—	—	—	—	—	—	—	7
Marine Transportation	—	—	—	—	—	—	—	—	—	—	—	—	—	11
Mathematics	—	7	—	—	—	—	—	—	—	—	—	—	—	1
Mathematics	—	4	—	—	—	—	—	—	—	—	—	—	—	15
Mechanical Engineering (Inc. II-A)	5	92	—	—	2	17	—	—	—	—	—	—	—	7
Metallurgy	2	31	—	—	1	6	—	—	—	—	—	—	—	6
Meteorology	—	—	—	—	9	8	—	—	—	—	—	—	—	110
Naval Architecture and Marine Engineer- ing	—	21	—	—	—	—	—	—	—	—	—	—	—	8
Naval Construction	—	—	—	—	12	9	—	—	—	—	—	—	—	4
Physics	3	23	—	—	1	—	—	—	—	—	—	—	—	1
Public Health Engineering	—	2	—	—	—	—	—	—	—	—	—	—	—	1
Sanitary Engineering	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Textile Technology	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Without Course Classification	—	—	—	—	10	2	—	—	—	—	—	—	—	1
Total	39	477	3	15	77	144	6	4	6	21	16	16	147	677

* Includes one Master in Public Health.

† Master in Public Health.

‡ Includes one Doctor in Public Health.

TABLE 13
DEGREES OF BACHELOR OF SCIENCE ACCORDING TO CLASS IN WHICH THEY WERE AWARDED

Class	Aeronautical Eng.	Architectural Eng.†	Architecture	Biology or Natural Hist. (Inc. VII-A)	Bldg. Eng. & Constr.	Business and Eng. Adm'n.	Chemical Eng.	Chemical Eng. Practice X-B	Chemistry	Civil Engineering	Electrical Eng. (Inc. VI-A)	Electrochemical Engineering*	General Eng.	General Science or General Course	Geology	Mathematics	Mechanical Eng. (Inc. II-A)	Metallurgy**	Military Eng.	Mining Eng. and Metallurgy	Naval Arch.	Physics	Sanitary Eng.	Total	Total by Decades	
1866										2														14	29	
1870										4															5	
1871										2															10	
1872										3															17	
1873										12															29	
1874										10															18	
1875										12															28	
1876										12															43	
1877										12															19	
1878										9															32	
1879										8															43	
1880										8															19	
1881										8															23	
1882										8															8	226
1883										8															28	
1884										8															24	
1885										8															36	
1886										2															28	
1887										10															56	
1888										10															77	
1889										11															8	
1890										14															19	
1891										18															36	
1892										22															28	
1893										11															19	
1894										31															58	
1895										35															75	
1896										36															103	
1897										23															103	
1898										36															139	
1899										41															129	
1900										35															146	
1901										33															191	
1902										48															179	
1903										33															199	
1904										33															185	
1905										32															200	
1906										32															176	
1907										32															185	1,579
1908										32															4	
1909										32															4	
1910										25															185	
										25															4	
										34															4	
										39															21	
										18															18	
										14															14	
										27															14	
										17															3	
										32															2	
										26															5	
										24															2	
										38															4	
										19															6	
										22															3	
										10															2	
										32															3	
										37															9	
										30															2	
										48															230	
										32															9	
										41															2	
										57															12	
										36															251	2,257

(Continued on page 50)

TABLE 13—(Continued)
DEGREES OF BACHELOR OF SCIENCE ACCORDING TO CLASS IN WHICH THEY WERE AWARDED

Class	Aeronautical Eng.	Architectural Eng.†	Architecture	Biology or Natural Hist. (Inc. VII-A)	Bldg. Eng. & Constr.	Business and Eng. Admin.	Chemical Eng.	Chemical Eng. Practice X-B	Chemistry	Civil Engineering	Electrical Eng. (Inc. VI-A)	Electrochemical Engineering*	General Eng.	General Science or General Course	Geology	Mathematics	Mechanical Eng. (Inc. II-A)	Metallurgy**	Military Eng.	Mining Eng. and Metallurgy	Naval Arch.	Physics	Sanitary Eng.	Total	Total by Decades
1911	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1912	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1913	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1914	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1915	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1916	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1917	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1918	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1919	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1920	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1921	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1922	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1923	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1924	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1925	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1926	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1927	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1928	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1929	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1930	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1931	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1932	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1933	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1934	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1935	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1936	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1937	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1938	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1939	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1940	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1941	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1942	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1943	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1944	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1945	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1946	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1947	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1948	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1949	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1950	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1951	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1952	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1953	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1954	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1955	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1956	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1957	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1958	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1959	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1960	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1961	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1962	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1963	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	427	172	865	324	141	1,769	1,698	205	890	2,324	3,077	301	492	227	87	77	3,227	112	5	880	564	340	260	18,464	2,963

* Prior to 1900 this Course was designated as Option 3 (Electrochemistry) of Course VIII.
 † Two received the degree in Naval Architecture, Course XIII-B, in 1916 and three in 1917.
 ‡ Prior to 1932 degrees awarded in Architecture.
 ** Prior to 1938 included in Mining Engineering and Metallurgy.
 †† Includes only April and May degrees awarded in Class 1942.

TABLE 14
DEGREES OF MASTER OF SCIENCE AWARDED

	Aeronautical Engineering	Architecture	Biol. & P. H. (Inc. VII-A)	Business and Eng. Admin.	Ceramics	Chemical Engineering	Chem. Eng. Practice X-A	Chemistry	Civil Engineering	Economics and Engineering	Electrical Eng. (Inc. VI-A)	Geology	Marine Engineering	Mathematics	Mech. Eng. (Inc. II-A)	Metallurgy	Meteorology	Naval Architecture	Naval Construction	Petroleum Engineering	Physics	Sanitary Engineering	Without Course Classification	Total	
1886																								1	
1887																									1
1888																									
1889																									
1890																									
1891																									
1892																									
1893		1																							1
1894									1																1
1895		1							1													1			3
1896		2							1																3
1897		2																							4
1898		1					2								1							1			5
1899		1	1						1													1			3
1900																									
1901		2													2										4
1902		3						3							2										8
1903		5													1										7
1904		4						1			2				1							1			12
1905		9																	3						18
1906		3						1										2							9
1907		6						1										8							15
1908		1						1				3													12
1909		6						1	2			1	1		1			3				1			17
1910		6	1					1	2			1	1		1			7				1			19
1911		5	2					2	2			4			2			3							20
1912		4	2					3	3			2						4				2			20
1913		4	1					3	1			1	1		2			2							19
1914		3	2					7	3			2	2		1			2				3			25
1915	1	4						2	2									1							27
1916	5	7	1					3	5			10	6					4				1			35
1917	4	3						1	3			5			1			4							30
1918	5	1	1					1	1			2						2				1			15
1919	2							3	4			4			1			1							15
1920		1				3		2	4			7	3		1		5			19		1		4	50
1921	3				29			6	2			4	2		10			20							93
1922	5				6	32		4	5			37	2		2		4			10		1			126
1923	10				3	34		1	5			45	2		15		1	4		21		3			170
1924	4				6	41		1	5			34	1		8		1	4		12		5			146
1925	5				1	3	35	3	5			35			10		2					2			123
1926	6					5	20	2	2			60	3		6		1			12					142
1927	9					2	26	4	6			54	6		1		13			6		1			161
1928	9					5	14	2	8			63			2		13			9		1			169
1929	5				2	3	21	4	6			79	4		2		16			6		2			196
1930	3					7	22	5	9			51	1		2		5			5		1			170
1931	4	2				15	34	5	12			57	2		5		10		4	4		2			189
1932	5	5				25	33	8	17			56	2		3		16		1	7		6			237
1933	10					14	26	7	12			46			1		18		2	13		4			182
1934	7	5				16	19	11	9			46	3		3		20		5	11		3			186
1935	3	1				16	14	4	13			55			3		16		6			7			173
1936	5				4	2	7	30	3			22	2		2		14			10		7			151
1937	12	1	5			12	29	8	17			35			1		15		4	4		1			186
1938	13		8			11	28	1	29			58			1		24		1	4		7			230
1939	8		3	8		20	34	1	31			45	2		1		21		6	6		5			228
1940	9		1	9		16	37	3	20			54	4		5		22		7	8		10			237
1941	16		1	12		15	42	3	10			35	3		1		25		7	18		14			259
*1942	9		2	13	I	7	20	1	4			13			1		19		6			4			138
Total	177	84	35	89	4	266	591	122	278	16	1,034	47	16	39	351	57	61	42	303	5	67	25	607	4,316	
Total of degrees in discontinued courses, Architectural Engineering, Electrochemical Engineering, Fuel and Gas Engineering, General Science, Mining Engineering, Naval Construction, Foreign Students, and Railroad Operation (see 1940-41 Report)																							126		
Grand Total																							4,442		

* Includes only May degrees.

TABLE 15
DEGREES AWARDED IN ARCHITECTURE AND CITY PLANNING

Year	Bachelor in Architecture	Bachelor of Architecture in City Planning	Master in Architecture	Master in City Planning
1921	—	—	3	—
1922	—	—	2	—
1923	—	—	7	—
1924	—	—	8	—
1925	—	—	5	—
1926	—	—	9	—
1927	—	—	7	—
1928	—	—	6	—
1929	—	—	9	—
1930	—	—	7	—
1931	—	—	9	—
1932	11	—	5	—
1933	24	—	7	—
1934	27	—	—	—
1935	17	4	11	—
1936	14	4	4	2
1937	9	2	11	3
1938	19	1	3	3
1939	14	1	10	3
1940	11	2	21	7
1941	17	2	6	1
*1942	14	1	1	3
Total . .	177	17	151	22

* Includes only April and May degrees.

TABLE 16
DEGREES OF MASTER IN PUBLIC HEALTH AWARDED

Year	Number
1941	3
*1942	6
<hr/>	
Total	9

* Includes only May degrees.

TABLE 17
DEGREES OF DOCTOR OF PHILOSOPHY AWARDED

Year	Biology	Chemistry	Geology	Mathematics	Physics	Total
1907	—	3	—	—	—	3
1908	—	3	—	—	—	3
1909	—	—	—	—	—	—
1910	—	1	1	—	—	2
1911	1	—	—	—	—	1
1912	—	3	3	—	—	6
1913	—	1	—	—	—	1
1914	—	2	—	—	—	2
1915	—	2	—	—	—	2
1916	—	1	1	—	1	3
1917	—	3	1	—	—	4
1918	—	3	1	—	—	4
1919	—	—	—	—	1	1
1920	—	4	1	—	—	5
1921	1	3	—	—	3	7
1922	—	4	1	—	—	5
1923	—	5	1	—	—	6
1924	2	10	—	—	2	14
1925	—	11	—	—	—	11
1926	—	2	2	—	—	4
1927	2	6	1	1	1	11
1928	1	5	1	1	—	8
1929	4	8	2	1	—	15
1930	—	5	2	3	—	10
1931	—	9	—	1	—	10
1932	1	12	—	1	2	16
1933	2	10	3	3	—	18
1934	2	10	2	2	1	17
1935	4	15	2	3	7	31
1936	—	15	—	3	12	30
1937	2	11	4	1	10	28
1938	2	12	2	4	7	27
1939	1	33	4	3	4	45
1940	3	19	5	4	5	36
1941	1	18	1	3	5	28
*1942	1	8	5	1	5	20
Total	30	257	46	35	66	434

* Includes only May degrees.

TABLE 18. DEGREES OF DOCTOR OF SCIENCE AWARDED

Year	Aero. Eng.	Ceramics	Chem. Eng.	Chemistry	Civil Eng.	Elec. Eng.	Electrochem. Eng.	Geology	Mathematics	Mech. Eng.	Metalurgy	Meteorology	Min. Eng.	Naval Arch.	Petroleum Eng.	Physics	San. Eng.	Total
1911						1												1
1912																		
1913																		
1914																		
1915						1												1
1916																		1
1917	1																	1
1918																		
1919																		
1920								1					1					3
1921																		
1922	1			1		1												3
1923	1							1			1					2		5
1924			2			1		1			3					1		8
1925	1		3								4							7
1926			1		1	1				1	2					1		9
1927							1											2
1928	1		5			2					1							10
1929			3								1			1				6
1930			9			6			1	3	1							20
1931			3	2		3				2	1							9
1932			5		1	2				2	6		1			2		14
1933			10	1	2	3			1	3	2	1						24
1934			3			2	1	1		3	2	1						13
1935						4			2	2	1	1			1		1	14
1936	2	1	12			1				2	3					2		24
1937	1	1	9	1	1	6				2	1				1			23
1938			12		2	7		1		2	5	3			1			38
1939			10		3	1				2	4	1						26
1940			12		3	1		1		2	2	1					1	29
1941	1		15	3		3				3	8	3					1	41
*1942	1	2	7		2					1	1	1						16
Total	13	10	123	10	16	48	2	7	5	21	48	10	5	1	1	27	3	350

* Includes only May degrees.

TABLE 19
DEGREES OF DOCTOR OF PUBLIC HEALTH AWARDED

Year	Number
1924	1
1927	1
1928	1
1930	1
1939	1
1942	1
Total	6

TABLE 20
DEGREES OF DOCTOR OF ENGINEERING AWARDED (*Discontinued after 1918*)

Year	Electrical Engineering	Electrochemical Engineering	Total
1910	1	—	1
1914	1	—	1
1916	1	—	1
1917	—	1	1
Total	3	1	4

TABLE 21
SUMMARY OF DEGREES AWARDED (1868-1942)

Bachelor of Science	18,464
Bachelor in Architecture	177
Bachelor of Architecture in City Planning	17
Master of Science	4,442
Master in Architecture	151
Master in City Planning	22
Master in Public Health	9
Doctor of Philosophy	434
Doctor of Science	350
Doctor of Public Health	6
Doctor of Engineering (<i>Discontinued after 1918</i>)	4
Grand Total	24,076

DIRECTOR OF ADMISSIONS

During the year 2,080 applications were received for admission to the First Year Class, as compared with 1,844 in 1941. Notices of admission were sent to 856 of these applicants, of whom 731 were actually registered on the third day of the term, as compared with 647 on the corresponding date in 1941. This marked increase in the size of the entering class reflects a policy of making Institute training available to as many qualified applicants as possible in furtherance of the war effort. In spite of this, it has been necessary to refuse admission to a larger group than ever before.

Mr. Paul Chalmers of the Department of English and History, as in the preceding year, assisted in the work of the office, during the spring and summer.

The active coöperation of the alumni, particularly the Honorary Secretaries, has been utilized in the process of student selection. Close contacts have been maintained with these men, and visits to alumni groups have been utilized to develop fuller understanding of Institute policies in this field.

As in previous years, considerable attention has been paid to developing close contacts and personal acquaintance among the secondary schools. In conformity with this policy, the Country Day School Headmasters Association of the United States was invited to hold its annual meetings at the Institute, June 24-27 inclusive. Forty members attended and were entertained with the coöperation of numerous members of the staff and student body.

The number of secondary schools of certain types which sent graduates to the Institute in September, 1941, was as follows: military schools, 10; other boarding schools, 39; country day schools, 25; other day schools, 15; public high schools, 222; total, 311. Over the five-year period 1937-41, a total of 826 schools sent one or more students to the Institute. This extremely wide diversity of school (and regional) origins is a source of strength in the student body, though it increases the difficulty of maintaining close relations with schools.

The Admissions Office has continued to coöperate with the Army Air Forces, the Navy, and the Weather Bureau in recruiting qualified candidates for the one-year graduate course in

meteorology which the Institute, as well as certain other universities, is offering.

A total of 40 students (compared with 29 in 1941) were admitted with advanced standing in 1942 from the 11 colleges comprised in the Coöperative Arrangement with the Institute. Of these 23 (compared with 11 in 1941) entered under the exact terms of the three-year, two-year plan.

B. A. THRESHER.

CHAIRMAN OF COMMITTEE ON SUMMER SESSION

The registration of students in the Summer Session was 1,338. In addition to the regular Summer Session subjects and the summer surveying camp, 430 seniors were in attendance under the accelerated program. Special programs were offered for graduate students and special investigators in various fields, and conferences were scheduled in Spectroscopy, Fire Protection Engineering, and Applied Mechanics. Other conferences were planned but it seemed best to cancel them because of the restrictions on transportation. Nine hundred and fifty-five students were registered under the ESMDT and ESMWT programs.

The tenth conference on Spectroscopy and its applications was held on July 20, 21, and 22, under the joint sponsorship of M. I. T. and the Optical Society of America. The total attendance was 302, which was greater than that of any previous conference. Earlier in the year there was some doubt as to the wisdom of holding this conference, but the record attendance and the enthusiasm expressed more than justified the effort of Dean George Harrison in arranging it.

Because of the urgent need for education regarding fire protection, the Department of Building Engineering and Construction and the School of Architecture, in coöperation with the National Fire Protection Association, sponsored a conference on Fire Protection Engineering on June 22, 23, and 24 with registration open to secondary school teachers, industrial and consulting engineers, architects, building officials, fire chiefs, and civilian defense officials. Professor Walter Voss was in charge of the arrangements. Papers pertinent to the conference were presented by President K. T. Compton, Professors

E. H. Schell, E. R. Schwarz, A. R. Davis, W. C. Voss, H. R. Staley, F. J. Adams, J. E. Burchard, T. R. Camp, and Dean W. R. MacCornack of the Institute staff. Important phases of the problem were covered by Horatio Bond and F. R. Moulton of the National Fire Protection Association, Harvey C. Abbott of the New England Fire Insurance Rating Association, A. L. Brown of the Associated Factory Mutual Fire Insurance Co., N. J. Thompson of the Factory Mutual Laboratories, Dean Ackerman of Connecticut State College, and S. J. Pope, Chief of the Boston Fire Department. The papers and discussions will be printed and distributed to other areas so that a pattern for Fire Protection Engineering information may be available to other communities.

The ninth national meeting of the Applied Mechanics Division of the American Society of Mechanical Engineers was held at the Institute on June 19, 20, and 21 with an attendance of 90. Professor Joseph Keenan was in charge of arrangements. Staff members participating were Dean E. L. Moreland, Professors W. M. Murray, C. W. MacGregor, A. V. deForest, F. M. Lewis, A. W. Adkins, Messrs. A. H. Shapiro, G. Ellis, F. B. Stern, Jr., Dr. A. J. Durelli, guest from Buenos Aires, and Dr. G. de Santillana.

The program in Photoelasticity has been considerably expanded. For the past two summers it has been given for the benefit of men from industry, but this summer an additional course was offered for seniors which attracted 16 men, filling the laboratory to capacity.

A program in City and Regional Planning designed primarily to meet the needs of those actively engaged in related professional fields was offered, attracting participants from seven states. Planning agencies represented were the New York Regional Plan Association, the New Haven City Plan Commission, and the Henrico County (Va.) Planning Commission. The co-sponsor was the American Society of Planning Officials.

Twenty graduate students were admitted to programs leading to the Master's degree or a certificate in the field of Public Health. These students are preparing for work in public health administration, public health bacteriology and health education with either military or civilian health services where needs

for public health personnel have been expanded because of the war effort.

Other regular summer courses in Textile Testing and Industrial Statistics were well attended.

The registration at the Summer Surveying Camp was more than last year with an enrollment of 38. Of this number, 31 were regular Institute students.

R. D. DOUGLASS.

THE LIBRARIAN

The Institute Library, with an estimated 364,022 volumes, ranks thirty-sixth in size among the college and university libraries of the country. The year's increment of 7,945 volumes remained at a low level largely because of the difficulty in obtaining books and periodicals from Axis-controlled countries. This reduction in foreign purchases resulted in unused balances which, added to the Library Growth Fund, brought that backlog account to a total of \$11,976.38. This fund, which has proved most useful in building up the collections in fields not otherwise adequately provided for, will be a valuable asset when the time comes, after the war, to fill in the gaps in our foreign periodical and book collections.

A noteworthy and timely addition by gift was a 72-volume set of Diderot's *Encyclopédie*, fourth edition, 1778-81, from Edward H. Davis, '01. By coincidence there came also a volume of plates of the original folio edition, 1762, from Charles F. Wing, '98, and a two-volume set of the *Dictionnaire Encyclopédique des Mathématiques*, 1789, edited by Diderot's collaborator, d'Alembert. The latter work was included in a notable gift of nearly 400 books and bound periodicals, chiefly in mathematics and astronomy, from Miss Alice B. Gould, '91, which had belonged to her father, Benjamin Apthorp Gould, a prominent American astronomer of his time.

From the Friends of the Library came a set of Brunet's *Manuel du Librarian*, fifth edition, and supplement, 1860-80, a valuable bibliographical record of notable books from the earliest days of printing.

Some further account of these and other gifts appears in *Footnotes*, the bulletin of the Friends of the Library, Summer

1942. Our thanks are due also, however, to many other thoughtful and generous donors, notably Dean Prescott, Mr. MacKinnon, Professors Spofford, Woodman, and Locke, Mrs. E. A. Averill, Mr. Arthur Gray, Mrs. A. H. Imlah, Mr. Morris F. Shaffer, Mr. David B. Weston, and Harvard College Library; also to several professors and alumni who donated their own publications for the Technology Collection.

The circulation of books for home use, which reached its peak in 1939-40, again fell off to a total of 88,778 (Central 32,685; branches, 56,093). The reasons, as seen by the Library staff, all stem from the war and the Institute's speed-up program, namely: less assigned reading, more laboratory work, less emphasis on theses, increased concentration on the most essential reading with more of it done in the libraries, less time for outside reading, and finally, graduation in April. To these might be added the absence of many of the Faculty on war research and the scarcity of foreign literature.

Nevertheless, there was increased circulation in the Aeronautics, Eastman and Walker libraries, in the last-named an increase of 30 per cent, due to the intensive use of this branch by the Department of English and History in connection with course work. Much of this increase accounts in large part for the corresponding drop in the use of the same class of material at Central. At Central there were, however, increases in two subjects: chemistry and mathematics — the latter due to the purchase of many readable books in the subject out of the William Lowell Putnam prize fund.

All the libraries report increased use within the library and much reference work, both in the room and by telephone. The Reference Department at Central handled 3,783 telephone calls, an increase of 12 per cent over last year. Books lent to business firms, 1,310; to other colleges, universities, etc., 878; a total of 2,188. For our own men 392 volumes were borrowed from other libraries. Photostats obtained for business firms, 321; for other colleges, 8; for alumni, 20; for M. I. T. staff and students, 59; for outside individuals, 18. Bibliographies prepared, 22.

Extra pressure was felt, of course, because of the great development in war research. Members of the war research

staff were accorded equal privileges with our own men and received attention especially from the Vail Librarian. Service was rendered daily to persons from outside the Institute: to our own alumni, to students and faculty of other colleges and universities, to secondary school teachers, to representatives of the Watertown Arsenal, navy yards and stations, and the Chemical Warfare Service, to Federal, State and municipal departments, to consulting engineers, and to physicians and nurses.

The Vail Librarian reports steadily increasing service to research staffs of special laboratories and courses connected with the defense and war programs of the Electrical Engineering Department. Reference work for these groups amounted to 13½ per cent of the recorded requests. Included was special service to Army and Navy officers taking ESMDT courses. The Electrical Engineering Thesis List, first prepared by Mrs. Katharine Maynard in 1929, was revised by Mrs. Lane to cover the years 1902-40 and appeared as Contribution 243 of the Electrical Engineering Department. A bibliography of source materials was accepted for inclusion in *Ultra-high Frequency Techniques* by Brainerd, Woodruff and others.

On July 1, 1941 the Aeronautics Library, which had been maintained by the Department of Aeronautical Engineering, was taken over as a full-fledged branch of the Institute Library with a trained librarian from the Library staff in charge. There was an increase of nine per cent in the circulation of books, and a noticeable increase in the use of books within the Library.

In the Dewey Library Mr. McNay, Engineering Librarian, gave four lectures to students on bibliographical sources and spoke on report writing at Northeastern University. Monthly lists of current literature in engineering and reviews of technical books were prepared and mailed to 110 staff members, a service which has met with much commendation. The Economics collection was used intensively by the new graduate student group in Economics. The Economics Librarian, Mrs. Stone, was consulted frequently by a visiting professor in connection with the formation of a business administration library at Boston College.

The Eastman Library registered over 1,500 users, the

increase coming especially from the Radiation Laboratory staff and other war research workers. There was noticeable attendance by men from all courses who needed refresher work in mathematics and physics. The general circulation increased over last year, and it was necessary to keep open evenings during the summer.

For the first time Lindgren Library was kept open evenings and Saturday afternoons, and the attendance justified the experiment. The Lindgren Librarian lectured on bibliographical sources to juniors and seniors in Metallurgy courses. The file of Brutcher's Translations was taken over from the Department of Metallurgy and is now maintained currently as a feature of the library service.

There was an astonishing increase in the use of Walker Memorial Library, due chiefly to reading requirements in freshman and sophomore history subjects and in general studies given by the Department of English and History. The total number of books lent, both one- and two-week and overnight, was 33,609, representing an increase of 30 per cent over last year. The use of the library in connection with course work undoubtedly stimulated its use also as a recreational library. The work of transferring history books from Central has been completed, and the collection now contains about 16,000 volumes. About \$200 worth of piano and violin music was added which may be borrowed for home use.

The new library building project received further impetus during the year. Professor L. B. Anderson of the School of Architecture assigned it as a problem to eight graduate students. Three studies were made, and the resulting plans and sketches were shown and explained successively to the Library staff, the Library Committee, the Friends of the Library, and the Visiting Committee.

The Executive Board of the Library Committee, consisting of Professor Lessells, Chairman, and Professors Huntress, Roberts, Barrow, Brown, and Weber, and the Librarian *ex officio*, held four meetings, including one in the Architectural Exhibition Room for the purpose of inspecting the students' studies for a new library building. At this meeting members of the Advisory Board were present.

The members of the Visiting Committee were Dr. Harlow Shapley, Chairman, Thomas C. Desmond, '09, and J. Willard Hayden for the Corporation, Donald W. Kitchin, '19 and C. V. Briggs, '21, for the alumni, Milton E. Lord, Director of the Boston Public Library, and Dr. C. C. Williamson, Director of Columbia University Library. The committee held an encouraging meeting on March 11. It discussed principally the need for a new library building and heard Professor Anderson explain the students' plans and sketches. Mr. James R. Killian, Jr., Executive Assistant to the President, Raymond Stevens, '17, Chairman of the Friends of the Library, and members of the Library Committee were also present by invitation.

The Friends of the Library showed their continued interest by occasional gifts of books, as already mentioned. The war situation prevented activities like those of the preceding year, but *Footnotes* No. 4, Summer 1942, was issued on schedule.

A new edition of the Library handbook, *How to Use the Institute Library*, was issued at the beginning of the fall term and distributed to all new students. The Vail Librarian, Mrs. Lane, contributed an article entitled, "Standardization of library practices: a post-war project," to the periodical *Special Libraries*, May-June 1942. Her revised edition of the Electrical Engineering Thesis List has already been mentioned.

The Staff Association held six meetings, two of which were addressed respectively by Professor Schwarz and Professor Magoun.

Members of the staff took active interest in the work of professional societies. Mrs. Lane assisted in the organization of an Engineering School Librarians' committee of the New England section of S. P. E. E., and was made chairman; and the Librarian and others attended both that meeting and the national meeting of S. P. E. E. at Columbia in June, at which a national committee similar to the New England committee was authorized. Miss Chamberlain attended the midwinter meeting of the American Library Association at Chicago in December and was made a member of a committee on organization of an Engineering School Libraries section within the Association of College and Reference Libraries.

Earlier in the report reference was made to the many

classes of outside users whom the Institute Library serves in addition to our own clientele. Why do these readers come? Because the Institute Library is the greatest storehouse of scientific and engineering information in New England, and its staff recognize an obligation to render such service generously to the limit of their time and ability.

W. N. SEAVER.

DIRECTOR OF DIVISION OF INDUSTRIAL COÖPERATION

The only noticeable change in the Division this year over last has been the substitution of the word "war" for "defense" made in December, 1941, with a further enlargement of projects and personnel. This phase is covered in President Compton's report.

THE PLACEMENT BUREAU

Alumni Placement. Thirty per cent of the 966 requests for men were not limited in the numbers of individuals required. One hundred and three jobs were with the Army and Navy. There are almost no unemployed men on the active list. Thirty-five hundred recommendations were made during the year.

Undergraduate Placement. A new high in both demand and men placed, as of graduation, was set this year. The numbers going into Army and Navy give an indication of the Institute's closeness to the war.

The call for men with training in science and engineering for industries engaged in war activity was, as in 1941, far greater than the number available. With few exceptions this year's graduates went with industries on jobs vital to the war effort. It is probable that extensive training programs for new men are out for the duration.

A placement survey taken before graduation follows:

	<i>Individuals</i>	<i>Placed</i>	<i>Per Cent Placed</i>		
			<i>1942</i>	<i>1941</i>	<i>1940</i>
Bachelors.....	469	453	96.5	93.9	70.7
Masters.....	149	146	98.0	96.8	88.8
Doctors.....	37	34	91.9	95.8	70.8
	<u>655</u>	<u>633</u>	<u>96.7</u>	<u>94.5</u>	<u>76.0</u>

Employment of men by fields follows:

	<i>No. of Men</i>
1. Army.....	149
2. Navy.....	94
3. Petroleum and Chemical Industry.....	63
4. Aeronautical.....	40
5. Research.....	36
6. Teaching.....	34
7. Electrical Equipment.....	29
8. Further Study.....	28
9. Shipbuilding.....	25
10. Machinery, Tools, and Instruments.....	18
11. Federal, State, and Subdivisions.....	15
Utilities.....	15
12. Steel All.....	13
13. Radio.....	8
14. Metallurgy.....	7
15. Fourteen Other Fields.....	25
16. Foreign Students.....	34
17. Unemployed.....	22
Total.....	655

As might be expected, the number of commissions in Army and Navy increased to 243 as compared with 168 in 1941 and 69 in 1940. There was a marked decrease in the dispersion. One hundred and thirty employers hired 571 men this year as compared to 191 taking 563 last year.

	<i>No. of Men</i>
United States Army.....	149
United States Navy.....	94
M. I. T. (Research and Teaching).....	52
1 company.....	18
United States Government.....	15
1 company.....	13
1 company.....	9
1 company.....	7
5 companies.....	6 men each
4 companies.....	5 men each
3 companies.....	4 men each
13 companies.....	3 men each
15 companies.....	2 men each
83 companies.....	1 man each

Undergraduate Summer Jobs. Shortly after the declaration of war, the Faculty passed the rule that undergraduates would be requested to work in a manner that would advance them professionally during the summer vacation.

A canvass was made of industries with whom the Institute had past friendly relations. As a result of this canvass, qualification records of the sophomore class were submitted to industry, and by June 11 only seven members of the sophomore class were not either employed or attending summer school. These individuals reported at a later date that they were employed.

This is a most gratifying result of an experiment of this character, and it is believed that it will be of enormous benefit to the individuals employed by industry.

It is only proper to make a grateful acknowledgment to industry for the coöperation and for the trouble they took to assist in this training.

NATHANIEL McL. SAGE.

SECRETARY OF THE SOCIETY OF ARTS

The Society of Arts Lectures for 1941-42 took place after war had struck our country directly. This fact, coupled with the topics discussed, stimulated requests for tickets from various defense groups, from Army and Navy personnel and the Air Corps. The uniforms of our armed forces were in evidence in all of the audiences. The lectures were well attended, and the usual number of people gathered around the speaker at the close of each talk to ask questions and to view the exhibits more closely.

The program of lectures, delivered in 1941-42, follows:

Friday, December 12; Saturday, December 13; Sunday, December 14.

"Incendiarism and the Control of Fire," by Arthur R. Davis, Associate Professor of Inorganic Chemistry.

Friday, January 9; Saturday, January 10; Sunday, January 11.

"The Art and Craft of Pottery," by Frederick H. Norton, Associate Professor of Ceramics.

Friday, February 13; Saturday, February 14; Sunday, February 15.
"The Engineering Development of Airplanes for Private Flying,"
by Otto C. Koppen, Professor of Aeronautical Engineering.

Friday, March 13; Saturday, March 14; Sunday, March 15.
"Three-Dimensional Photography," by John T. Rule, Associate
Professor of Drawing and Descriptive Geometry.

EVERY A. ASHDOWN.

CHAIRMAN OF THE COMMITTEE ON THE MUSEUM

Because of the many effects of the war effort, the Museum Committee has made comparatively few advances in permanent installations. Through the continued gratifying interest of staff members, however, and through the coöperation of outside agencies, the Committee has been able to run a series of varied temporary exhibits in the lobbies of Buildings 7 and 10. Of unusual interest was the favorable response from both staff and student body to two art exhibits, one from the state branch of the American Artists Professional League and one from the Boston Society of Water Color Painters. Though these exhibits were an experimental departure from our established policy, yet we feel now that it would not be amiss to vary our scientific and technical exhibits with occasional cultural diversions.

Gifts to the Francis Russell Hart Nautical Museum included: two letters of historic mercantile interest from Mr. John Heard of Cambridge; a model of a Brazilian catamaran from Lieutenant José Cruz Santos and Lieutenant Aniceto Cruz Santos of the Brazilian Navy, both M. I. T., '42; photographs from Mr. Harrison S. Taft, Captain Winthrop Wetherbee, and Mr. William Bowman; and plans of ship machinery from Mr. T. S. Andrews of the Bethlehem Steel Co. The Secretary of the Commonwealth has loaned us from his archives several interesting documents pertaining to the maritime interests of the late eighteenth century.

Mr. Dard Hunter has purchased the equipment of the long defunct Boston type foundry. Much of this material will be installed in the Hunter Museum, but some of the larger type-casting machines will be given the Chinese after the war in

furtherance of Mr. Hunter's plans to help in the restoration of Chinese industrial life.

The chairman of the Committee became last spring the chairman of the Committee for the Protection of Valuable Objects, a branch of the Massachusetts Committee on Public Safety which is in contact with museum and library officials throughout the state for the purpose of establishing uniform procedures for the protection of our cultural and historical resources during the war.

A. C. WATSON.

MEDICAL DIRECTOR

During the past year the Medical Department has made gratifying progress. There was a marked increase in the number of visits to the clinic, due in part to the addition of two much needed departments — the Psychiatric Clinic and the Dental Department, and in part to the Defense Program.

In the Psychiatric Clinic, the demands upon Dr. Murray's time were so great additional clinics were held. A total number of 349 visits were made to the clinic, and 223 interviews were granted. Four cases were so severe as to require withdrawal from the Institute, and two were referred for institutional care. This year's experience indicates further growth and usefulness of this Department.

The Dental Clinic was opened in September 1941 under the charge of Dr. John J. Gibbons. Nine hundred and forty-one new students received a careful dental examination as a part of their required physical examination. There were 393 visits for oral prophylaxis and 1,689 treatments were given for acute conditions — toothache, gingivitis, etc. There were also 91 dental X-rays taken. A total of 3,023 visits were made to the clinic. With its splendid equipment, the clinic has greatly added to the services rendered by the Medical Department.

In the Outpatient Clinics 29,178 visits were made. Of this number 9,081 were surgical cases and 8,904 medical cases. Twenty-one contagious diseases were treated and isolated. Physical examinations totaled 3,727. This number includes students, employees, and members of the Faculty with the addition of the Enlisted Reserve Corps examinations. There were

1,484 X-rays taken. Physical defects found upon examination this year showed an increase of 458, the total being 1,183. The character and most important defects were as follows:

Abnormal Blood Pressure.	66	Hay Fever	26
Albuminuria	62	Infantile Paralysis (old)	13
Color Blindness	124	Pulmonary Infection*	23
Defective Hearing	31	Overweight	11
Defective Heart	29	Underweight	89
Defective Vision	490		

* Three were active tuberculosis.

The number of patients sent to outside consultants was 854:

Eye Specialists	694	Other Specialists	25
Ear, Nose and Throat Specialists	53	Skin Specialists	82

The days lost per student averaged 1.7, and the hospital days in the Infirmary numbered 2,017. The average height per student was 68 inches, weight 158½ pounds.

Two deaths occurred during the year, one caused by coronary thrombosis and the other by pneumonia and empyema, complicated with a brain abscess.

There were 494 bed patients in the Infirmary this year. The outpatient visits show an increase of 138 over last year, the total number being 1,393. The sum total including bed patients and outpatients was 1,887, an increase of 75 over last year.

In the Pathological Laboratory a total of 930 tests were made: Urinalyses 503, Blood Counts 232, Hinton and Wassermann tests 97.

The continued growth of the Medical Department, which statistics indicate from year to year, emphasizes our pressing need for more room. We are already overcrowded and will be increasingly so if our yearly growth is to continue. The Medical Department must expand to render its proper service.

It is perfectly obvious that more attention should be given to the vision of the students. Of all defects found this year, "defective vision" showed the largest number. Six hundred and ninety-four patients were sent to eye specialists throughout the year, and there were a large number of eye injuries, serious

in nature, for which oculists visited patients in the Infirmary. It is my hope that an eye clinic may be organized. An eye examination of each entering student by a competent ophthalmologist would prove of intrinsic value. Also a scientific survey of lighting facilities in students' rooms and an educational program on the proper care and use of the eyes are matters of great importance for Technology.

GEORGE W. MORSE, M.D.

CHAIRMAN OF COMMITTEE ON
SPECIAL TRAINING PROGRAMS FOR NATIONAL DEFENSE

Congress replaced the Engineering Defense Training Program with the Engineering, Science, and Management Defense Training Program by the Act of July 1, 1941 with an appropriation of \$17,500,000 for short courses of college grade in engineering subjects, chemistry, physics, and production supervision; likewise in July, 1942, this program was replaced with the Engineering, Science, and Management War Training Program with an appropriation of \$30,000,000. During the summer of 1942, training has been administered under the last two programs.

During the past year, 46 courses have been given under the ESMDT, and 1,727 students have received certificates signifying that they have satisfactorily completed a course of study extending over a period of four to 16 weeks, either full time or part time. In addition, 334 students are now enrolled in ESMWT and ESMDT courses which are still in progress. The ESMDT program has been carried on at a cost of approximately \$200,000.

Full-time courses of 16 weeks duration were given to Naval officers in Naval Architecture, Aircraft Engines, and Aeronautical Engineering, and full-time courses of 12 weeks duration were given to Army and Navy officers in Ultrahigh-Frequency Technique. A teachers' training course in Ultrahigh-Frequency was held at the Institute. For this course, 40 engineering schools were invited to send a member of their staffs for this training. Other full-time courses were for Civil Service employees in Naval Architecture and for civilians detailed here by the Naval Ordnance for programs in Degaussing. Twenty-two part-

time courses were offered to civilians who were in war work, 18 of which were given at the Institute, two at Beverly for a particular group of employees at the United Shoe Machinery Co., and two at Quincy for the Bethlehem Steel Co. Up to the present time 12 programs in Ordnance Inspection for the Watertown Arsenal have been completed.

The following table shows the distribution of the 46 courses offered under the ESMDT program and the number of certificates awarded.

<i>Name of Course</i>	<i>Certificates Awarded</i>
Advanced Engineering Drawing (part time).....	16
Advanced Mathematics (part time).....	21
Advanced Mechanics and Theory of Elasticity (Beverly) (part time).....	12
Aircraft Engines (Navy) (Third Course) (full time).....	30
Algebra and Calculus (part time).....	17
Applications of Metallography (Second Course) (part time)	26
Applications of Metallography (Third Course) (part time).	16
Applied Mathematics (Second Course) (part time).....	24
Applied Mathematics (Third Course) (part time).....	22
Calculus (part time).....	14
Chemistry of Powder and Explosives (Third Course) (part time).....	27
Concrete Design (part time).....	7
Degaussing Course for Naval Ordnance (First Course) (full time).....	18
Degaussing Course for Naval Ordnance (Second Course) (full time).....	14
Degaussing Course for Naval Ordnance (Third Course) (full time).....	8
Differential Equations (part time).....	12
Engineering Drawing (part time).....	31
Engineering Drawing (Second Course) (part time).....	37
Engineering Drawing (Beverly) (part time).....	16
Hull and Machinery Piping (Quincy) (part time).....	32
Hydraulics (part time).....	10
Naval Architecture (Civil Service) (Second Course) (full time).....	59
Naval Architecture (Civil Service) (Third Course) (full time)	59
Naval Architecture (Boston Navy Yard) (part time).....	16
Naval Architecture (Quincy) (Second Course) (part time)..	16
Ordnance Inspection in Cooperation with Watertown Arsenal (Sixth Course) (part time).....	35

<i>Name of Course</i>	<i>Certificates Awarded</i>
Ordnance Inspection in Coöperation with Watertown Arsenal (Seventh Course) (part time)	32
Ordnance Inspection in Coöperation with Watertown Arsenal (Eighth Course) (part time)	60
Ordnance Inspection in Coöperation with Watertown Arsenal (Ninth Course) (part time)	67
Ordnance Inspection in Coöperation with Watertown Arsenal (Tenth Course) (part time)	67
Ordnance Inspection in Coöperation with Watertown Arsenal (Eleventh Course) (part time)	75
Ordnance Inspection in Coöperation with Watertown Arsenal (Twelfth Course) (part time)	53
Practical Electronics (for Radiation Laboratory) (part time)	9
Safety Engineering (First Course) (part time)	41
Safety Engineering (Second Course) (part time)	38
Teachers' Training Course in Ultrahigh-Frequency Technique (Men assigned by universities) (full time)	40
Ultrahigh-Frequency Technique (M. I. T. Seniors) (part time)	61
Ultrahigh-Frequency Radio Technique (Army and Navy) (Second Course) (full time)	95
Ultrahigh-Frequency Radio Technique (Army and Navy) (Third Course) (full time)	113
Ultrahigh-Frequency Radio Technique (Army and Navy) (Fourth Course) (full time)	162
Ultrahigh-Frequency Radio Technique (Army and Navy) (Fifth Course) (full time)	71
Ultrahigh-Frequency Technique for Navy Post-Graduate Group (full time)	13
Ultrahigh-Frequency Technique for Employees of N.D.R.C. Radiation Laboratories (First Course) (full time)	57
Ultrahigh-Frequency Technique for Employees of N.D.R.C. Radiation Laboratories (Second Course) (full time)	43
Work Simplification (First Course) (part time)	18
Work Simplification (Second Course) (part time)	17
Total Number of Courses, 46; Total Certificates Awarded	1,727

		<i>Certificates Awarded</i>
Number of Courses open to Civilians.....	18	394
Courses with Watertown Arsenal.....	7	389
Courses with Bethlehem Steel Co.....	2	48
Courses with United Shoe Machinery Co.....	2	28
Courses for Boston Navy Yard.....	1	16
Courses for Army and Navy Personnel.....	9	524
Courses for Radiation Laboratory Employees.....	3	109
Courses for Civil Service Employees.....	2	118
Courses for M. I. T. Students.....	1	61
Teachers' Training Course in Ultrahigh-Frequency Technique.....	1	40
	46	1,727

Seven courses are now in progress under the ESMDT and ESMWT programs, and the numbers enrolled are as follows:

<i>Name</i>	<i>Number Enrolled</i>
Aeronautical Engineering for Naval Officers (full time)....	44
Aircraft Engines for Naval Officers (full time).....	43
Introduction to Aeronautical Engineering (for Women) (full time).....	15
Naval Architecture for Naval Officers (full time).....	69
Ultrahigh-Frequency Radio Technique (Army and Navy) (Sixth Course) (full time).....	151
Ultrahigh-Frequency Technique for Employees of N.D.R.C. Radiation Laboratories (Third Course) (full time)....	12
Total Number of Courses in Session, 7; Total Enrollment .	334

The sixth bulletin describing the various ESMWT programs to be offered by the six colleges in this area has been released. The offering of this Institute will be full-time courses in Naval Architecture and Aeronautical Engineering for Naval officers, Ultrahigh-Frequency Technique for Army and Navy officers, Ordnance Inspection for Watertown Arsenal, Advanced Engineering Drawing, Concrete Design, Metallography, and Work Simplification for war workers.

It is estimated that training will be given to more than 3,000 during the coming year.

R. D. DOUGLASS.

SCHOOL OF ENGINEERING

AERONAUTICAL ENGINEERING

In order to permit undergraduate students to obtain industrial experience in the summer, the curriculum in Aeronautical Engineering has dropped previously required summer subjects in shop practice with plant visits and has substituted a subject in the machine tool laboratory during the first term of the sophomore year and an introductory subject in aeronautics in the second term. In order to do this, the time formerly allotted to a foreign language has been used. This permits professional training to begin earlier, which has long been felt to be desirable. The foreign language requirement is considered at this time to be of secondary importance.

As the first term senior professional subjects, now given in the summer, have been prerequisites for graduate studies in Aeronautical Engineering, the graduate course will begin in September as usual. In view of an expected decrease in the demand for graduate studies and to free Professors Koppen and Newell for war work, two terms of graduate airplane design and one term of graduate structures will not be offered next year.

The restriction on enrollment of sophomores for Course XVI was lifted from 40 to 50 in June, 1941 and from 50 to 60 in June, 1942. Applications continue greatly to exceed the number that can be accepted. It is believed that present numbers are an absolute maximum, and any further expansion would require substantial increases in staff, in space, and in equipment.

Special Programs. An intensive course in Aeronautical Engineering was given in the summer of 1941 to 38 Naval officers and in the summer of 1942 to 44 Naval officers.

In the summer of 1942, a special course for graduates of women's colleges was inaugurated. The objective was to prepare women for sub-professional service as aeronautical engineering assistants in aircraft factories. The twelve-weeks course included mechanics, drawing, computation and applied mathematics, and an introduction to aeronautics.

Instrumentation. Instrumentation work has expanded notably during the past year. The teaching staff of this division now consists of one professor, two assistant professors, two instructors, two assistants, and one mechanic.

Approximately 250 students have been registered in one or more of the eight subjects offered. Of this number 180 have been government meteorological students, and 12 have been Naval officers studying courses especially adapted to Naval problems.

Research projects under Professor Draper's direction for various government agencies have occupied the full time of a group somewhat larger than the teaching staff. Space restrictions limit the amount of such war work that can be handled.

Structures. Professor Newell has completed a report on tests of some 200 stainless steel panels for the War Department and has completed the manuscript for the third edition of the standard text, *Airplane Structures*, by Niles and Newell.

Wind Tunnel. The Wright Brothers Wind Tunnel continues to be engaged continuously on research and testing for the aircraft industry. The demand on the tunnel by the industry continues to increase. In the past year use has been made of the new equipment for the testing of powered models. This equipment has greatly increased the scope of our aerodynamic testing and has made it possible to undertake fundamental investigations in cowling and cooling of engines. Extensive use has been made of the electric strain gage devices developed for the measurement of control forces on model airplanes.

The tunnel has also contributed its facilities to a number of Institute projects in connection with the war effort but not directly concerned with aeronautics.

Research projects for the Army and for the Navy have occupied Professor Rauscher and a small staff of special assistants during the past year. Results should lead to a better understanding of high speed flight.

J. C. HUNSAKER.

BUILDING ENGINEERING AND CONSTRUCTION

A significant addition to the curriculum was approved during the year. Two options are now available to students in

Building Engineering and Construction. The curriculum for Option 1, dealing with "Heavy Construction," is essentially the same as the curriculum for the course during the past few years. The curriculum for Option 2, dealing with "Light Construction," is arranged to provide considerable business training and is aimed particularly at the engineering and marketing aspects of housing. Both options take the same work during the first two years after which differentiation begins, and both lead to the degree of Bachelor of Science in Building Engineering and Construction.

The work on masonry materials has continued under the direction of Professor Staley, and the National Lime Association continued its support of this work. Methods of curing and methods of test for mortars have occupied considerable of our time. The long-range tests on the effects of lime on concrete are now complete, and the work of coordination and integration for a final report has been started. The Timber Engineering Company has supported a departmental research on the stress distribution in timber around split-ring connectors under load. This work was under the direction of Professor Dietz.

Three D. I. C. projects have been carried on by our staff. Professor Staley has completed the initial phase of a study of the characteristics of a new lime processing procedure. This was sponsored by Adhesive Lime, Ltd. Professor Dietz has collaborated with members of the staff of the Department of Electrical Engineering on the behavior of wood, synthetic resins, and resin-wood combinations in high-frequency fields. This work which was sponsored by N. A. C. A. is now complete. A beginning has been made upon the study of the fatigue characteristics of plywood and laminated wood, bonded with synthetic resin adhesives or impregnated with such resins and compressed during curing under high heat and pressure. This project is sponsored by the Resinous Products and Chemical Company and is under the direction of Professor Dietz.

The "dome" tests started last year have been completed, and results so far tabulated and studied seem to give us the basis for a rational approach to the effect of concentrated loads in thin-shelled domes. This project was conducted jointly

by all members of the staff and was under the direction of Professor Voss.

During the year Professor Voss has been made Chairman of Committee C-7 of the A. S. T. M., and Professor Staley has assumed the chairmanship of a sub-committee of Committee C-7. Professor Peabody has continued his work on the Joint Committee and the A. C. I. Committee on Reinforced Concrete Building Code. At the National Lime Association's Convention, Professor Voss presented a paper on "Effects of Lime Replacements on Concrete," and Professor Staley presented his paper on "Characteristics of Lime Hydrate." Papers were presented at the A. S. T. M. Convention by Professors Staley and Dietz, the former on "Curing of Masonry Motors," and the latter on "Stress-Strain Relationships in Douglas Fir Beams."

In connection with the Aerial Bombardment Conference sponsored jointly by ESMWT, Harvard University, Northeastern University and the Massachusetts Institute of Technology, Professor Voss presented papers on "Classification of Buildings for Shelter Zone Requirements" and "Shelter Zones in Existing Buildings and Structures." At the summer conference on "Fire Protection Engineering," sponsored by the Department of Architecture and the Department of Building Engineering and Construction, Professor Voss presented a paper on "Homes and Business Buildings" while Professor Staley spoke on "Exits, Fire Walls and Construction Details."

Professor Dietz has been granted the necessary time to work with the Forest Products Laboratory in the development of wooden aircraft construction. Professor Voss has continued his activities in connection with O. C. D. and the Massachusetts Committee on Public Safety and is a member of the staff at the Civilian Protection School conducted by the United States Army at Amherst College. He also served as a member of the staff of the first bomb-disposal school recently conducted at Fort Devens, Massachusetts, under the direction of the First Service Command.

WALTER C. VOSS.

BUSINESS AND ENGINEERING ADMINISTRATION

The declaration of war found practically the entire staff of the Department collaborating in a unified war production project. Earlier field surveys had revealed that a considerable number of progressive manufacturers in the New England and Atlantic States were well in advance of the typical producer in the manufacture of materiel for war and that already the rudiments of a technique of war production were emerging. With the results of previous field studies as preliminary guides, the general problem of wartime manufacture was divided into basic elements, each of which was assigned to a given staff member for survey. Twenty-nine graduate students and seniors were assigned these projects for intensive field investigation and report during the first term of the school year. During this period over 200 industrial organizations, military and naval establishments were interviewed. Initial findings formed teaching material introduced immediately into the second term required senior subject, Industrial Problems, where current emphasis was placed upon war production methods. Some indication of the body of data directly utilized for teaching purposes is found in the fact that 300 pages of new class notes were prepared and issued therefrom during the second term to students and to coöperating industrialists and military officials. At this time, further field investigations and verifications were made in view of the rapid developments in the state of the art. Final findings have been coördinated and summarized into form for general distribution and placed in the hands of a publisher. The new text entitled *Handbook of War Production* will serve as a comprehensive reference for classroom use with the present seniors. The direct value of the departmental training in this and related subjects is already being evidenced by letters received from industrial and military officials with whom departmental graduates are serving.

The unusual extent of this field investigation was made possible by a grant of funds from the Office of Emergency Management to defray traveling expenses involved. In this connection, over 8,000 miles of travel were involved in obtaining the source-data called for by the survey.

A second project completed during the year is the publica-

tion of a brochure dealing with departmental trends and developments over the past 25 years. Drawn from statistics submitted by more than 1,200 of the graduates of the Department, the record substantiated earlier indications that the departmental graduate finds a period of 12 to 15 years normally essential to the attaining of ultimate responsibilities as an industrial administrator, proprietor or executive. Among other model characteristics of these graduates there was revealed the statistical tendency to marry two years after the undergraduate diploma was received, to beget the first child in another three years, a time at which the building of a home and the gaining of an interest in the business were also characteristically consummated.

Professor Fiske was elected President of the National Association of Cost Accountants, an honor bestowed upon but two other collegiate faculty members during the 26 years in which this association of industrialists has been in existence. Professor Schaefer was reelected to the Masonic Grand Mastership of Massachusetts, which for the second time establishes him as ranking Mason in this country. Professor Fernstrom, on leave of absence for the duration as Vice-President and General Manager of the North Carolina Shipbuilding Corporation, is reported by the newspapers to be well past the production of one \$1,800,000 freighter per week and well toward his aim "to build more pounds of ship per day, per way, per man than any other shipyard in the United States." Professor Robnett, in his position as Vice-President of the Boston Chapter of the National Association of Cost Accountants, has been in charge of their study-group activities. Professors Cunningham and Tallman have given a portion of their time to a special analysis of new product development problems, part of a larger research relating to post-war activities conducted under the auspices of the Department of Economics and Social Science. Professor Goodwin, in addition to evening classes in executive training, has accomplished through work simplification marked increases in productivity in two organizations whose products are critically essential to the war effort.

In accordance with the Institute policy that students experience industrial employment during interim summers, the

Placement Division, in coöperation with the students and the Department, found it possible to place all of the present sophomore students in positions during the summer. The unusual value of these activities in affording background to undergraduates engaged in the study of manufacturing principles has been amply demonstrated in earlier experiments with this educational device which now has been extended to students in all departments of the Institute.

A fifth grant of funds from the Alfred P. Sloan Foundation of New York permitted again a nation-wide competition for executives of tested industrial experience and ability to undertake a twelve-month period of intensive administrative training. The pressure of wartime demand in industry for men of this calibre proved too great to permit the selection of a suitable group, and the program was, therefore, temporarily discontinued. Since the beginning of the so-called "Sloan program," the Alfred P. Sloan Foundation has granted to the Department a total of over \$100,000 to carry forward this adventure in the preparation of young men for ultimately advanced positions of industrial responsibility. The exigencies of the present emergency served to reflect in extraordinary degree the regard with which this undertaking was viewed by the many organizations whose candidates would normally be participants in the annual competition. We may only hope that conditions will permit this educational experiment to be renewed. Conversely, the war effort will give unusual opportunity to measure the potential worth of those recipients who received the advantages of this training and to evaluate the precise areas in which this service to industry and society may be advanced when the opportunity again presents itself.

In concluding this report, it should be stated that by far the greatest departmental development during the past year has been intangible in nature. The year has been one of transition if not of conversion in viewpoint. The seriousness of our current responsibilities to students has been impressed upon each member of the departmental staff, and with this has come an even greater willingness to give of time and effort to serve the individual as well as the group needs of the undergraduate and graduate student body. As an estimate, close to twice the

amount of time has been given to individual student conferences in comparison with past years in view of the many crucial decisions facing the typical upperclassman today. Again, the significance and value to the undergraduate of closer faculty-student relationships out of school hours have become most apparent. The inevitable cost of such activities has been a major problem for which no immediate solution has thus far been found.

ERWIN H. SCHELL.

CHEMICAL ENGINEERING

The work of the Department has been dominated by the impact of the war situation. Professor Whitman has gone to the War Production Board; Professor Weber has been assigned to the Chemical Warfare Service Development Laboratory; Professor Robinson is on active duty with the Ordnance Department, and Professor Bergantz with the Chemical Warfare Service of the Army. While the remaining faculty members are still on the staff, all of them are on war work, several of them devoting a high percentage of their time to it. To meet this emergency, four men were added to the faculty staff at the end of the school year. Further readjustment was made necessary by the shift from graduate to undergraduate enrollment and by the acceleration in the undergraduate program. This involved temporary suspension of the Honors Group plan, but, because the importance of its emphasis is, if anything, enhanced in the emergency, the option in Industrial Relations has been continued.

The work of the School of Chemical Engineering Practice has likewise been modified to meet the war situation, a change in which the close coöperation of plants where our stations are located has been of the greatest help. Student assignments in the plants are direct war problems or tasks designed to support the contributions of the coöperating companies to the war effort. It has been necessary to organize four separate programs. Of these, a new integrated, five-year curriculum, X-C, was established in coöperation with the Military Science Department to furnish to Reserve Officer Training Corps students the

specific technical training needed for their future work in the Army.

The Department's new building was completed during the year and taken over by the Development Laboratory of the Chemical Warfare Service. This made it possible for that Laboratory to release for educational purposes the departmental space which it had occupied at the close of last year.

Research Program. Because the research energies of the Department have been thrown wholeheartedly into the war effort, the general research program has been seriously curtailed. The results achieved represent largely the culmination of work already under way rather than the initiation of new projects.

On the engineering side, in the field of heat transmission, the vapor binding of liquids boiling inside tubes may be due to overheated walls or to dispersion of unvaporized liquor as spray in the vapor traveling through the tubes. In a continuation of the study of pools of boiling liquid, the critical temperature differences were determined for a number of new compounds. A study of the partial condensation of mixed vapors was likewise continued and the experimental techniques perfected to a point such that future progress should be rapid.

The experimental and theoretical studies of diffusional processes and their correlation with the phenomena of heat transfer have been continued, though on a necessarily restricted basis. Results do, however, indicate new important data on the mechanism of mixing of liquids which should serve as the basis for future constructive work. The use of stream double refractions of clay suspensions was further expanded.

The investigation of the thermal properties of fluids was continued along both experimental and analytical lines, the former involving determination of the enthalpy of hydrocarbons and their mixtures under high pressures, particularly of mixtures in which the components differ considerably in molecular weight. The latter focused on the development of general methods of predicting the thermodynamic properties of pure substances and mixtures, especially for estimating critical constants and predicting specific heats.

In the field of fuel engineering, the outstanding achieve-

ment of the year was the completion of the study of radiant heat transfer from flames, which resulted in the final resolution of the prior existing conflict between the data of German and American investigators. Definite progress was made in the experimental study of the factors affecting particle size and size distribution in clouds of atomized fuel oil. A study of the degree of parallelism between furnace flames and their liquid models was continued. The work on the development of techniques for utilization of solar energy in domestic heating was curtailed to divert personnel and, to a minor degree, equipment to the war effort.

Work on the chemical side covered varied projects. The interaction of sulfur with hydrocarbons was studied from the point of view of synthesis of hydrogen sulfide. An improved chemical method for the recovery of manganese from the low grade ores of Chamberlain County, South Dakota, was developed. In cooperation with the Department of Electrical Engineering, determinations were made of the effect on the electrical properties of oils of introduction of halogens into the molecular structure. The experimental work on the use of cuprous salts for the isolation of olefins and diolefins resulted in the development of a small continuous unit giving good separation in high degree of purity of both ethylene and propylene from mixtures with other gases. While the separation of butadiene was successfully achieved, attempts to improve the segregation of higher diolefins by this technique has encountered difficulties.

The effort of recent years to expand the method of supporting solid powders in flowing gas streams to a technique of control of chemical reactions has culminated in a considerable degree of success. It has been applied in the laboratory to the Fisher synthesis, to the catalytic oxidation of methanol to formaldehyde, of naphthalene to phthalic anhydride, and to the distillation of acetic acid from non-volatile but thermally sensitive residues. The results indicate that the method gives better temperature control of such reactions than hitherto achievable, and that where such control is essential this technique is likely to become of outstanding industrial importance.

In the colloidal field, further work on clay minerals was made possible by aid from the Research Corporation, directed

especially toward improving dielectric properties, both of Alsifilm and of modified clay as a molding plastic. The chemical mechanism of varnish cooking was studied by Raman spectrum technique. The work on rubber included study of the mechanism of vulcanization of latex, the compounding of guayule (important in the emergency rubber economy), and the investigation of emulsion type polymerization and co-polymerization at high emulsion concentration of oriented polymers and particularly of the properties of complex co-polymers. Further progress was made in the study of reclaiming synthetic rubbers, and work is under way to improve abrasion resistance of reclaimed natural rubber.

Two books were published during the year which it is believed will constitute outstanding contributions to the Department. The first is a new text on the *Industrial Chemistry of Colloidal and Amorphous Materials*, timely because of the extraordinary importance of current developments in this field. The second is a new edition of Professor McAdams' standard text on *Heat Transmission*, issued under the aegis of the National Research Council.

WARREN K. LEWIS.

CIVIL AND SANITARY ENGINEERING

The extent to which members of the staff of the Department of Civil and Sanitary Engineering are contributing professionally to the war effort has without question been the dominant feature of the activities of this Department during the past year. Practically every member of the staff has been engaged in war activities. So little can at this time be divulged regarding these activities that their technical significance cannot now be discussed. This report will therefore be confined to those activities of the Department which pertain strictly to educational and professional progress.

The scarcity of civil engineers required for special defense service is greater than ever before in the history of the Department. We have been wholly unable to fill the requests for graduate civil and sanitary engineers.

Professor Mitsch has been appointed adviser to all Tech-

nology students on the Army Enlisted Reserve Program and on the corresponding Navy Program.

For the first time since the opening of our Summer Surveying Camp, first year students were allowed to attend the Camp at the end of the freshman year without the usual surveying prerequisites. This change will not affect the total time spent on surveying. It will permit introducing into the required surveying courses additional instruction in aerial surveying and coordinate systems.

At the request of this Department, a considerable change in the method and scope of the teaching of the elements of electrical engineering and electrical laboratory has been made by the Department of Electrical Engineering. This change has produced courses which are much better adapted to the civil engineer.

Professor Reynolds exchanged places with Professor Franklin O. Rose of the University of Southern California during the past academic year. With the demolition of the old Army Airdrome, the Department lost about half of the space previously allotted to our River Hydraulic Laboratory. The loss has definitely handicapped research in this field.

The results of the fundamental long-term research dealing with the consolidation of soils, which has been in progress in the Soil Mechanics Laboratory during the past six years, will be published this fall. The investigation dealing with the shearing strength of soils, sponsored by the United States Engineer Corps and under the direction of Professor Taylor, is being conducted by a staff of the Engineer Corps assigned to M. I. T.; this project has entered its third year. In cooperation with the United States Engineer Corps, research on stress distribution at the base of airport and highway pavements is being conducted by Mr. John Lowe, III.

In the Structural Analysis Laboratory, Mr. Lehman has continued his study of stresses in gusset plates. Dr. Norris has carried out an investigation of the use of plastics which creep under load for models of photoelastic studies. Professor Wilbur, assisted by Mr. Peck, has developed a new and simplified method for the analysis of building frames acting under lateral loads.

Dr. Ruge has further perfected and developed new uses for his electrical strain measuring instruments. The original research, leading to the development of the present commercial strain gage, was sponsored by the Institute as an offshoot of research in engineering seismology. In the short space of three years this new strain gage has revolutionized the testing of aircraft stresses, both in static and flight tests.

The Sanitary Engineering Laboratory staff has contributed several progressive studies. Research by Dr. W. E. Dobbins dealing with the effect of turbulence upon the settling of discrete particles has been satisfactorily completed. The study of Dr. Stein on the theory of infiltration was presented in abstract at the Annual Meeting of the American Society of Civil Engineers. It is being prepared for publication in detail.

Professor Carlson is consultant to the Portland Cement Association on a comprehensive research program dealing with a long-term study of the performance of cement in concrete. In the Cement Laboratory, tests have been continued on models for the control of cracking in building walls. Research on the durability and constant volume of concrete was extended, and a paper on this subject was presented to the American Society for Testing Materials.

Professor Russell produced a fifth edition of his well-known book on hydraulics. This book was entirely rewritten, and modern concepts of fluid mechanics were included. In December the Fourth Annual Report of the Structural Analysis Laboratory was issued. Dr. Ruge wrote two papers which constitute parts of a symposium on the M. I. T.-U. S. C. G. S. tests of strong motion accelerometers. Professor Camp contributed a section on water supply, water distribution, and water treatment in a new *Handbook of Applied Hydraulics*, edited by C. V. Davis.

Professor Camp is the first recipient of the Karl Emil Hilgard Hydraulic Prize of the American Society of Civil Engineers which was awarded at the Annual Meeting for a paper entitled, "Lateral Spillway Channels." Professor Camp also presented a paper entitled, "The Effect of Turbulence in Retarding Settling," at the Second Hydraulics Conference at the Iowa Institute of Hydraulic Research.

The Cambridge Police Department presented the Institute with several pieces of surveying equipment suitable for reconnaissance for preliminary surveys.

CHARLES B. BREED.

ELECTRICAL ENGINEERING

In this war electrical technology is being used and developed as never before, creating a need for electrically trained men far in excess of the supply, especially in the fields of communications and electronics. This has put the Department under great pressure to provide men from its staff to fill important posts in the war effort as well as to do its utmost to train new men. In general the response to this pressure has been to grant leave to those members of the staff most urgently needed in special capacities here or elsewhere, to put more responsibility for our regular educational program on less experienced men, to suspend temporarily those educational and research activities that, however valuable, are not essential to winning the war, and to provide advanced training in those new and special fields in which our staff are especially qualified.

Of our staff of about 70, some 36 have been on specific war work to the extent of 25 to 30 man years during the past 12 months, many of these on notable assignments. Professor E. L. Bowles is Expert Consultant to the Secretary of War. Professor (now Commander) R. D. Bennett continues on leave for a major responsibility at the Naval Ordnance Laboratory where Professor J. E. Mulligan is also stationed. Professor R. D. Fay is on leave full time for NDRC and Navy research. Professor H. E. Edgerton and his group are doing special work for both services. Professor S. H. Caldwell is a section committeeman of NDRC as are also Professor J. G. Trump and Professor W. H. Radford. Several others are consultants to NDRC. Professor A. R. von Hippel and his Insulation Laboratory staff are engaged full time on war research. Professor W. L. Barrow is in charge of a major educational project of an advanced specialized nature for both services under ESMWT auspices on which Professors M. S. McIlroy and J. A. Wood are spending full time and Professor Radford half time. Professor G. S. Brown is in charge of a large laboratory devoted entirely to

war work for several governmental and commercial agencies. Professor W. M. Hall is on leave for special war work in industry. Others are spending substantial amounts of time on war work. The absence of these men has thrown an extraordinarily heavy load on the others of the staff doing the equally essential teaching work.

Conservation of man power has forced discontinuance for the duration of the Honors Groups and the Colloquia with industrial leaders, valuable features of our program.

An anticipated acute shortage of men trained in ultra-high-frequency techniques caused ESMDT last fall to take emergency steps for training many additional men. Dr. Barrow, because of his recognized work in this field, was asked to organize a conference for representatives of 40 leading engineering schools to formulate a course to be given in each of these schools. By a remarkable coöperative effort, including the services and industry, there was produced within three weeks a detailed syllabus, a set of laboratory experiments, and sketches and specifications for the construction of commercially unavailable laboratory apparatus. A text based on this course appeared in August, 1942 with Professor Woodruff, who gave the M. I. T. course, as one of four authors. A second similar conference including 27 new schools was held this September at the Institute under Dr. Barrow's direction. Currently this Department is repeating the course for Institute students on an extended basis, and is developing excellent educational laboratory facilities in the field.

Several items pertaining to the regular undergraduate program are worthy of note. Consideration by a committee under Professor M. S. McIlroy of the increasing emphasis on electronics and electrical implementation in all phases of engineering led to the formation of a new option under the four-year curriculum of Course VI, designated as Option 4, Electronic Applications, an emphasis that appeared most worthwhile to the Department Visiting Committee at its informal meeting in January. Reflecting the same need by students majoring in other fields of engineering is a new subject, Instrument Electricity, for non-electrical students, emphasizing the light current and electronic applications of fundamental theory which

is being given jointly by Professor Gray of this Department and Professor Draper's Instrumentation group.

The Course Revision Project, in which the main stem of undergraduate professional study, the *Principles of Electrical Engineering* series, has been under intensive redevelopment as a cooperative effort of the entire staff, is now reaching fruition in a series of texts. Volume I, *Electric Circuits*, appeared in October, 1941, while Volume II, *Magnetic Materials and the Transformer*, and Volume III, *Applied Electronics*, are in process of printing. Work on the volume on electrical machinery has been suspended for the duration. It is hoped that this project, which has benefited by the close cooperation of the Department of Physics including the provision of special preparatory work, gives to our students that increased emphasis on fundamental electrical science so essential to the mastery of present and likely future trends of electrical technology.

At the graduate level, the new year was successfully begun in June to permit completion of a student's training in specialized branches at the earliest possible time. Here, work in automatic control and the new communications fields, together with the supporting fundamental subjects, is especially active. By virtue of the cooperative course students, the considerable number of teaching and war research assistants, and officers of the United States services taking advanced work, coupled with the importance of advanced electrical techniques in the war effort, graduate study in the Department currently fills an active need.

In the field of research, comments are necessarily confined to general statements and to a few projects, though it may be said that the vigor and productivity of our staff are at an exceptionally high level. In the Center of Analysis, under the direction of Mr. Richard Taylor in the absence of Professor Caldwell, the new Differential Analyzer is producing useful results, and the older model is in full-time operation. Arrangements have been completed for the installation of a complete range of punched-card equipment, well adapted to large-scale studies involving statistical analysis and related work. In the Laboratory for Insulation Research under Dr. A. R. von Hippel, research facilities now span the frequency range used

in electrical technology and include X-ray and electron diffraction apparatus of special design. A three-beam cathode ray oscillograph with extremely high resolving power on the time scale is under construction. A number of significant results have come from this laboratory during the past year.

The mineral oil deterioration project under Professor J. C. Balsbaugh has taken on immediate practical significance by virtue of the increased loads and the consequent higher operating temperatures and more rapid oil deterioration in oil-filled electrical apparatus throughout the entire electric power industry. Also the specialized techniques and instrumentation of this laboratory are proving valuable on several war projects.

Important results on the Hyams' High-Voltage X-Ray Radiation project have led to a renewal grant from the Godfrey M. Hyams Trust for three years. Studies are continuing on the properties of X-rays up to four million volts, produced by the compact pressure-insulated Van de Graaff type electrostatic generator. Voltages of 4.7 million volts have been attained on this generator, the highest values for machines of this type regardless of size. While medical studies on this equipment continue, the group is assisting in the program of the high-voltage nuclear group in the Department of Physics.

An extended series of data on the reflecting properties of materials was obtained and published by Professor Moon, who also has been active as a consultant for NDRC. In the electric power field, our Network Analyzer has been used on numerous emergency power supply studies to enable utilities to deliver a maximum of energy to war industries with a minimum of new construction materials.

The progress and results of most of the research being carried on by members of the staff must pass unnoted at this time, but this research does represent activity of substantial long-term benefit as well as a contribution to the immediate urgent problems of the war.

At the request of the Commonwealth of Massachusetts, an extended study of its entire system of communications has been made and recommendations for new facilities with specifications have been prepared by M. I. T. under the direction of Professor C. E. Tucker. Professor Tucker also had the responsi-

bility for the Institute for the technical planning of the new dial telephone system which is complicated by the many and diverse needs of numerous war agencies.

The outstanding work of Professor Edgerton in high-speed photographic and illumination techniques was recognized last year by the Franklin Institute in the award to him of its Howard N. Potts Medal.

The immediate problem for the future is primarily a day-to-day adjustment of space, facilities, and precious staff personnel to meet the urgent and changing needs for training men and prosecuting war research in the most effective manner.

HAROLD L. HAZEN.

MECHANICAL ENGINEERING

During the past year the Mechanical Engineering Department has completed the revision of its instruction in applied mechanics and in heat engineering. These revisions include somewhat drastic alterations, both in the content of the subjects and the method of instruction, with a view to a more analytical and generalized treatment. It has become clear that the future responsibilities of our graduates in the field of mechanical engineering are quite unpredictable and that their training here should provide a firm foundation for dealing with a rapidly changing technology. The war has drastically changed the kinds of engineering practice our graduates might ordinarily have been expected to encounter, and already experience seems to confirm the wisdom of the changes made.

For example, instead of a subject in refrigeration, senior students study the principles of heat transmission and their many applications in engineering design with some reference to refrigeration. This is followed by a subject in the properties of mixtures and applications in engineering of the second law of thermodynamics. We now have four consecutive undergraduate subjects in heat engineering (2.40, 2.42, 2.43, 2.44) running through the junior and senior years. These offer the undergraduate a program in the field of heat which is probably unique in this country in its breadth of scholarship and range of utility. A similar claim could be made for the new program in applied

mechanics, described as to objectives and content in previous reports.

In the coming academic year it is planned to start a somewhat similar revision of the instruction in mechanics of materials, a division of the Department having been organized for the purpose.

The Department is now organized in five main divisions as follows:

Applied Mechanics, Professor C. R. Soderberg; Mechanics of Materials, Professor C. W. MacGregor; Machine Design, Professor G. W. Swett; Automotive Engineering, Professor C. F. Taylor; Heat Engineering, Professor J. H. Keenan.

Automotive Engineering. A class of 42 Naval officers was taken on for the first term in addition to the regular classes. During the summer of 1942, another class of 50 Naval officers was enrolled for airplane engine work, as well as a second class of 50 who took part of their work in this subject. The extra load on the staff has necessitated transfer of men from research projects.

Undergraduate interest in airplane engines has led to excessive enrollment for our facilities. Twenty out of 60 applicants were refused enrollment for laboratory exercises, and five out of 35 were refused enrollment for the design course.

In spite of the increased teaching load and an abnormally rapid turn-over of research assistants, the Sloan Laboratory has continued work on six research projects for the National Advisory Committee for Aeronautics and on an important project for the Wright Aeronautical Corporation. In addition, members of the staff are serving on several government committees and assisting industrial concerns with emergency problems.

Machine Design. The increasing importance of hydraulic applications in machine tools, ordnance, and machine design generally has been recognized by the addition of pertinent lectures in the senior design subject and by an elective subject for seniors, "Hydraulic Power Transmissions and Controls."

Machine Tool Laboratory. Operating conditions for this laboratory are difficult because priority regulations preclude purchase of replacements, repair parts, tool steel cutters, and

even bar steel for students to practice on. A supply of iron castings will carry us a year longer.

Heat Engineering. This division has been conducting a research project for the National Advisory Committee for Aeronautics on high velocity friction in pipes and two other projects.

Mechanics of Materials. This division has developed apparatus to produce plastic flow or fracture in high-speed rotating steel discs. A research project, sponsored by the Engineering Foundation, will use this apparatus to study the effects of combined stresses on various welded assemblies. A special machine has been built to study fatigue and notch sensitivity of plastics. The program on billet rolling, sponsored by the Committee on Rolling of Steel of the A. S. M. E. and financed by the Engineering Foundation, has been completed. Apparatus has been installed and research initiated for an industrial firm to study the fatigue of threaded connections. Several confidential war projects have been undertaken, and students and staff completed 14 minor research projects.

Lubrication Laboratory. With the coöperation and support of the Chrysler Corporation, work has been continued on the effects of surface finish on bearing load capacity. A study of the wettability of oils for bearing materials has been made, and a machine has been built for studying the fundamental friction phenomenon of "stick-slip." Measurements of material transferred between sliding surfaces have been begun. The last project has been made possible by artificial radio-activation of one of the surfaces in the M. I. T. Cyclotron.

Textile Division. The Textile Foundation research program on the time factor in textile testing has been brought to the point where publication of the detailed results in book form has been authorized.

Since August research has been under way on aeronautical textiles — particularly parachute canopies and shroud lines — under a fund established by H. Nelson Slater for this purpose. One important development was the construction and use of apparatus for nitrogen blast-impact testing of fabrics.

The latest model Permeometer for air permeability testing of fabrics, in the development of which the staff coöperated, has been presented to the Textile Laboratory by the manufac-

turers. New equipment for creep testing, compressional resilience, and water permeability has been constructed.

Staff members served various Government and War Industry groups. Professor Schwarz is Expert Consultant to the Textile Section of the Division of Civilian Supply of the War Production Board and to the Textile Research and Production Section of the Office of the Quartermaster General, and was also Coördinator of two special Industrial Fire Defense courses for the City of Cambridge and two Industrial Safety courses for the ESMDT Program.

Dynamic Strength Laboratory. This laboratory has been largely engaged in two projects for the NDRC and one for the David Taylor Model Basin of the United States Navy.

The Rayflex fatigue machine has been actively used in coöperation with the Department of Metallurgy in the investigation of the influence of internal stresses on the fatigue strength of steel and also in the related problem of the change in internal stress produced by cyclic strain. This machine was also used to investigate the fatigue strength of non-magnetic austenetic steels for the American Brake Shoe and Foundry Company.

Heat Measurements Laboratory. Investigations of the specific heat of insulating materials and the thermal conductivity of crystals have been completed. New heat transfer equipment for the determination of heat losses through ceilings and roofs has been installed, and tests indicate marked difference from the calculated values now in use for some types of materials. Apparatus for the study of heat transfer through pipe covering and of heat flow in the unsteady state has been developed for use by the students.

Photoelasticity Laboratory. Several stress analyses have been carried on for the aircraft industry, and two projects dealing with fundamental research have been brought to completion. Of the latter projects, one consists of a complete photoelastic study together with a related mathematical analysis on the general case of stress distribution around a circular discontinuity in any field of two-dimensional stress. The other project deals with the application of brittle lacquers to the determination of stress directions in photoelastic models. The

technique of this method has been greatly improved with the result that it is now possible to obtain complete diagrams of the individual families of stress trajectories by direct experimental means. Dr. Durelli of Argentina, a guest of the Department, developed the method used.

J. C. HUNSAKER.

METALLURGY

The academic program of the Department of Metallurgy has been kept as normal as conditions permitted, although the uses of metals for war purposes have been strongly emphasized. Members of the staff have been increasingly active in war problems. Professor Bitter is still on leave and is attached to the Navy Department in Washington. Professor Waterhouse was given leave of absence for the first term of last year to act as consultant to the OPM. His duties required that his leave be extended through the second term. He has now been transferred to the Lend-Lease Administration and will probably be absent during the coming academic year. Mr. H. R. Spedden, Instructor in Mineral Dressing, has been given a year's leave to carry on an investigation in Bolivia for the Board of Economic Warfare. In this work he is under the direction of Professor Gaudin who will be in Bolivia until the latter part of October. In addition to his work in South America, Professor Gaudin has been working with the New England Council in an investigation of low-grade manganese deposits in Maine and has shown the possibility of large-scale development of these ores. Professor Gaudin was Chairman of the Mineral Dressing session at the meeting of the S. P. E. E. at which Professor Schuhmann presented a paper. The division of Mineral Dressing was also well represented at the meeting of the A. I. M. E. with a presentation of six papers. A comprehensive research on the fundamentals of comminution has been started. In this connection a substantially frictionless crushing apparatus has been built for investigating the energy efficiency of comminution. Under a grant from the Belgian-American Foundation, Eugene F. Poncelet, formerly Professor of Ore Dressing at Laval University, has been studying the nature of friction in brittle solids.

Professor Williams has been appointed member of the War Metallurgy Committee and Metallurgical Adviser to the Quartermaster General. His work with the Watertown Arsenal, the Boston Ordnance District, and as a member of the War Products Advisory Committee of the A. S. M. is continuing. He has also taken over some of the duties of the Dean of Engineering because of Dean Moreland's frequent absence in Washington.

Professor Chipman has just completed a war research project and is actively engaged in two other projects of major military importance. It has been necessary to enlarge his laboratories to accommodate these researches. Dr. Chipman has devoted much of his time to consulting work at the Watertown Arsenal, some of the experimental work on gun manufacture being carried out in his own laboratory. Work on the chemistry of steelmaking is continuing though at a reduced rate.

Professor Hayward has initiated what may be a continuing research on the use of oxygen-enriched air in copper smelting. His work on the extraction of nickel has been continued.

Professor Homerberg has been increasingly active in his consultations with aircraft and tank manufacturers with regard to the uses of nitrided parts. He shared with Professor Cohen in one of the ESMDT courses and gave lectures before the Ontario and Notre Dame chapters of the A. S. M.

The Division of Ceramics has been studying problems of refractories and porcelain insulators and has made several important contributions to the war effort. Fundamental studies on the properties of clay have been continued though at a reduced pace. Results of this work were reported by Professor Norton and Mr. Johnson at the annual meeting of the American Ceramic Society. Professor Norton gave a lecture on "Ceramic Glazes" at New York University. Continued coöperation with sculptors has done much to give the artist a satisfactory medium to replace strategic bronze.

Professor Locke made an extended trip to the West to attend a meeting of the A. I. M. E. at Duluth and to visit a number of mines to study developments in Ore Dressing. In his capacity as Secretary of the Alumni Association he also visited a number of alumni clubs during the trip.

The Radiographic Laboratory under the direction of Professor J. T. Norton is making an important contribution to the war effort in the inspection of metal parts, particularly castings prior to machining. Much time is being saved by the detection of defective metal in the early stages of manufacture. With Professor Rosenthal, formerly of the faculty of the University of Brussels, Dr. Norton is also working on the important problem of residual stresses in metals. This project is sponsored by the Welding Research Committee and the technique developed has been applied successfully to the problem of stresses in welds.

Professor Wulff has increased his activities in the field of Powder Metallurgy, and a more adequate laboratory for his experimental work is under construction. He has rearranged and edited papers presented at the 1940 and 1941 conferences on Powder Metallurgy and has published them in book form. He has also published a paper on the "Corrosion of Copper and α -Brass" in the A. I. M. E. with J. H. Holloman.

Professor Kaufmann has given half of his time to an NDRC project but has carried on a limited amount of research on the magnetic properties of metals, especially at low temperatures. Because of the temporary removal of the large generator, this work will have to be greatly curtailed during the coming year.

In spite of the pressure of other duties, Professor Cohen has been able to continue, with the aid of graduate students, his fundamental researches on heat treatment and phase transformations in plain carbon and alloy steels. The work on sub-zero transformations in high speed steel has attracted much attention. Five papers describing these researches have been published during the year, and five more are in preparation. Dr. Cohen gave a University Extension course in Metallography and Heat Treatment with a record attendance of 112 students. He is metallurgical consultant for the Boston Ordnance District, a member of the War Products Advisory Committee of the A. S. M., and a member of the Papers and Programs Committee of the A. I. M. E.

Professor Floe is associated with Dr. Homerberg in connection with Nitralloy problems and has been especially concerned with airplane manufacture. He is also consultant for

the Gorham Company, largely in connection with Army and Navy equipment. He has served as a consultant for the Lend-Lease Administration and for a company interested in the possible substitution of high lead alloys for strategic tin. He is also giving lectures to the Army Ordnance Inspectors detailed to the Watertown Arsenal.

A fundamental study of the Dimensional Stability of Metals will be begun this year under a grant from the Sheffield Foundation. While this is not directly a war problem, the matter is one of extreme importance in the production of precision gages and other precise measuring instruments which should retain their dimensions over long periods of time. This is a joint project with the Department of Mechanical Engineering and will be directed by a committee consisting of Professors Williams, deForest and Cohen. Dr. Stewart Fletcher will be in direct charge of the experimental work.

ROBERT S. WILLIAMS.

METEOROLOGY

The major activity of the Department during the past year has been the training of weather officers for the Army and Navy, but a number of research programs, most of which bear directly on the war effort, have also been vigorously prosecuted. One training program for weather officers, which started on July 7, 1941, was terminated on February 14. A new and larger training program was then initiated on March 16 which is to continue until November 30, 1942. This extension of the training course to eight and one-half months was made as a result of a conference held in Washington between representatives of the five universities coöperating in the training program, the armed services, and the Weather Bureau. It was agreed that additional time was required to present the material which the armed services deemed essential to the preparation of weather officers for the duties which they are now required to assume. The course has been divided into three terms of approximately three months each. The time assigned to most courses has been increased, and new courses have been added in Oceanography and Physics of the Atmosphere. The

training in weather map analysis and forecasting has been revised and extended. Particular emphasis has been placed on the analysis of Northern Hemisphere charts and on forecasting on the basis of local data alone.

Due to the great numerical preponderance of government students and the heavy load on the staff, the civilian students have in general followed the same schedule and taken the same subjects as the government students. However, certain advanced subjects have also been offered. Although the increased enrollment has reduced to some extent the amount of individual attention given to the civilian students, it is believed that the subjects themselves have steadily improved and that our training in meteorology is now at the highest level which has yet been attained.

The demand for civilian meteorologists has been greatly increased by the war. Many of these needs are as important to the war effort as the need for weather officers in the armed services. The attractiveness of the special government training programs in meteorology and the operation of the Selective Service System have made it extremely difficult to attract qualified civilian students. Because of the rapid increase in the number of government students in successive training programs, we have been forced to retain most of our recent civilian graduates as instructors. Consequently, very few qualified meteorologists have been available during the past year to fill the many important positions in the field. The most pressing need at present is a plan which will bring us a much larger number of civilian students. Such students would have to be drawn from educationally qualified women and men who are ineligible for military service because of physical disabilities. The employment opportunities for women are especially favorable at this time.

The research program on long range forecasting under Professor Willett is continuing in coöperation with the United States Weather Bureau. Valuable statistical investigations have been completed, and the project is being expanded during the 1942-43 fiscal year. Professor Haurwitz is now engaged in research on one aspect of this project. An important climatological investigation initiated by Professor Petterssen was car-

ried on by Miss Whitcomb and Mrs. Gleim, and this will continue during the coming year. This project ties in closely with Professor Haurwitz's development of the new subject in Climatology. The research on methods for the de-icing of aircraft has been continued under contract with the United States Army Air Force with an enlarged staff. Several promising new developments have emerged from this investigation. At the request of the NACA, we have undertaken the development of an instrument to determine the amount of rain water intercepted by an airplane in flight. The instrument has been completed and is now ready for flight tests. The research project for Section D-4 of the NDRC, of which Mr. Bemis is Chairman, has been extended on an expanded basis.

Professor Petterssen has been on leave of absence since October to permit him to engage in important war work abroad. His commitments have now become so pressing and of such indeterminate duration that he has felt it necessary to resign. His loss will be keenly felt by all of us. Under his guidance many important and far-reaching advances have been made without which the present expanded training program would have been impossible. Mr. Boucher has been on leave of absence to permit him to assist in an important project sponsored by the United States Weather Bureau. Professor Haurwitz was elected Vice-President of the American Meteorological Society and presided at the annual Washington meeting of the Society.

HENRY G. HOUGHTON.

NAVAL ARCHITECTURE AND MARINE ENGINEERING

Because of the national emergency, the programs for the various courses in this Department have undergone considerable revision during the past year. The seniors in Courses XIII and XIII-C graduated in April, 1942. The present seniors in Courses XIII and XIII-C were given a special program this summer so that they could graduate in February, 1943. The graduate class of United States Naval officers in Course XIII-A graduated in October, 1941, and the graduate class of Brazilian Naval officers received their diplomas in June, 1942. The one-

year course in Naval Engineering is still in effect and is expected to continue next year.

The Department has conducted three Engineering Defense Training courses during the past year, two in naval architecture for Civil Service appointees and one in naval construction for a group of Naval Reserve ensigns. This makes a total of six of these courses undertaken by the Department since they were started in February, 1941, and it is expected that they will be continued during the coming year.

The demand for graduates of Course XIII has increased greatly, but at present the Department is carrying about as many students as its staff and facilities permit. During this summer a large portion of the sophomore class was placed in positions relating to the war effort, and many were located in shipyards, an advantage to all concerned.

After the declaration of war in December, 1941, the students in the course in Marine Transportation then at sea were advised that they could come ashore and complete their required year of practical experience in a shipyard. Three men, however, remained at sea until the middle of May. The plan of sending the students in this course to sea for their fourth year has been abandoned until the end of the war. The students who finished their junior year in May, 1942 have joined the group which returned from sea, and both groups started their last year of study in June.

The Propeller Tunnel was engaged until May in the completion of a contract with the Navy Department. General research on the properties of wide blade propellers is now in progress.

H. H. W. KEITH.

SCHOOL OF SCIENCE

BIOLOGY AND PUBLIC HEALTH

This year marks the retirement of Professor S. C. Prescott from his duties as Head of the Department of Biology and Public Health after the completion of 20 years of service in that capacity. The Department records its deep appreciation to Professor Prescott for the many advances which have been

made under his active leadership and for his guidance and kindnesses to staff and students alike. His influence will long be felt. It appears that he will have little opportunity to reduce the tempo of his activities for the present, since his expert knowledge of the technology and procurement of food supplies is being called upon, as it was in the previous war, by the Office of the Quartermaster General of the Army.

During the year, announcement was made of changes both in the scope of the work of the Department and in the curriculum. The training in public health is to be restricted to its engineering aspects after July 1, 1944. The present program in public health will continue until that date under the direction of Professor Turner as head of a separate Department of Public Health. The name of the Department has been changed to Biology and Biological Engineering. In the curriculum changes, a four-year course in Quantitative Biology (VII, Option 1) leading to the degree of Bachelor of Science in Quantitative Biology has been devised which provides a thorough background in the physical sciences and yet offers a wide choice of electives, especially in the senior year. It should be particularly attractive to students preparing for a career in experimental biology and medicine. Alterations have also been made in the five-year course (VII-A) leading to the degrees of Bachelor of Science in Quantitative Biology and Master of Science in Physical Biology simultaneously. Subjects in advanced organic chemistry and in general physiology have been added and the preparation in biophysics coordinated with these changes to offer a well-balanced training in this rapidly growing borderline field. The course in Food Technology and Industrial Biology remains essentially the same except for a few alterations in the second and third years to adjust to the new treatment of general biology.

The necessities of the war have brought widespread changes in the Department's work. While the teaching schedule has been fully maintained, the research of the staff has been devoted very largely to matters pertaining to the war effort.

The work of the Food Technology Laboratories, under the direction of Professor Proctor, has been concerned largely with the processing of foods urgently needed by the armed services.

Several new products are now being tested after adaptation to commercial methods of production. Certain dehydrated foods are of particular importance in this connection. Another project is the successful production of plastics from fishery wastes. In addition, confidential work for the Office of the Quartermaster General, the War Department, and the Navy has been in progress throughout the year. The Department is grateful for the continuation of fellowships by the American Institute of Baking and the Kroger Foundation as well as for the continued interest and support of Mr. Bartlett Arkell.

Investigations on nutritionally-complete food mixtures are being conducted in the Nutritional Biochemistry Laboratories under the direction of Professor Harris. This work, which was made possible by a grant from the Rockefeller Foundation, has resulted in the development of an enriched protein soup powder which is now being used by the Federal Government in national and international feeding programs. Grants received from the Williams-Waterman Research Corporation, Lederle Laboratories, Lipton Tea Company, Kellogg Foundation, and Lever Brothers Company have supported investigations on amino acid, fatty acid, and mineral metabolism. Clinical studies have also been made to determine the thiamine requirements of women during pregnancy. During recent months the facilities of the laboratories have been devoted largely to an investigation on emergency rations for the armed forces and other important problems dealing with the war effort. Professor Harris is serving as a member of the Committee on Nutrition in Industry of the National Research Council and as special consultant to several governmental agencies concerned with present and post-war feeding problems. He is editor of the yearbook, *Vitamins and Hormones*.

The public health program has been conducted much as in recent years. Professors Turner, Horwood, and Williams have continued their consulting services to the Boston Health Department, and these relationships have been distinctly valuable in increasing student possibilities for our enlarged group of graduate students in public health. These staff members have conducted their original investigations in the special fields of public health administration and health education, bacteri-

ology and sanitation, immunization and laboratory control, respectively.

An accelerated program of public health training for graduate students in public health began on June 8, and the academic year for these graduate students, as well as for seniors in public health, will end the first of February. A group of these students began on June 8 to prepare themselves for war service as laboratorians, sanitarians, health educators, and administrators. The Department is indebted to the W. K. Kellogg Foundation for scholarship aid which made it possible for an appreciable number of students to follow the accelerated program.

During the year a weekly Biological Engineering Colloquium, conducted by the staff and invited speakers, provided a stimulating series of discussions on a wide variety of subjects in this field.

Work on the ultrastructure of proteins and tissue components got well under way with the installation of two X-ray diffraction units, excellent polarization optical equipment, and an electron microscope. Important contributions have already been made, and further advances may be expected shortly in this interesting search into the submicroscopic. A portion of the work dealing with one particular protein is supported by a grant from the Johnson Research Foundation. Professor Bear has continued his investigations on the molecular structure of the starches, a project which has been subsidized in part by a grant from the Corn Industries Research Foundation. Professor Waugh initiated interesting work on fluxional birefringence and optical studies on insulin.

The efforts of a considerable number of the staff have been devoted to several problems of importance in the medical aspect of the war effort. Professor Loofbourow and his associates have continued their investigation of wound hormones and have made important advances in the spectrographic identification of these substances and their chemical isolation. Dr. Lion, who has assumed certain of the duties of Professor Horton, now on leave of absence with the Navy, has assembled equipment in new and enlarged quarters in Building 3 for teaching and research in the electrical aspects of Biological Engi-

neering. He has also devised a practical dosimeter for use with short wave therapy. The mechanism of alcoholic fermentation has been studied by Professor Gould, together with the enzymic properties of vitamin C. The nature of enzyme action becomes ever more important for an understanding of many physiological processes. Professor Sizer made important contributions in this field this year, particularly through a study of the effect of the chemical environment on enzyme action and by spectrographic studies. Professor Jennison was at work on the proteolytic enzymes of bacteria. In addition to his work on the biology of termites, Professor Blake served as a consultant for the Navy. He has been active in work on pest control and was made an honorary member of the New England Pest Control Association.

The year has been one of transition for the Department, with many additional problems introduced by the war. While it may be necessary to postpone certain aspects of the new program, nevertheless plans are well laid which will ensure its success with the return of more normal conditions.

F. O. SCHMITT.

CHEMISTRY

During the year the activities of the Department have been focused upon two objectives; namely, action on recommendations by the Visiting Committee, and the adjustment to assist in the war effort. With the coöperation of the Department of English and History, a new subject, Report Writing, combining instruction in writing scientific memoranda, business letters, abstracts of scientific articles and comprehensive reports, culminating in the presentation in oral and written form of the literature on the preliminary work of the senior thesis, has been introduced in the fourth-year curriculum. The reports are attended by the thesis supervisors. The conclusion drawn from experience seems to indicate a fine fundamental background in English on the part of the student but a decided lack of experience in both oral and written presentation, which is essential to a career in science.

In the accelerated program for fourth-year students, the Department substituted for elective time a two-term subject

in Advanced Organic Chemistry, normally attended by graduate students. As a result of this experiment, two new subjects in Organic Chemistry, especially designed by Professor Huntress as a continuation of the third-year instruction in this field, have now been introduced in the fourth-year curriculum as a requirement. It is expected this further study in Organic Chemistry on the part of the undergraduate will place the student in an exceedingly advantageous position in industry or graduate study as no similar curriculum is offered elsewhere.

The graduate subjects in Physical Chemistry have been revised by merging Thermodynamics and Chemistry and the Theory of Solutions into a year course in Chemical Thermodynamics. A subject in Kinetic Theory has been added.

All the major research programs, including graduate research, which were not already contributing to the war effort have been revised in this direction, and the research for graduate students started at an earlier point in their graduate program. The Department advised candidates for the degree of Doctor of Philosophy to enter as of June, 1942 or to continue through the summer and arranged a full program of subjects and research. Other subjects were offered to encourage the members of the Sophomore Class to anticipate the professional work of the third year. This program, added to the regular summer subjects and the fourth-year program, has resulted in an intensive summer for all the available staff of the Department. Those engaged in war problems have naturally been in attendance.

Because of the activity of the staff in war research, the output of fundamental research from the Department has been reduced, and no new projects have been started. All of the time of Professors Keyes, Collins, and Dr. Stout, as well as that of Professor Beattie since April, together with about half the time of Professors Scatchard, Harris and Stephenson, has been devoted to war research. Professor Huntress has been for the full year an active consultant for the C. W. S. Development Laboratory. Professors Schumb and Gamble have also devoted much of their time to war projects.

The Research Laboratory of Organic Chemistry has continued the program of consolidation of subjects and improve-

ment in thesis, mentioned in the last report. The group is now organized to carry on its research work with the very close coöperation of all its members.

The programs on Vitamin Synthesis, directed by Professor Milas, and on Cellulose Chemistry, directed by Professor Purves, which have received financial support from industry, have been continued. The results have been most encouraging and of timely interest.

The only special war courses offered by the Department were in the field of Powder and Explosives under the ESMDT program. Professor Thompson's previous interest in this field and the opportunity to attend an intensive course in the subject as a representative from the Department resulted in the preparation of a complete book outlining this course. Dr. T. R. P. Gibb, Jr. has also published a new text, *Optical Methods of Chemical Analysis*, which is considered to be an outstanding contribution.

The number of scientific papers published during the last year, not including those which will result from work of a confidential nature, is 50. The Department has been well represented at the national meetings of the American Chemical Society and other conference groups. The work of Professor A. R. Davis and Professor E. B. Millard in lecturing on Fire Protection and Incendiary Bombs throughout New England, at the request of the Massachusetts Committee on Public Safety, to 50 civilian volunteer groups should be mentioned.

The Department has been able to replace staff members on leave of absence, or otherwise engaged, and supply research personnel from its experienced Teaching Fellows, many of whom were engaged in their last year of academic work as candidates for the degree of Doctor of Philosophy. Their willingness and enthusiasm to take over or assist in performing the duties of men who have been called upon for other service are appreciated.

Two members of the Department have received public recognition. On May 14 Professor Keyes was awarded the Theodore William Richards Medal of the Northeastern Section of the American Chemical Society for "conspicuous achievement in chemistry," and Dr. Oncley, on September 10, was

awarded the American Chemical Society Prize for "outstanding research in pure chemistry."

Professor Hamilton was appointed Acting Head of the Department on May 1 in order that the full time of Dr. Keyes could be devoted to his highly important war research. Professor Scatchard has assumed the responsibility of directing the Research Laboratory of Physical Chemistry and Professor Marvin the Analytical Division.

L. F. HAMILTON.

GENERAL SCIENCE AND GENERAL ENGINEERING

In addition to increased registration in advanced military training, most of the students enrolled in Course IX during the past year have capitalized the broad elective opportunities of the course to prepare themselves for the more important aspects of war production.

The field of application covers aeronautics, automotive engines, chemical engineering, electronics, engineering materials, labor relations, machine design, manufacturing, metallurgy, powder and explosives, production, and testing materials.

While former objectives have been changed materially by war conditions, an effort has been made in all cases to make schedules equally applicable to the post-war reconstruction period.

During the summer every undergraduate not engaged in technical study has been employed in some type of activity associated with the prosecution of the war.

RALPH G. HUDSON.

GEOLOGY

During the past year the Department of Geology operated under somewhat reduced student enrollment because of war conditions. The Department did not offer subjects in geology during the past summer as it was possible to arrange satisfactory schedules for the senior students of courses outside of the Department.

Professor Fairbairn's book on *Structural Petrology of Deformed Rocks* appeared in May. Professor Buerger's book on *X-Ray Crystallography* was published in July. A volume on

Ore Deposits as Related to Structural Features, prepared and edited by Professor Newhouse, is now in press and should appear at an early date. The book on *Index Fossils*, by Professors Shimer and Shrock, has been completed and is now in the hands of the publisher. Each of these volumes is an unusually important contribution to its branch of geology in which the Department and the Institute may well take pride.

Professor Slichter and Dr. Pekeris have been on leave of absence during the year on important research work under the NDRC and will be on leave of absence during the coming year. Professor Parks has been on leave of absence, serving as Deputy Chief of the Miscellaneous Minerals Branch of the WPB. He will continue in this work during the coming year.

Professor Hervey W. Shimer retired at the end of the year after 39 years of active service with the Department.

WARREN J. MEAD.

MATHEMATICS

During the year a Research Center of Applied Mathematics was established to consolidate numerous activities in this field. The center was placed under the direction of a supervisory committee consisting of representatives of the Mathematics Department and of the science and engineering departments principally concerned. This committee will have direct charge of graduate students in applied mathematics. Such students will thus be permitted to follow programs of study and research independent of department boundaries, the only essential limitation being that the programs include the fundamentals of one or more fields of application and the mathematics needed to analyze those fields. Funds for fellowships in applied mathematics were provided by the Corporation, and fellowships were awarded to seven outstanding students who will follow a twelve months' continuous program of study and research beginning with the Summer Session of 1942. Of these students, two had majored in mathematics, four in physics, and one in mechanical engineering.

Nearly half the department members were engaged at least part time on work for national defense. For this work they were divided into groups headed by Professors Wadsworth,

Crout, Reissner, and Wiener, these groups being concerned respectively with industrial statistics, electrical applications, mechanical applications, and analytical statistics.

H. B. PHILLIPS.

PHYSICS

The Physics Department has been engaged to an almost complete extent in war work during the year, nearly every member of the teaching staff being engaged in war activity. Various forms which this has taken are the following: full time leaves of absence for work outside Cambridge (Boyce, Albertson, Lamar, and, at the end of the year, Allis); services as Section Chairmen of the NDRC, with full or partial relief from teaching (Harrison, Hardy); full time relief from teaching for various projects in Cambridge (Slater, Morse, Stratton; also, at the end of the year, Frank, Van de Graaff, Squire, Buechner); part-time work in projects in Cambridge (Warren, Mueller, Nottingham, Evans, Stockbarger, Sears, Harvey, Duntley, Goodman). Among the younger staff members there are a number of additional men doing war work of one type or another.

In spite of the large diversion of the staff to war work, the teaching program of the Department has continued in a relatively normal way. The staff has been supplemented by extra instructors, rearrangements of schedules have been made, and very few subjects have been dropped or seriously affected. The number of graduate students has decreased during the year, as a number of them have left for war work, and this tendency showed signs of increasing toward the end of the year. No significant changes in teaching policy have been made.

Unlike the teaching program, the normal research activities of the Department have practically stopped. Some research facilities have been converted to war work, some are still operating at a reduced output in their normal way, and others are not being used. Some of the students engaged in thesis work are still carrying on research of a more or less normal sort, but others are doing research of a secret nature connected with the

war effort. Many others are stopping their graduate work and going directly into war work.

The Department was host to the American Optical Society which met in Cambridge in July, 1942 in connection with the Tenth Spectroscopy Conference.

JOHN C. SLATER.

SCHOOL OF ARCHITECTURE

ARCHITECTURE

Since the beginning of architecture, young architects have been trained by two methods: the first is the training of young men in the offices or under the direction of actual constructing architects; the second is the more formal method of instruction in schools. This second method is relatively new, having been first inaugurated in France about 1818 and in the United States and the British possessions about 1865. In 1865, because of the breakdown in the so-called "apprenticeship system of training," the School of Architecture of the Massachusetts Institute of Technology was organized by Professor William R. Ware and a very carefully prepared statement written defining the functions of such a school. It is generally conceded that this statement is probably the best ever written on the subject of architectural education. It is a broad survey of the field of architecture and discusses the relationships among the schools, the practicing architects, and the building industry in general.

For the first time in the history of the architectural profession, the practice of architecture as a private business has ceased to exist because of the war emergency, even public and semi-public work has stopped, and within a few months probably all construction of any type requiring the services of architects on a strictly professional basis will also cease. It would seem, therefore, to be the proper time to review again the field of the profession with relation to the training of young architects. For years the architectural profession and the schools of architecture have gone their separate ways without giving much consideration to the responsibilities of the two groups.

In England the schools of architecture are rather strictly

under the supervision of the Royal Institute of British Architects. While this may not be entirely satisfactory, it is apparent that a closer relationship between the men who employ the products of the schools and the schools themselves should be established. It is not possible for a school to create a thoroughly trained architect during the four or five years required to cover its normal course of instruction. It is, therefore, desirable that the students in the schools of architecture be given an opportunity to secure experience in an architect's office on such a basis as to give them a thorough knowledge of all the elements in the field of practice. It was for this reason that the Mentorship System was devised. Since the depression of 1930 and now, because of the war conditions, it has not been possible to make the Mentorship System work. It is the duty of the architectural profession and other groups in the building industry to create conditions which will provide a normal continuing amount of work which will insure the employment of men trained to be architects on a reasonably permanent basis. It will then be possible for the Mentorship System to supplement the training in the schools and provide young architects with a proper education. This will be a union with the apprenticeship method of education which was in use since the days of the Egyptians up to the time when the French, Americans, and English organized their formal schools, and our present system. This would provide a sound educational program.

Now is the time to make a careful review of the curricula of the schools of architecture, not only with respect to academic experience but with respect to the needs of practicing architects for trained men. This study should be based on an evaluation of the future trends in practice and an understanding of the types of construction and the new kinds of buildings that may be required for our reorganized national life. Such a study has been carried on during the past two years by the staff of the school of architecture in collaboration with practicing architects. This study is being extended over a wider field, and a report will be presented this fall with definite recommendations for a revision of the curriculum to meet the requirements that a reorganization of our national economy will require of the architectural profession and the building industry in general.

During the past year the enrollment decreased about 20 per cent due, in large measure, to the lack of work in architects' offices, and a further decrease may be expected each year until the war ends. The records of the schools of architecture indicate that attendance records are about parallel to the curve of activity in the industry.

The Arthur Rotch Library of Architecture has been the recipient of miscellaneous gifts of books, lantern slides, and old architectural journals from former students and friends of the School. Mrs. Horatio Lamb presented us with many *objets d'art*, several of which have been placed in the Library. The Moorish stained glass pieces were hung in the east windows, and the oriel bay window was placed in the Boles Memorial Room at the back of the Library. A word of appreciation is due Mrs. Lamb for her interest in the School and the enrichment of the Library. Perhaps the most notable acquisitions are the bound manuscripts, sketches, and photographs of Francis H. Bacon, Class of '77. Not only are our gifts of current interest and use, but they become a part of the backlog of valuable architectural knowledge already in the Library for the use of future generations of architectural students.

WALTER R. MACCORNACK.

CITY PLANNING

With the adoption last February of a four-year curriculum leading to the degree of Bachelor in City Planning, Technology became the first educational institution to recognize city and regional planning as a separate field of endeavor from the standpoint of professional activity. The new course has been developed in response to the need for a curriculum which is oriented to the professional field early in the program and which provides for a synthesis of the economic, sociological, administrative, and engineering aspects of city planning impossible in courses developed from existing curricula in specialized professional fields. Several years of careful study by the instructing staff with the assistance of the Advisory Committee preceded the adoption of the new program. The graduate program, leading to the degree of Master in City Planning, is now in its seventh year and continues to attract men of high caliber

and of varied undergraduate training. There is a noticeable trend for men trained in the social sciences to undertake advanced work in this field, which parallels the increasing importance of the economic and governmental aspects of the profession.

The instructing staff continued to coöperate with the research program of the Committee on the Hygiene of Housing of the American Public Health Association, and last February Professor Adams was appointed chairman of its Sub-Committee on Urban Planning and Development.

The research program on site planning and site selection for large-scale housing projects which has been carried on at the Institute during the past several years was expanded this year to include all phases of urban redevelopment. Problems attendant on the replanning and rehabilitation of blighted urban areas are receiving increasing attention from governmental agencies, such as the National Resources Planning Board and the Federal Housing Administration, as well as from national professional associations and representatives of private industry. In recognition of the opportunities for much-needed research into the economic aspects of urban redevelopment, the setting up by the Division of City Planning of an Urban Redevelopment Field Station under the direction of an experienced urban economist has been approved and will be inaugurated in the fall from funds obtained from the Bemis Foundation for Housing Research.

FREDERICK J. ADAMS.

GRAPHICS

Only minor alterations were made in subjects given by the Section of Graphics. In Engineering Drawing greater emphasis was given to the possibilities of drafting as a mathematical tool by the introduction of the bare principles of alignment charts.

Many members of the staff were engaged in teaching defense courses or doing other war work.

The stereoscopic drawing machine being built from funds from the National Research Council has just been completed. A heavy demand for these drawings has sprung from the extensive training programs of the services.

JOHN T. RULE.

DIVISION OF HUMANITIES

ECONOMICS AND SOCIAL SCIENCE

The past year in this Department, as in the rest of the Institute, has been one of rapid adjustment to war conditions. This adjustment has been made in our research, in our industrial service work, in our relations with governmental agencies, and in our teaching program. Though the subject, Post-War Problems, now appears on our list for the first time, significant changes have been made in the content and emphasis of virtually every subject of instruction that is offered by the Department. In our introductory Economic Principles, for example, the last month was devoted to a review of the economic problems of war. With reference to this subject, we are planning to introduce next year radical changes in the order of material and method of presentation — changes which are being made as the result of experiments conducted for some years with a group of chemical engineering students.

The first year of our new graduate program has on the whole been a successful one. We enrolled 12 students, all of whom obtained high standing in their studies. Though we have admitted about the same number of additional students for next year, demands of the armed services will probably leave us with only a few more than we now have. Our graduate students, both new and old, worked during the summer either in industrial plants or on government projects. The various members of the staff engaged in industrial and government work have enlisted the aid of the graduate students and will continue to do so on an increased scale. This practice not only contributes to the education of these young men but also enables them to render service to the nation while continuing their studies. Next year, moreover, we plan to use more graduate students to help in our teaching program, and they will replace the assistants and instructors who have joined the armed forces.

Since a separate report has been submitted on the activities of our Industrial Relations Section, it will not be necessary to enter into the details of this branch of our work. The various research activities mentioned in this report and the numerous

relationships that have been established with industrial enterprises have contributed to the intellectual development of our own staff and to the enrichment of our teaching program. It is only natural that in time of war those associated with the Section should devote themselves largely to war work. Though Professor Brown returned to us after his mission to Russia, he has been assisting both private industries and the Government in the settlement of labor disputes. Professor Myers has been on leave of absence working for the War Production Board. Professors Brown, McGregor, and Pigors are members of the Panel of the American Arbitration Association and from time to time act as arbitrators in labor disputes in this area. These three men, together with Professor Myers, Dr. Knickerbocker, and Dr. Landgraf, have been engaged recently by the United States Army to make a study of labor conditions in the shipping field, and their assignment covers the Gulf and the Pacific Coasts as well as the East.

Professor Maclaurin, assisted by R. L. Bishop, A. A. Bright, and D. C. Vandermeulen, three instructors in the Department, has been conducting a study in the economics of technological research under a grant from the Rockefeller Foundation. Professor H. A. Freeman, in conjunction with Professor G. P. Wadsworth and others, has been working on statistical problems of a highly technical character for the United States Army Air Corps and the United States Army Ordnance. Several members of this group are now located in Washington. In spite of these calls from the Army, a limited amount of industrial work is still being carried on in the statistical field. During the past year Professor Paul A. Samuelson has been engaged as a part-time consultant to the National Resources Planning Board of the Executive Offices of the President, supervising its research on, "Wartime Planning for Continuing Full Employment." Dr. Rosa has been carrying on investigations in the financial field and has been engaged during the past summer by the Federal Reserve Bank of New York. Professor Bissell, recently appointed associate professor, is with the War Shipping Board and will be absent at least during the first term of the coming academic year.

RALPH E. FREEMAN.

ENGLISH AND HISTORY

Although eight members of the staff have left for service in the Army and Navy, only minor changes in the program of the Department have thus far been necessary.

In an effort to improve the quality of expression in the theses of graduate students, the Department has cooperated with the Department of Chemistry by reading theses and submitting to the authors written criticisms of their work. A special subject in report writing in which the material used was closely related to the work in chemistry was given for the first time to seniors in Course V. In fact, each student presented both orally and in writing a preliminary report of the work he had done on his thesis. Members of the Chemistry Department were present when the oral reports were given.

The use of a recording machine in subjects emphasizing oral presentation has helped to stimulate interest in better speech and to impress upon students the desirability of overcoming certain habits of speech of which they were wholly unaware until they heard their talks reproduced. Much remains to be done in this direction.

With the hope of further dispelling the idea that English is not considered important in an engineering college and of assisting secondary schools in appraising their program in English for students who plan to go to engineering colleges, the Department has sent to the headmaster or principal of each school from which a student came to the Institute in the class of 1945 a letter explaining our subjects and requirements in freshman English and the degree of success which each student has had in meeting those requirements. The replies to the letters have been very gratifying. They indicate clearly that the heads of most secondary schools are eager to know the specific difficulties which each of their students had with English and that they are ready to make every possible effort to provide adequate training in the fundamentals of expression.

Professor Roberts and Professor de Santillana presented papers at the annual meeting of the American Historical Association in Chicago.

HOWARD R. BARTLETT.

GENERAL STUDIES

During the first term of the academic year 1941-42, 20 different subjects were listed in the General Study program with a total enrollment of 645 students and 21 in the second term with an enrollment of 458 students. As in previous years these 41 subjects were designed to give students a wide variety of choice in non-professional subjects in History, Philosophy, Literature, the Fine Arts, and the Social Sciences.

With the elimination of some of the subjects having smaller registration, the distribution of students among these elective subjects was reasonably satisfactory, varying from a minimum of eight to a maximum of 96. The subjects having larger registration were in Psychology, Human Relations, American History, Comparative Political Institutions, and the Introduction to Music.

In accordance with the decision of the faculty in December to maintain during the period of the war the present balance between professional and non-professional subjects, an abbreviated list of eight selected subjects, of which three were new, was made available to Seniors during the Summer Session. The enrollment in these subjects was as follows: Topography in the World War, 117; Comparative Political Institutions, 56; Psychology, 44; Reading Seminar, 24; Military History of the United States, 24; Introduction to Music, 20; Economics of War, 13; and Problems of the Far East, 13.

In the next academic year, in addition to most of the subjects previously listed, some new subjects are planned. A special instructor has been secured, at the request of a large group of students, to give instruction in the principles of debating. A new subject in Russian, offered by a special instructor in the Department of Modern Languages, will be included for credit in the General Study list.

The fundamental object of the program has been to provide an opportunity for non-professional studies of a humanistic character, especially to Juniors and Seniors. In many subjects as, for example, the History of Science, incidental training in oral and written expression is also secured through essays and oral discussion. The General Study Committee of the Faculty believes that the elective principle should be retained but that

the objects of the program may be attained by a shorter list, kept fluid to meet changing interests and needs. In such a list, each subject should be taught by a specialist, able to present his material with the same enthusiasm and authority which now applies to strictly professional subjects.

ROBERT G. CALDWELL.

MILITARY SCIENCE AND TACTICS

Instruction was given during the year in accordance with the War Department Program for the Reserve Officers' Training Corps.

Quotas for the Advanced Course have been increased as follows:

Engineer Unit.....	22	making a total of 100
Ordnance Unit.....	46	making a total of 100
Signal Corps Unit.....	26	making a total of 75
Chemical Warfare Unit.....	15	making a total of 45

Present indications are that the Advanced Course quotas will be filled for the ensuing year.

Information emanates from Washington to the effect that the R. O. T. C. will be continued, although it is indicated that some slight modifications are under consideration. Under recently announced policy we can expect that the tours of duty for Reserve Officers will be of shorter duration and that we probably shall have 50 per cent replacements each year.

As usual, all units of the Department were rated as "Excellent" by the Corps Area Inspectors (now First Service Command).

Rifle and pistol teams had a successful season.

E. W. PUTNEY.

MODERN LANGUAGES

Contrary to anticipations, the number of students taking foreign languages this last year showed, instead of a decline, an increase over 1940-41. As of November 1 each year, the total for 1940 was 316, for 1941, 356. French declined slightly, 58 to 54; German increased, 232 to 252; Spanish increased, 21 to 43. The increase in Spanish was partly due to the introduction of

a new subject in Intermediate Spanish, the results of which proved to be very satisfactory. The March, 1942, registration also showed a gain over March, 1941. In the second term the Elementary Spanish (L81) of the first term was repeated for the special benefit of the Senior Class and drew a fair number of good students.

Through the good offices of the Dean of Humanities, funds were made available for a new subject in Elementary Russian to be given this year by Mr. George Znamensky, graduate of the Imperial Theological Academy of Kiev, Russia, and holder of the degree of Master of Education, Harvard 1932, who has had long experience in teaching his native language in this country.

Although no subjects in Japanese or Chinese are given in the Institute, good dictionaries, grammars, and phonographic helps are being acquired and will be accessible in the Central or Department Libraries.

The Spanish *Grupo* and the *Cercle Français* continued their activities, emphasizing social contacts with similar organizations in other institutions. The Phonograph Room added to its equipment a number of valuable records, the most significant being a course in Russian. A phonograph course in Japanese is now available and one in Chinese will be later on.

E. F. LANGLEY.

REPORT OF THE TREASURER AUDITORS' CERTIFICATE

We have made an examination of the books and accounts of the Treasurer and the Bursar of the Massachusetts Institute of Technology for the year ended June 30, 1942, and the accompanying balance sheet at that date and statements of operating income and expense and current surplus for the year. We have reviewed the accounting procedures of the Institute, and without making a detailed audit of the transactions, have examined or tested accounting records of the Institute and other supporting evidence by methods and to the extent we deemed appropriate.

We checked the investment accounts at June 30, 1942, with lists of securities at that date, certified by the Old Colony Trust Company of Boston, Massachusetts, custodian, and examined the securities held by the custodian. We obtained independent confirmations of a substantial proportion of student loans, accounts receivable, and accounts payable, and made physical tests of the quantities included in the inventory of supplies.

As indicated in the Treasurer's report, the accompanying financial statements present neither the detail nor the extent of the operations resulting from war research contracts with the United States Government and with certain large industrial corporations. However, the accounts relating to the war research contracts have been included in our examination of the Institute's transactions for the year. As stated in a footnote to the balance sheet, there is included in the total of endowment and other funds, a special reserve fund of \$532,438.60, arising from war research projects and held against contingencies resulting from the war research program.

In our opinion, the accompanying balance sheet and statements of operating income and expense and current surplus, with supporting schedules and footnotes, present fairly, on the basis indicated, the financial condition of the Institute at June 30, 1942, and subject to the exception noted in the preceding paragraph relating to war research contracts, the results of its operations for the year ended at that date.

We satisfied ourselves by examination of the transactions for the year of the Joseph Hewett and the George S. Witmer Funds, of which the Massachusetts Institute of Technology acts as trustee, that the provisions of the trust agreements had been fulfilled.

Our examination embraced also the accounts of the Massachusetts Institute of Technology Pension Association for the same period, which, in our opinion, have been correctly stated.

September 18, 1942.

PATTERSON, TEELE & DENNIS,
Accountants and Auditors

REPORT OF THE AUDITING COMMITTEE

*To the Corporation of the
Massachusetts Institute of Technology:*

The Auditing Committee reports that the firm of Patterson, Teele & Dennis was employed to make an audit of the books and accounts of the Institute for the fiscal year ended June 30, 1942, and we submit herewith their certificate.

As stated in the Auditors' Certificate, their examination included the accounts of the Division of Industrial Coöperation, which carried on all war research under contracts with the United States Government and certain large industrial corporations.

Respectfully submitted,

VICTOR M. CUTLER
CHARLES T. MAIN
HENRY E. WORCESTER, *Chairman*

September 23, 1942

TREASURER'S STATEMENT

To the Corporation:

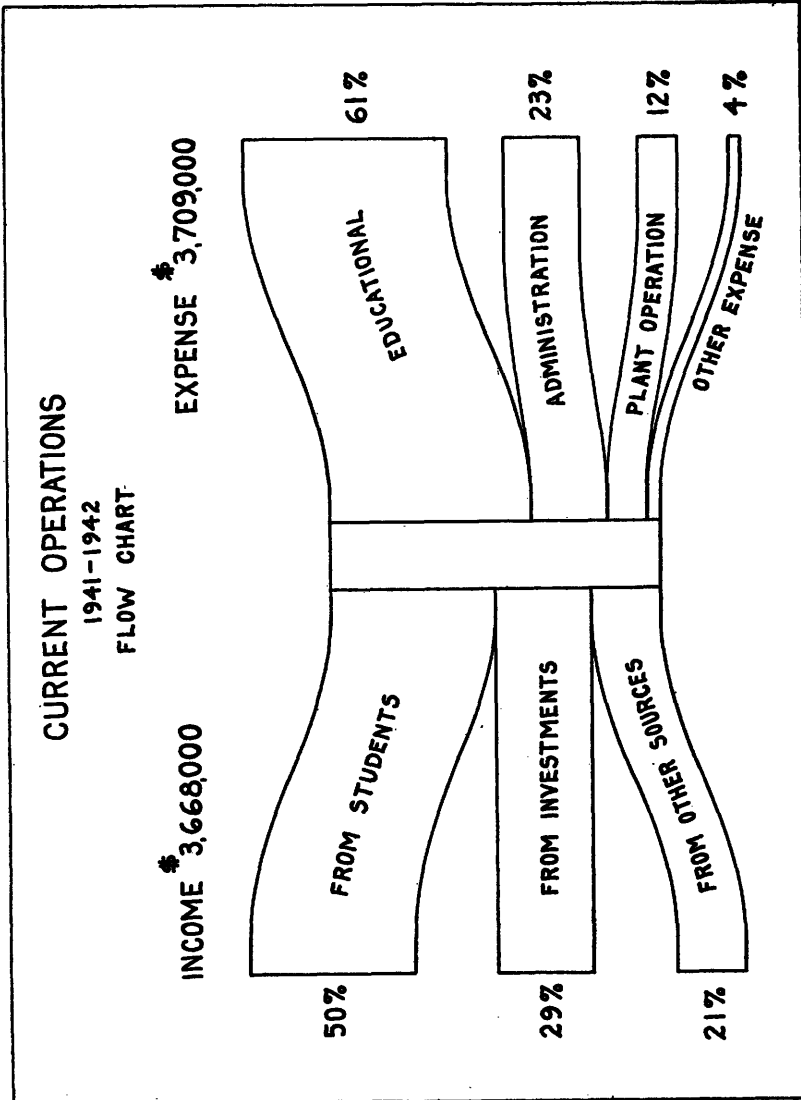
The financial condition of the Institute as of June 30, 1942, also the financial transactions during the year ended on that date are shown by the statements and schedules submitted herewith in accordance with Section VI of the By-Laws of the Corporation.

There are three major schedules presented, (A) BALANCE SHEET, (B) OPERATING INCOME AND EXPENSE FOR THE YEAR and (C) CURRENT SURPLUS, in the order named. The first two are broken down into supporting schedules designated A-1, B-1, etc.

EDUCATIONAL PLANT

The net increase of Educational Plant assets during the year was \$330,000 — almost entirely accounted for by the completion of the Chemical Engineering Laboratories. The total now exceeds \$17,000,000. During the year the last of the World War I group of temporary buildings — the Hangar Gymnasium and the so-called Airdrome — were demolished and their places are now taken by two large structures — one of seven stories, of first-class construction, the other a three-story wooden frame building — both occupied and used for war research purposes. These two buildings are not M. I. T. properties and are therefore not included in the Educational Plant Assets.

The sources of the greater part of this plant capital are indicated in Schedule A-9, Principal Gifts and Appropriations for the Educational Plant.



CURRENT OPERATIONS

The flow chart on the preceding page indicates the sources of budgeted income and the expenses for the past year. It excludes all income and expense of Dining Services, Dormitories, Current Funds, along with all war research projects.

Income from Students, including loans and scholarships, fell off \$16,000 and Income from Investments fell off \$73,000. The latter was partly because of the extensive borrowing of investment cash to finance war research projects. (See Schedule A.) Income from other sources increased \$403,000, principally by appropriations from the Special Reserve Fund.

Educational expenses were almost identical with those of last year but General and Special Administrative Expenses increased \$345,000.

The net effect of all operations was to decrease the current surplus by \$9,253.68, and it now stands at \$18,216.42.

No statements nor schedules are shown in this published report presenting the detail or extent of the operations resulting from war research contracts with the Government and with certain large industrial companies.

ENDOWMENT FUNDS

The book value of the Endowment and other funds is \$37,266,000, an increase of \$1,285,000 during the year. Capital gift additions during the year totaled \$534,000, and a special reserve fund, set up against contingencies arising from war projects after charges, stands at \$532,000. (Page 151.)

The Endowment Reserve Fund decreased \$20,000 and now stands at \$353,000.

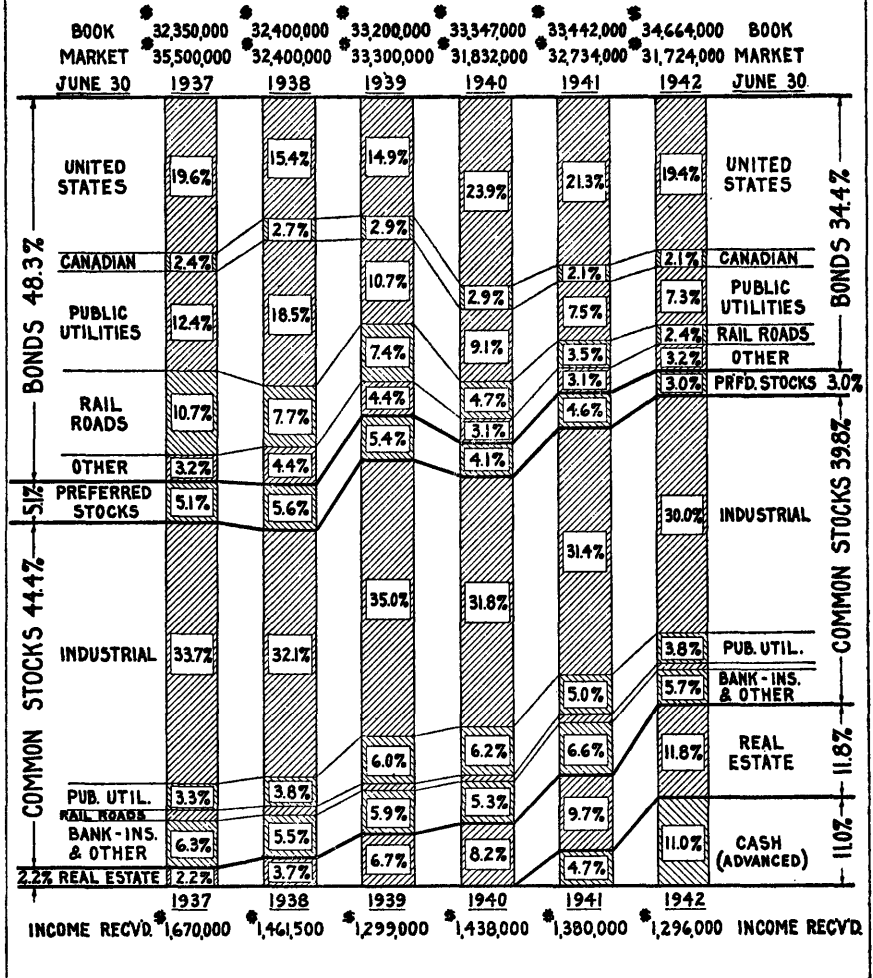
INVESTMENTS

SUMMARY OF INVESTMENTS AS OF JUNE 30, 1942

<i>General Investments</i>	<i>Book</i>	<i>Market</i>	<i>Per Cent at Market</i>
Bonds —			
United States Government	\$6,064,047	\$6,133,920	19.4
Canadian (all issues)	656,897	645,862	2.1
Public Utility	2,210,067	2,304,515	7.3
Railroad	810,792	773,812	2.4
Other	1,048,472	1,040,744	3.2
	<u>\$10,790,275</u>	<u>\$10,898,853</u>	<u>34.4</u>
Preferred Stocks	<u>\$1,204,522</u>	<u>\$946,437</u>	<u>3.0</u>
Common Stocks —			
Industrial	\$10,726,394	\$9,517,376	30.0
Public Utility	1,789,023	1,201,303	3.8
Railroad	199,002	139,962	.3
Bank, Insurance and Other	2,719,602	1,785,269	5.7
	<u>\$15,434,021</u>	<u>\$12,643,910</u>	<u>39.8</u>
Mortgages and Real Estate	<u>\$3,749,522</u>	<u>\$3,749,522</u>	<u>11.8</u>
Cash — Advanced (Schedule A)	<u>\$3,515,945</u>	<u>\$3,515,945</u>	<u>11.0</u>
Total General Investments	<u>\$34,694,285</u>	<u>\$31,754,667</u>	<u>100</u>
<i>Special Investments</i>	<u>\$2,561,545</u>	<u>\$2,451,128</u>	<u>...</u>
TOTAL INVESTMENTS	<u><u>\$37,255,830</u></u>	<u><u>\$34,205,795</u></u>	<u><u>...</u></u>

Changes in the pooled or general investments during the past five years are shown in the one hundred per cent component bar graph presented on page 126.

SUMMARY OF GENERAL INVESTMENTS AT MARKET



INVESTMENTS

The principal investment changes during the year were — a reduction in the bond holdings from 37.5 per cent to 34.4 per cent (this included a reduction in United States Government Bonds from 21.3 per cent to 19.4 per cent) — a reduction in preferred stocks from 4.6 per cent to 3 per cent and also in the common stocks from 43.5 per cent to 39.8 per cent. Mortgages and real estate holdings increased from 9.7 per cent to 11.8 per cent. The outstanding change was the increase in the amount of cash that was advanced for war research and building operations, 11 per cent, as against 4.7 per cent a year ago.

The market value of the general investments was 91 per cent of the book value as against 100 per cent in 1939, 95 per cent in 1940, and 98 per cent last year.

INVESTMENT INCOME

The income available for distribution to the pooled funds permitted an allocation of 3.93 per cent as against 4.10 per cent last year and 4.38 per cent the year before. The yield on all investments held as of June 30, 1942, figured at market value was 4.22 per cent as contrasted with 4.36 per cent last year and 4.32 per cent the year before.

GENERAL

On the pages immediately following will be found (1) a record of the gifts and bequests received by the Institute during the fiscal year, (2) a report of the operations of the Technology Loan Fund Committee, (3) a report of the Trustees of the M. I. T. Pension Association.

Respectfully submitted,

HORACE S. FORD, *Treasurer.*

September 1, 1942

GIFTS AND BEQUESTS RECEIVED DURING YEAR ENDED
JUNE 30, 1942

CAPITAL

Contributions to M. I. T. Alumni Fund, 1941-42 (additional)	\$36,184.79
Contributions to M. I. T. Alumni Fund (Gymnasium)	1,400.75
Contributions to M. I. T. Alumni Fund, 1942-43	59,370.69
Louie G. Applebee Estate for Applebee Fund (additional)	100.00
Clara H. Briggs Estate for Clara H. Briggs Fund	12,512.25
Frank H. Briggs Estate, for Major Briggs Fund (additional)	395.57
Arthur J. Conner for Arthur J. Conner Fund	7,000.00
Jennie A. Douglas Estate for James Watt Scholarship Fund	13,259.72
Herbert Fletcher Estate for Harold H. Fletcher Fund	10,000.00
Matilda A. Fraser Estate for Matilda A. Fraser Fund	859.89
Arthur B. Gilmore Estate for Arthur B. Gilmore Fund	10,000.00
Louise B. Hills Estate for John Marshall Hills Fund	366,181.10
Contribution to Class of 1922 Scholarship Fund	1,000.00
Arthur E. Kennelly Estate for Arthur E. Kennelly Fund (additional)	795.07
Alexander G. Mercer Estate for Hall-Mercer Scholarship Fund (additional)	3,351.61
Mary R. Miller Estate for E. F. and M. R. Miller Fund	10,000.00
Harriette A. Nevins Estate for George Blackburn Memorial Fund (additional)	105.14
Theodore N. Vail Estate for Theodore N. Vail Fund	800.00
Horace E. Wehmiller for Herman E. Wehmiller Fund	1,000.00
	<u>\$534,316.58</u>

MISCELLANEOUS

Contributions to Class of 1892 Fund	\$1,857.00
Contributions to Industrial Relations Fund	47,616.70
Contributions to Industrial Economics Graduate Program Fund	4,000.00
Contributions to Metallurgy Clay Research	325.00
Contributions to Oxy-Cellulose Research	650.00
Contribution to President's Fund	235.00
Contributions from Research Associates	20,700.00
American Institute of Baking for Fellowship	750.00
American Institute of Mining and Metallurgy (Open Hearth Scholarships)	1,200.00
American Oncologic Hospital for Oncologic Fund	4,000.00
Anonymous for Anonymous Fund	1,500.00
Anonymous for Metallurgy Department	375.00
Bausch & Lomb Optical Company for Fellowship	1,650.00
Beechnut Packing Company for Bartlett Arkell Fund	5,000.00
Carnegie Institution of Washington for Spectroscopic Research	2,500.00
Class of 1916 for Maclaurin Memorial (additional)	309.29
Continental Foods, Inc., for Lipton Fund	1,125.00
Corn Industries Research Foundation for Research	1,500.00
Diversey Corporation for Fellowship	2,000.00
E. I. duPont de Nemours & Co., for Fellowship	2,750.00

Eastman Kodak Company for Chemical Engineering Salaries . .	\$720.00
Eastman Kodak Company for Chemical Engineering Dept.	280.00
Ethyl Gasoline Corporation for Fellowship	750.00
Federation of Paint and Varnish Products for Fellowship	1,125.00
H. C. Frick Estate for H. C. Frick Fund	1,956.23
General Radio Company for Coöperative Course	1,200.00
Charles Hayden Foundation for Charles Hayden Memorial Scholarship Fund	30,000.00
William T. Henry Estate for William T. Henry Trust	6,400.00
Charles H. Hood Educational Trust for Scholarship in Health Education	1,200.00
L. J. & M. E. Horowitz for Building Engineering Construction Salaries (additional)	3,000.00
Godfrey M. Hyams Trust for Radiation Project (additional) . .	10,000.00
Johnson Research Foundation for Research	2,750.00
Capt. C. S. Joyce for Naval Architecture	720.00
W. K. Kellogg Foundation for Scholarship	9,700.00
W. K. Kellogg Foundation for Biology Department	6,000.00
Kroger Grocery and Baking Company for Fellowship	2,000.00
Lederle Laboratories, Inc., for Research	2,500.00
Lever Brothers Company for Fellowship	2,250.00
John R. Macomber for Sloan Fellowship	164.87
John R. Macomber for John R. Macomber Fund	100.00
John and Mary R. Markle Foundation for Cyclotron (additional)	18,000.00
James C. Melvin Trust for Scholarships (additional)	6,900.00
C. Lillian Moore Trust for Grimmons Fund (additional)	1,712.38
National Academy of Sciences for Research	2,000.00
National Lime Association for Building Construction and Engineering (additional)	5,700.00
Nutrition Foundation, Inc., for Karl T. Compton Special Fund	1,000.00
Alan Osborne for George Eastman Building Fund	70.00
Philadelphia Tech Club for Scholarship	50.00
Elizabeth Putnam Estate for Mathematics — Putnam Fund . .	200.00
Research Corporation for Research	15,200.00
Revere Brass and Copper, Inc., for Research	1,600.00
Rockefeller Foundation for Salaries and Research	110,728.91
Skinner Engineering Company for Markle Cyclotron	2,000.00
A. Slater & Sons, Inc., for M. E. Slater Fund	4,480.00
A. P. Sloan Foundation, Inc., for Sloan Fellowship Project . .	25,000.00
Standard Oil of California for Graduate Student	300.00
Textile Foundation for Research	3,750.00
Timber Engineering Company for Building Engineering and Construction	6,550.00
C. E. Tucker for Equipment	465.86
United Engineering Trustees, Inc., for Research	1,890.00
Vanadium Alloys Steel Company for Fellowship	1,925.00
Julia P. Whitney for Granger Whitney Fund	200.00
	<u>\$392,581.24</u>
TOTAL CAPITAL AND MISCELLANEOUS GIFTS	<u>\$926,897.82</u>

REPORT OF THE TRUSTEES OF THE
M. I. T. PENSION ASSOCIATION
COMPARATIVE BALANCE SHEET

ASSETS

	<i>June 30, 1941</i>	<i>June 30, 1942</i>
Cash	\$20,077.11	\$44,647.58
Investments (Schedule A-1)	1,452,057.04	1,548,034.45
Total	<u>\$1,472,134.15</u>	<u>\$1,592,682.03</u>

¹ Market Value June 30, 1942, \$1,386,847.00.

LIABILITIES

Teachers' Annuity Fund (5% Salary deduction, plus interest)	\$829,237.36	\$909,085.04
*M. I. T. Pension Fund (3% appropriation, plus interest)	531,754.94	577,806.80
Special Reserves for Annuity Payments	91,816.34	69,384.69
Total Liabilities	<u>\$1,452,808.64</u>	<u>\$1,556,276.53</u>
Reserve Fund (Surplus)	19,325.51	36,405.50
Total	<u>\$1,472,134.15</u>	<u>\$1,592,682.03</u>

* The Institute appropriates annually the equivalent of the 5% salary deduction, using 2% for payment of group insurance premiums.

RECEIPTS AND EXPENDITURES FOR 1941-1942

RECEIPTS

5 per cent salary deductions added to Teachers' Annuity Fund.	\$80,917.90
3 per cent appropriations added to M. I. T. Pension Fund.	48,748.73
Income from investments	59,118.87
Net profits on sales of securities	10,334.61
Contribution to Reserve Fund from M. I. T.	6,764.16
Total Receipts	<u>\$205,884.27</u>

EXPENDITURES

Paid on account of withdrawal or decease of members	\$10,048.63
Used to purchase annuities for retiring members	57,565.76
Pensions paid directly to former retired members	10,545.73
Losses on Sales of Securities	813.77
Amortization of Bond Premiums	6,362.50
Total Expenditures	<u>\$85,336.39</u>
Net Increase of Ledger Assets	<u>\$120,547.88</u>

TRUSTEES OF THE M. I. T. PENSION ASSOCIATION

Charles B. Breed	Horace S. Ford	Ralph E. Freeman
Karl T. Compton		John R. Macomber

BURSAR'S STATEMENT

To the Treasurer:

The following principal Schedules

BALANCE SHEET	(A)
OPERATING INCOME AND EXPENSE	(B)
CURRENT SURPLUS	(C)

together with their respective supporting schedules (A-1, B-1, etc.) have been drawn from the Institute's books of account. These summarize the financial condition of the Institute as of June 30, 1942, as well as the transactions during the year.

D. L. RHIND, *Bursar.*

W. A. HOKANSON, *Assistant Bursar.*

August 25, 1942

SCHEDULE A
BALANCE SHEET
JUNE 30, 1942

ENDOWMENT FUNDS, ASSETS

Securities and Real Estate (A-1)	\$33,739,884.59
Cash: Advanced for Current Purposes (per contra)	3,089,235.68
Advanced for Plant Construction (per contra)	437,183.99
Total	\$37,266,304.26

STUDENT LOAN ASSETS

Notes Receivable (A-3)	\$ 906,162.34
----------------------------------	---------------

CURRENT AND DEFERRED ASSETS

Cash: For General Purposes	\$ 603,845.11
Accounts Receivable (A-4)	2,485,853.24
Students' Fees and Deposits, Receivable	773.82
Deposit on Fire Insurance Account	46,160.77
Advances and Inventories for 1942-43 (A-5)	1,175,723.39
Total	\$ 4,312,356.33

EDUCATIONAL PLANT ASSETS

Land, Buildings and Equipment (A-8)	\$17,054,161.04
Cash: For Construction	11,254.65
Total	\$17,065,415.69
Total Assets	\$59,550,238.62

AGENCY FUNDS, ASSETS

Joseph Hewett Fund:	
Securities (A-1)	\$ 210,627.25
Cash	2,986.15
	\$ 213,613.40
M. I. T. Pension Association:	
Securities (A-1)	\$1,548,034.45
Cash	44,647.58
	1,592,682.03
George S. Witmer Fund:	
Securities (A-1)	\$ 40,813.66
Cash	1,672.72
	42,486.38
¹ Students' Deposits:	
Cash	52,748.60
Total	\$1,901,530.41

¹Held for safe keeping only.

SCHEDULE A
BALANCE SHEET
JUNE 30, 1942

ENDOWMENT FUNDS, CAPITAL

¹Endowment and Other Funds.....(A-2) \$37,266,304.26

Total..... \$37,266,304.26

STUDENT LOAN CAPITAL

Total.....(A-3) \$ 906,162.34

CURRENT LIABILITIES AND SURPLUS

Accounts Payable.....	\$ 386,345.15
Students' Fees and Deposits.....(A-6)	247,295.81
Current Funds.....(A-7)	533,905.37
1941-42, Salaries Payable.....	37,357.90
Borrowed from Investment Cash (per contra).....	3,089,235.68
Current Surplus (Schedule C).....	18,216.42
 Total.....	 <u>\$4,312,356.33</u>

EDUCATIONAL PLANT CAPITAL

Endowment for Educational Plant.....(A-9)	\$16,628,231.70
Borrowed from Investment Cash (per contra).....	437,183.99

Total..... \$17,065,415.69

Total Capital, Liabilities and Surplus..... \$59,550,238.62

AGENCY FUNDS, CAPITAL

Joseph Hewett Fund..... \$ 213,613.40

M. I. T. Pension Association..... 1,592,682.03

George S. Witmer Fund..... 42,486.38

¹Students' Deposits..... 52,748.60

Total..... \$1,901,530.41

¹ Held for safe keeping only.

² Including Special Reserve Fund \$532,438.60 arising from war research projects and held against contingencies resulting from this war research program (page 151).

SCHEDULE B

†OPERATING INCOME FOR YEAR 1941-42

*Supporting
Schedules*

EDUCATIONAL AND GENERAL

FROM STUDENTS

Fees — Cash	\$1,513,864.09	
Fees Receivable	590.16	
Scholarship Awards	184,572.00	
Student Loans	98,363.00	
	<hr/>	
Total, Tuition Fees	\$1,797,389.25	
Locker, Examination and Other Fees	8,106.62	
	<hr/>	
		\$1,805,495.87

FROM INVESTMENTS

Income — General and Special		
Investments (A-1)	\$1,404,634.11	
Less: Income Added to Funds (A-2)	327,775.77	
	<hr/>	
		1,076,858.34

FROM OTHER SOURCES

Federal Aid — Acts 1862 and 1890	\$22,200.03	
Appropriations from Funds (B-1)	295,553.33	
From Special Reserve Fund	348,761.86	
Contributions and Other Income . . . (B-2)	88,835.31	
	<hr/>	
		755,350.53
Total, Educational and General		\$3,637,704.74

AUXILIARY ACTIVITIES

Dormitories (*excl. Graduate House) (B-11)	\$143,249.57	
Dining Service, Walker Memorial . . . (B-13)	188,926.56	
Dining Service, Graduate House (B-14)	144,846.42	
	<hr/>	
Total, Auxiliary Activities		477,022.55

Total Operating Income	<hr/> <hr/>	\$4,114,727.29
----------------------------------	-------------	----------------

* See Investments (A-1), also (B-12).

† Not including receipts for War Research Accounts.

SCHEDULE B

OPERATING EXPENSE FOR YEAR 1941-1942

	<i>Supporting Schedules</i>	
EDUCATIONAL AND GENERAL		
EDUCATIONAL EXPENSES		
Salaries	(B-3)	\$1,916,006.80
Departmental Expenses	(B-4)	249,729.45
Library and Museum	(B-5)	92,009.60
		<hr/>
		\$2,257,745.85
GENERAL EXPENSES		
Salaries of Officers		\$128,200.00
Clerical and Office Expense Admin- istration	(B-6)	150,875.27
General Administration Expense . . .	(B-7)	308,998.33
Special Administration Expense . . .	(B-7a)	272,170.69
		<hr/>
		860,244.29
PLANT OPERATION		
Department of Buildings and Power (B-8)		\$416,284.47
Fire Insurance		4,193.55
		<hr/>
		420,478.02
OTHER EXPENSES		
Medical Department	(B-9)	\$63,254.96
Undergraduate Budget Board	(B-10)	108,342.91
		<hr/>
		171,597.87
Total, Educational and General		<hr/> <hr/> \$3,710,066.03
AUXILIARY ACTIVITIES		
Dormitories (*excl. Graduate House) (B-11)		\$112,168.59
Dining Service, Walker Memorial . . .	(B-13)	188,926.56
Dining Service, Graduate House . . .	(B-14)	144,846.42
		<hr/>
Total Auxiliary Activities		445,941.57
Total Operating Expenses		<hr/> <hr/> \$4,156,007.60
Less Excess Expense over Income (Schedule C)		41,280.31
Total		<hr/> <hr/> <hr/> \$4,114,727.29

¹ Not including disbursements for War Research Accounts.

* See Investments (A-1), also (B-12).

SCHEDULE C
CURRENT SURPLUS

BALANCE, June 30, 1941		\$27,470.10
Add:		
Adjustments of Previous Years' Operations:		
Appropriations unexpended	\$29,185.23	
Past due interest received	3,086.55	
Student fees, overdue	431.22	
Miscellaneous	398.83	
	\$33,101.83	
Less: Students and Other Accounts, charged off.	1,075.20	
	32,026.63	
Less: Excess Expense 1941-42 (Schedule B)		\$59,496.73
		41,280.31
BALANCE, June 30, 1942		\$18,216.42

SCHEDULE A-1

INVESTMENTS — GENERAL

<i>Par Value</i>				<i>Book Value</i>	<i>Net Income.</i>	
U. S. GOVERNMENT AND MUNICIPAL BONDS						
\$1,250,000	U. S. Treasury	¾s	1944	\$1,248,046.87	\$9,375.00	
1,250,000	U. S. Treasury	2s	1950	1,262,000.00	25,000.00	
1,080,000	U. S. Treasury	2¼s	1955	1,083,000.00	7,180.18	
500,000	U. S. Treasury	2½s	1948	525,000.00	12,500.00	
1,000,000	U. S. Treasury	2½s	1954	1,006,000.00	23,912.93	
560,000	U. S. Treasury	2½s	1958	560,000.00	10,994.58	
100,000	United States G.	2½s	1953-4	100,000.00	1,250.00	
280,000	Commodity Credit	1½s	1945	280,000.00	1,792.54	
	Income from bonds sold				24,061.14	
	Total U. S. Government Bonds				\$6,064,046.87	\$116,066.37
CANADIAN GOVERNMENT AND OTHER BONDS						
\$250,000	Canada	2¼s	1944	\$249,322.50	\$5,625.00	
100,000	Canada	5s	1952	99,427.64	5,000.00	
35,000	Ottawa	5s	1945	35,000.00	1,750.00	
24,325	Toronto	4s	1948	22,622.25	973.32	
50,000	Gatineau Power	3¾s	1969	49,125.00	1,875.00	
200,000	Shawinigan W. & P.	4½s	1967	201,400.00	9,000.00	
	Income from bonds sold or matured				1,933.75	
	Total Canadian Bonds				\$656,897.39	\$26,157.07
INDUSTRIAL BONDS						
\$200,000	Eastern Gas and Fuel	4s	1956	\$176,382.02	\$8,000.00	
200,000	National Dairy Prod.	3¾s	1960	208,500.00	6,500.00	
61,000	National Oil Prod.	3¾s	1955	61,400.00	1,982.50	
37,000	National Oil Prod.	3¾s	1957	37,800.00	— 3.34	
17,000	Smith & Wesson	5½s	1948	16,830.00	935.00	
100,000	Schenley Distillers	4s	1952	100,000.00	— 86.68	
	Income from bonds sold or called				799.58	
	Total Industrial Bonds				\$600,912.02	\$18,127.06
Shares						
INDUSTRIAL PREFERRED STOCKS						
500	American Tobacco			\$69,405.80	\$3,000.00	
2,500	Champion Spark Plug			257,505.15	2,812.50	
500	Poor & Co. A.			9,965.00	1,500.00	
1,000	U. S. Steel			103,412.85	7,000.00	
	Income from stocks sold				18,837.52	
	Total Industrial Preferred Stocks				\$440,288.80	\$33,150.02

SCHEDULE A-1 — (Continued)

Shares		Book Value	Net Income
INDUSTRIAL COMMON STOCKS			
3,000	Air Reduction	\$128,235.92	\$6,000.00
3,030	American Can	307,408.67	12,120.00
2,000	Borden	44,486.17	2,800.00
6,140	Borg Warner	218,806.72	12,280.00
2,000	Caterpillar Tractor	92,194.13	4,000.00
5,200	Central Aguirre Associates	137,114.33	8,710.00
100	Christiana Securities	250,000.00	10,665.00
3,000	Chrysler Corp.	162,997.30	5,250.00
2,000	Dewey & Almy Chemical	55,000.00	2,100.00
3,498	Dow Chemical	443,568.25	10,255.50
2,200	Draper Corp.	101,780.20	8,800.00
2,872	du Pont de Nemours	352,284.24	16,514.00
13,000	Eastman Kodak	1,141,298.11	91,000.00
12,080	General Electric	283,516.80	21,140.00
5,000	General Motors	177,670.67	15,000.00
900	Hazel Atlas Glass	97,273.12	4,500.00
2,000	Hercules Powder	146,973.25	5,800.00
7,500	Humble Oil & Refining	486,789.80	15,000.00
2,720	Inland Steel	291,443.32	13,600.00
722	International Business Machines	89,711.14	4,179.00
3,100	International Harvester	123,863.98	9,920.00
7,240	International Nickel, Canada	261,895.60	12,308.00
1,500	Johns Manville	147,559.10	4,125.00
7,400	Kennecott Copper	312,987.29	22,200.00
4,000	Kroger Grocery and Baking	132,053.95	8,000.00
2,500	Liquid Carbonic	37,825.90	3,125.00
4,137	Monsanto Chemical	300,309.15	12,411.00
3,400	Montgomery Ward	197,775.27	6,800.00
3,800	National Biscuit	118,500.80	6,080.00
2,000	National Lead	65,726.17	1,250.00
3,010	National Steel	231,536.41	9,782.50
5,100	Owens Illinois Glass	298,685.89	12,750.00
2,400	J. C. Penney	216,229.29	12,000.00
3,000	Phillips Petroleum	115,193.57	6,750.00
3,520	Pittsburgh Plate Glass	195,235.96	16,720.00
5,753	Procter & Gamble	265,767.26	11,506.00
5,000	St. Joseph Lead	219,990.15	10,000.00
3,005	Sears Roebuck	231,839.16	12,753.75
1,000	Sherwin Williams	100,988.10	3,750.00
4,165	Standard Oil, Cal.	140,714.83	7,080.50

SCHEDULE A-1 — (Continued)

<i>Shares</i>			<i>Book Value</i>	<i>Net Income</i>	
INDUSTRIAL COMMON STOCKS (Continued)					
3,000	Standard Oil, Ind.		\$89,606.25	\$4,500.00	
12,000	Standard Oil, N. J.		531,455.94	30,000.00	
1,500	Timken Roller Bearing.		106,312.70	4,875.00	
6,520	Union Carbide & Carbon.		377,929.12	19,560.00	
700	United Aircraft.		28,341.79	2,100.00	
2,000	United Carbon.		137,565.94	6,000.00	
5,550	United Fruit.		254,110.84	22,200.00	
3,844	United Shoe Machinery.		262,187.28	15,376.00	
3,000	Westinghouse Electric.		215,654.30	6,887.00	
	Income from stocks sold.			1,200.00	
	Total Industrial Common Stocks		\$10,726,394.13	\$571,723.25	
<i>Par Value</i>					
PUBLIC UTILITY BONDS					
\$150,000	Alabama Power.	3½s	1972	\$152,500.00	—\$364.59
50,000	Am. Tel. & Tel.	3s	1956	54,200.00	750.00
50,000	Am. Tel. & Tel.	3¼s	1961	50,900.00	1,625.00
100,000	Appalachian Elec.	3¼s	1970	106,400.00	3,250.00
100,000	Arkansas Power & Light	5s	1956	100,700.00	5,000.00
150,000	Bell Tel. of Pa.	5s	1948	154,000.00	7,500.00
29,000	Conn. Light & Power ..	7s	1951	27,313.22	2,030.00
100,000	Cons. Edison, N. Y. ...	3¼s	1946	100,300.00	3,250.00
100,000	Consumers Power.	3¼s	1969	104,900.00	3,250.00
99,000	Dayton Pr. & Lt.	3s	1970	102,700.00	2,970.00
100,000	Kentucky Utilities.	4½s	1955	101,200.00	4,500.00
103,000	Miss. River Power.	5s	1951	95,897.52	5,150.00
78,000	North American.	3½s	1949	78,610.00	2,730.00
100,000	North Boston Ltg.	3½s	1947	100,000.00	3,500.00
81,000	Ohio Edison.	4s	1967	86,400.00	3,240.00
50,000	Ohio Power.	3¼s	1968	51,200.00	1,625.00
50,000	Phila. Elec.	3½s	1967	52,700.00	1,750.00
75,000	Providence Gas.	4s	1963	74,437.50	3,000.00
90,000	Pub. Service Colorado .	3½s	1964	91,600.00	3,150.00
200,000	Southern Cal. Edison ..	3s	1965	209,000.00	6,000.00
50,000	Syracuse Lighting.	5s	1951	52,100.00	2,500.00
165,000	Texas Power & Light ..	5s	1956	169,300.00	8,250.00
100,000	West Penn. Power.	5s	1963	93,709.16	5,000.00
	Income from bonds sold, called or matured				13,022.36
	Total Public Utility Bonds		\$2,210,067.40	\$92,677.77	

SCHEDULE A-1 — (Continued)

<i>Shares</i>			<i>Book Value</i>	<i>Net Income</i>	
	PUBLIC UTILITY PREFERRED STOCKS				
2,000	Cons. Edison N. Y.		\$201,450.97	\$10,000.00	
2,000	Public Service N. J., 5%		203,853.58	10,000.00	
3,000	United Corp., Pref.		139,276.75	9,000.00	
	Income from stocks sold			6,368.76	
	<i>Total Public Utility Preferred Stocks ...</i>		<u>\$544,581.30</u>	<u>\$35,368.76</u>	
	PUBLIC UTILITY COMMON STOCKS				
5,000	Am. Gas & Elec.		\$203,626.96	\$9,500.00	
4,053	American Tel. & Tel.		535,599.03	36,443.25	
12,550	Boston Edison.		453,719.85	24,975.00	
10,000	Commonwealth Edison.		285,340.24	18,000.00	
5,076	Detroit Edison.		149,190.09	7,539.90	
1,000	Lynn Gas & Electric.		90,000.00	5,000.00	
1,500	Pacific Gas & Elec.		39,225.60	3,000.00	
1,000	Western Mass.		32,322.00	1,800.00	
	<i>Total Public Utility Common Stocks ...</i>		<u>\$1,789,023.77</u>	<u>\$106,258.15</u>	
<i>Par Value</i>	RAILROAD BONDS				
\$50,000	Atch. Top. & Santa Fe.	4s	1995	\$48,235.00	\$2,000.00
50,000	B. & O., P., L.E. & W. Va.	4s	1951	48,668.75	2,000.00
50,000	Northern Pacific	4s	1997	45,128.29	2,000.00
100,000	Oreg. R.R. & Navigation.	4s	1946	99,410.83	4,000.00
100,000	Pennsylvania.	4½s	1960	112,600.00	4,500.00
50,000	Pere Marquette	5s	1956	44,410.34	2,500.00
50,000	St. L., Iron Mt. & So.	4s	1933	44,143.00	2,000.00
50,000	Southern Pacific.	3¾s	1946	49,375.00	1,875.00
50,000	Southern Pacific.	4s	1955	47,625.00	2,000.00
100,000	Union Pacific.	4s	1947	100,000.00	4,000.00
75,000	Washington Term.	3½s	1945	68,196.37	2,625.00
100,000	Washington Term.	4s	1945	103,000.00	4,000.00
	Income from bonds sold or matured.				8,713.90
	<i>Total Railroad Bonds.</i>			<u>\$810,792.58</u>	<u>\$42,213.90</u>
<i>Shares</i>			<i>Book Value</i>	<i>Net Income</i>	
	RAILROAD PREFERRED STOCKS				
2,000	Atch., Topeka & S. Fe.		\$139,627.30	.....
1,000	Pere Marquette, Pr. Pref.		86,024.40	.....
	<i>Total Railroad Preferred Stocks.</i>		<u>\$219,651.70</u>	.....

SCHEDULE A-1 — (Continued)

<i>Shares</i>			<i>Book Value</i>	<i>Net Income</i>
	RAILROAD COMMON STOCKS			
1,500	Chesapeake & Ohio.....		\$73,380.45	\$5,250.00
400	Norfolk & Western.....		58,542.78	6,000.00
500	Union Pacific.....		67,078.33	3,000.00
	Income from stocks sold.....			315.00
	<i>Total Railroad Common Stocks.....</i>		<u>\$199,001.56</u>	<u>\$14,565.00</u>
	<i>Par Value</i>			
	OTHER BONDS			
\$200,000	Adams Express..... 4¼s	1946	\$199,388.81	\$8,500.00
26,775	Lawyers Mtge. Inv. Corp. 5½s	1940	26,529.92	557.82
161,000	Niagara Shares Corp. ... 5½s	1950	157,640.49	8,855.00
64,000	Railway & Lt. Securities. 3¼s	1955	64,000.00	2,080.00
	Income from bonds sold, called or matured			1,991.64
	<i>Total Other Bonds.....</i>		<u>\$447,559.22</u>	<u>\$21,984.46</u>
	SHARES BANK STOCKS			
3,000	Bankers Trust, N. Y.....		\$183,645.00	\$5,550.00
1,600	Central Hanover Bk. & Tr., N. Y.....		194,225.00	6,400.00
5,000	Chase National, N. Y.....		261,212.50	7,000.00
3,000	Chemical Bank & Trust, N. Y.....		190,618.75	5,400.00
1,000	Cont. Ill. Nat. Bank, Chicago.....		80,301.50	4,000.00
4,936	First National, Boston.....		297,874.96	9,872.00
100	First National, N. Y.....		206,970.60	9,000.00
1,000	Guaranty Trust, N. Y.....		312,043.04	10,380.00
500	Harris Trust & Savings, Chicago.....		146,450.00	5,750.00
6,000	National City, N. Y.....		260,712.50	6,000.00
100	New England Trust, Boston.....		40,000.00	3,000.00
	<i>Total Bank Stocks.....</i>		<u>\$2,174,053.85</u>	<u>\$72,352.00</u>
	INSURANCE AND OTHER STOCKS			
275	Boston.....		\$180,786.00	\$5,775.00
2,500	Hartford.....		156,168.76	6,250.00
1,500	Phoenix.....		107,424.50	4,500.00
1,000	Stone & Webster, Inc.....		29,507.65	600.00
680	Boston R. E. Trust.....		71,661.64	680.00
	Income from stocks written off.....			176.40
	<i>Total Insurance Stocks.....</i>		<u>\$545,548.55</u>	<u>\$17,981.40</u>

SCHEDULE A-1 — (Continued)

<i>Par Value</i>		<i>Book Value</i>	<i>Net Income</i>
	MORTGAGE NOTES		
\$49,000	Edward Babb & Co.	\$49,000.00	\$2,238.75
4,300	Bigelow	4,300.00	215.00
137,625	Jordan Marsh Co.	137,625.00	5,617.50
2,350	McKenzie	2,350.00	123.96
7,000	Mt. Vernon Street	7,000.00	.....
12,625	Palfrey, J. G.	12,625.00	622.04
54,000	Walton Trust	54,000.00	2,261.94
150,000	M. I. T. Dormitory	150,000.00	6,000.00
	(M. I. T. Fraternity Houses)		
17,900	Alpha Tau Omega	17,900.00	590.62
14,000	Beta Theta Pi	14,000.00	737.50
28,000	Delta Kappa Epsilon	28,000.00	1,433.32
3,000	Delta Tau Delta	3,000.00	150.00
12,250	Kappa Sigma	12,250.00	643.87
5,909	Phi Beta Delta	5,909.47	306.29
2,250	Phi Beta Epsilon	2,250.00	132.33
6,000	Phi Delta Theta	6,000.00	328.13
7,250	Phi Gamma Delta	7,250.00	443.75
7,000	Phil Kappa Sigma	7,000.00	375.00
5,125	Phi Mu Delta	5,125.00	201.57
9,500	Theta Chi	9,500.00	492.99
	<i>Total Mortgage Notes</i>	<u>\$535,084.47</u>	<u>\$22,914.56</u>
	REAL ESTATE		
	111 Bay State Road, Boston	\$20,800.00	\$832.00
	Broad and High Streets, Boston	100,000.00	5,151.35
	Franklin Street, Boston	289,750.00	6,807.61
	Newbury Street, Boston	45,000.00	-2,535.69
	Memorial Drive, Cambridge	40,000.00	-1,597.35
	Graduate House, Cambridge	644,095.89	12,000.00
	Bexley Hall, Cambridge	190,638.74	7,660.00
	*Gloversville, N. Y.	104,819.53	5,116.43
	Harrisonburg, Va.	30,814.12	1,392.26
	New London, Conn.	268,398.28	12,884.69
	Plattsburg, N. Y.	228,728.90	10,461.64
	Somerville, Mass.	633,993.24	19,738.25
	Taunton, Mass.	220,402.38	9,070.10
	Willimantic, Conn.	178,960.72	8,136.00
	Worcester, Mass.	218,035.40	9,918.00
	<i>Total Real Estate</i>	<u>\$3,214,437.20</u>	<u>\$105,035.29</u>

* Not including first mortgage of \$40,860 with Connecticut Mutual Life Insurance Co. of Hartford, Conn.

SCHEDULE A-1 — (Continued)

	<i>Book Value</i>	<i>Net Income</i>
RECAPITULATION, GENERAL INVESTMENTS		
U. S. Treasury and Other Bonds . . .	\$6,064,046.87	\$116,066.37
Canadian Gov. and Other Bonds . . .	656,897.39	26,157.07
Industrial Bonds	600,912.02	18,127.06
Industrial Preferred Stocks	440,288.80	33,150.02
Industrial Common Stocks	10,726,394.13	571,723.25
Public Utility Bonds	2,210,067.40	92,677.77
Public Utility Preferred Stocks	544,581.30	35,368.76
Public Utility Common Stocks	1,789,023.77	106,258.15
Railroad Bonds	810,792.58	42,213.90
Railroad Preferred Stocks	219,651.70	.....
Railroad Common Stocks	199,001.56	14,565.00
Other Bonds	447,559.22	21,984.46
Bank Stocks	2,174,053.85	72,352.00
Insurance and Other Stocks	545,548.55	17,981.40
Mortgage Notes	535,084.47	22,914.56
Real Estate	3,214,437.20	105,035.29
<i>Total General Investments</i>	<i>\$31,178,340.81</i>	<i>\$1,296,575.06</i>

INVESTMENTS — SPECIAL*Par Value
or Shares***INVESTMENTS, BABSON FUND**

950 American Public Welfare Trust	\$10,000.00	\$237.50
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INVESTMENTS (Real Estate), ALBERT FARWELL BEMIS FUND

Miscellaneous building lots and land in Wellesley and Weston carried at	\$42,179.24
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INVESTMENTS, MALCOLM COTTON BROWN FUND

\$2,500 United States G. 2½s 1954	\$2,500.00	\$.....
45 General Electric	1,529.55	63.00
Income from bonds sold		41.85
<i>Total Brown Fund</i>	<i>\$4,029.55</i>	<i>\$104.85</i>

SCHEDULE A-1 — (Continued)

<i>Par Value or Shares</i>			<i>Book Value</i>	<i>Net Income</i>
INVESTMENTS, COFFIN MEMORIAL FUND				
\$6,000	U. S. Treasury	3s 1948	\$6,000.00	\$180.00
350	Light & Pr. Sec. Co., Pfd.		35,000.00	2,100.00
7	du Pont		1,114.41	40.25
	<i>Total Coffin Fund</i>		<u>\$42,114.41</u>	<u>\$2,320.25</u>
INVESTMENTS, DRAPER FUND				
\$29,900	United States G.	2½s 1954	\$29,900.00	\$
10,000	Ontario	5s 1959	9,950.00	500.00
8,000	Cons. Edison, N. Y.	3¼s 1946	8,000.00	1210.00
10,000	Detroit Edison, D.	3s 1970	10,675.00	1273.31
20,000	Montana Power	3¾s 1966	19,852.49	750.00
13,000	Ohio Power	3¼s 1968	13,450.00	1397.50
10,000	Texas Power & Light	5s 1956	10,160.00	1480.00
	Income from bonds sold			620.29
	<i>Total Draper Fund</i>		<u>\$101,987.49</u>	<u>\$3,231.10</u>
INVESTMENTS, ARTHUR D. LITTLE MEMORIAL FUND				
466	A. D. Little, Inc., Pfd.		\$46,600.00	\$2,796.00
15,543	A. D. Little, Inc., Com.		110,860.00	27,715.00
	<i>Total Little Fund</i>		<u>\$157,460.00</u>	<u>\$30,511.00</u>
INVESTMENTS, RICHARD LEE RUSSEL FUND				
\$3,000	Mortgage Note (participation)		\$3,000.00	\$150.00
INVESTMENTS, SOLAR ENERGY FUND				
100	Godfrey L. Cabot, Inc.		\$647,700.00	\$20,000.00
INVESTMENTS, FRANCES E. AND SAMUEL M. WESTON FUNDS				
\$8,950	Mortgage Note, Bartlett		\$8,950.00	\$357.96
INVESTMENTS, JONATHAN WHITNEY FUND				
\$50,000	United States G.	2½s 1954	\$50,000.00	\$
25,000	U. S. Treasury	2½s 1972	25,000.00	714.78
40,000	U. S. Treasury	2½s 1958	40,000.00	785.32
41,000	U. S. Treasury	3¼s 1945	41,000.00	1,332.50
40,000	Canada	5s 1952	40,000.00	2,000.00
\$25,000	Appalachian Electric	3¼s 1970	\$26,640.00	\$812.50
25,000	Bangor Hydro. Elec.	3¾s 1966	25,800.00	937.50
25,000	Montana Power	3¾s 1966	24,826.99	937.50
16,000	Niagara Falls Pr.	3½s 1966	16,780.00	560.00

¹Net after Premium Amortization.

SCHEDULE A-1 — (Continued)

<i>Par Value or Shares</i>			<i>Book Value</i>	<i>Net Income</i>
INVESTMENTS, JONATHAN WHITNEY FUND (Continued)				
\$25,000	Pacific Gas & Elec.	3¾s 1961	\$25,360.00	\$937.50
25,000	So. Cal. Edison	3s 1965	26,150.00	750.00
20,000	Va. Elec. Power	3½s 1968	21,000.00	700.00
50,000	Kansas City Term	4s 1960	42,750.00	2,000.00
25,000	Southern Pacific	4s 1955	24,471.99	1,000.00
25,000	Virginia Ry.	3¾s 1966	25,360.00	937.50
250	Boston Edison		8,250.00	625.00
250	Bankers Trust, N. Y.		14,187.50	462.50
250	First National, Boston		11,525.00	500.00
50	Guaranty Trust, N.Y.		14,850.00	600.00
100	duPont		15,279.10	487.50
500	General Electric		13,188.05	350.00
300	Standard Oil, N. J.		13,074.45	562.50
200	Union Carbide & Carbon		13,888.00	300.00
150	United Fruit		10,690.25	300.00
	Income from bonds sold			1,676.84
	<i>Total Whitney Fund</i>		<u>\$570,071.33</u>	<u>\$20,269.44</u>
INVESTMENTS, TECHNOLOGY LOAN FUND				
\$50,000	United States G.	2½s 1954	\$50,000.00	\$
80,000	U. S. Treasury	2½s 1958	80,000.00	1,570.64
55,000	U. S. Treasury	3¾s 1947	55,500.00	1,856.25
80,000	U. S. Treasury	2½s 1954	82,700.00	1,913.04
50,000	U. S. Treasury	2½s 1972	50,000.00	504.15
60,000	U. S. Treasury	2¾s 1954	63,700.00	1,650.00
14,000	Pac. Gas & Elec.	3¾s 1961	14,000.00	525.00
50,000	Southern Bell Tel.	3¼s 1962	48,985.01	1,625.00
300	American Can		22,935.23	600.00
200	du Pont		29,304.00	800.00
1,000	General Electric		25,813.25	700.00
400	Union Carbide and Carbon		27,726.00	600.00
300	United Fruit		21,360.20	600.00
50	Guaranty Trust, N. Y.		12,825.00	300.00
500	National City, N. Y.		12,375.00	250.00
207	Engineers Pub. Service		15,000.00	1,138.52
1,000	North American		36,447.80	1,445.50
600	Standard Oil, N. J.		26,456.99	772.50
1,250	Stone & Webster, Inc.		36,698.75	750.00
	Income from bonds sold or called			3,617.68
	<i>Total Technology Loan Fund</i>		<u>\$711,827.23</u>	<u>\$21,218.28</u>

*Par Value
or Shares**Book Value**Net Income***SCHEDULE A-1 — (Continued)****INVESTMENTS, EDWIN A. WYETH FUND**

\$25,000	United States, G.	2½s	1954	\$25,000.00	\$
16,000	U. S. Treasury	2½s	1958	16,000.00	314.13
10,000	U. S. Treasury	2¾s	1965	10,000.00	275.00
25,000	U. S. Treasury	4s	1954	25,500.00	1,500.00
100	American Can.			11,944.73	400.00
125	American Tel. & Tel.			12,953.12	1,125.00
200	General Electric			7,832.20	350.00
250	General Motors			8,500.00	750.00
200	Standard Oil, N. J.			10,133.70	351.50
100	Union Carbide and Carbon			4,640.00	300.00
100	United Shoe Machinery			8,941.25	400.00
125	Bankers Trust, N. Y.			5,968.75	106.25
25	Guaranty Trust, N. Y.			6,400.00	150.00
10,000	Central N. Y. Power	3¾s	1962	10,200.00	1325.00
9,000	Columbia Gas & Elec.	5s	1952	8,310.78	450.00
10,000	Cons. Edison, N. Y.	3¾s	1946	10,000.00	325.00
13,000	Miss. River Power	5s	1951	13,100.00	1600.00
16,000	So. Cal., Edison	3s	1965	16,700.00	1430.00
10,000	Texas Pr. & Lgt.	5s	1956	10,100.00	1450.00
15,000	Balt. & Ohio	4s	1948	15,000.00	600.00
5,000	Can. Pac. Eq. Tr.	5s	1944	5,000.00	250.00
10,000	Kansas City Term	4s	1960	10,000.00	400.00
10,000	Union Pacific	4s	1947	10,000.00	400.00
	Income from investments sold				406.79
	<i>Total Wyeth Fund</i>			\$262,224.53	\$9,658.67

Grand Total, General and Special Investments. \$33,739,884.59 \$1,404,634.11

(Schedule A)

(Schedule B)

AGENCY FUNDS*Par Value
or Shares**Book Value**Net Income***INVESTMENTS, JOSEPH HEWETT FUND**

\$50,000	United States, G.	2½s	1954	\$50,000.00	\$
19,000	Dom. of Canada	5s	1952	19,000.00	950.00
12,000	Adams Express	4¾s	1946	12,000.00	510.00
15,000	Cent. N. Y. Power	3¾s	1962	15,000.00	562.50
15,000	Puget Sound Power & Lt.	4½s	1950	15,000.00	675.00

¹Net after Premium Amortization.

SCHEDULE A-1 — (Continued)

<i>Par Value or Shares</i>			<i>Book Value</i>	<i>Net Income</i>
INVESTMENTS, JOSEPH HEWETT FUND (Continued)				
\$15,000	Alabama Power	3½s 1972	\$15,200.00	\$ - 36.46
23,500	Texas Power & Light . . .	5s 1956	23,850.00	1,175.00
4,000	Can. Pac. Ry.	5s 1944	4,000.00	200.00
100	Bankers Trust, N. Y.		4,775.00	85.00
20	Guaranty Trust, N. Y.		5,130.00	120.00
100	American Can.		7,520.00	200.00
50	du Pont de Nemours		8,271.55	287.50
300	General Electric		8,107.50	210.00
200	Standard Oil, N. J.		8,709.00	200.00
100	Union Carbide and Carbon		6,944.20	150.00
100	United Fruit		7,120.00	200.00
	Income from bonds sold or called			2,205.03
	<i>Total Hewett Fund</i>		<u>\$210,627.25</u>	<u>\$7,693.57</u>
			(Schedule A)	

INVESTMENTS, M. I. T. PENSION ASSOCIATION				
\$187,500	U. S. Treasury	2½s 1972	\$187,500.00	\$1,890.55
40,000	U. S. Treasury	2½s 1958	40,000.00	785.32
25,000	U. S. Treasury	3¼s 1945	25,000.00	812.50
60,000	U. S. Treasury	4s 1954	62,400.00	2,400.00
50,000	United States, G.	2½s 1954	50,000.00	.....
35,000	Dom. of Canada	5s 1952	35,000.00	1,750.00
25,000	Gen. American Investors 3½s 1952		25,350.00	875.00
35,000	Alabama Power	3½s 1972	35,612.50	- 85.07
50,000	Appalachian Elec.	3¼s 1970	53,300.00	1,625.00
30,000	Bell Tel. of Pa.	5s 1948	30,600.00	1,500.00
50,000	Central N. Y. Power	3¾s 1962	50,000.00	1,875.00
50,000	Detroit Edison	4s 1965	52,400.00	2,000.00
28,000	Miss. River Power	5s 1951	28,000.00	1,400.00
70,000	Pac. Gas & Elec.	3¾s 1961	75,400.00	2,625.00
25,000	Texas Pr. & Lgt.	5s 1956	25,700.00	1,250.00
25,000	Atlantic Coast Line	4s 1952	24,753.15	1,000.00
25,000	Balt. & Ohio	4s 1948	25,000.00	1,000.00
25,000	Can. Pacific Eq.	5s 1944	25,000.00	1,250.00
50,000	Kansas City Term	4s 1960	51,700.00	2,000.00
50,000	Pennsylvania Co.	4s 1963	50,000.00	2,000.00
35,000	Southern Pacific	4s 1955	33,638.79	1,400.00

SCHEDULE A-1 — (Continued)

<i>Shares</i>		<i>Book Value</i>	<i>Net Income</i>
INVESTMENTS, M. I. T. PENSION ASSOCIATION (Continued)			
200	du Pont	\$29,504.20	\$800.00
200	Eastman Kodak	28,500.00	1,400.00
600	General Motors	29,332.24	1,800.00
1,200	General Electric Co.	52,597.76	1,680.00
179	Int. Business Machines	26,189.25	1,038.00
800	National Biscuit	21,220.31	1,280.00
400	Sears Roebuck	29,391.89	1,700.00
800	Standard Oil, N. J.	41,923.73	1,557.50
500	Union Carbide and Carbon	41,575.54	1,200.00
500	United Fruit	38,575.21	1,800.00
500	United Shoe Machinery	35,910.62	1,750.00
200	Am. Tel. & Tel. Co.	34,184.26	1,800.00
400	Bankers Trust Co.	23,687.50	740.00
500	Chemical Bank and Trust	25,187.50	900.00
500	First National Bank, Boston	27,500.00	1,000.00
50	Guaranty Trust, N. Y.	12,550.00	300.00
	Real Estate, Albany, N. Y.	63,850.00	3,429.50
	Income from investments sold or called		5,590.57
	Total Pension Association	<u>\$1,548,034.45</u>	<u>\$59,118.87</u>
		(Schedule A)	

INVESTMENTS, GEORGE S. WITMER FUND

<i>Par Value or Shares</i>			<i>Book Value</i>	<i>Net Income</i>
\$5,000	United States, G. 2½s 1954		\$5,000.00	\$.
2,000	Niagara Shares Corp. . . . 5½s 1950		2,000.00	110.00
19,500	Whitehaven St., Washington, D. C., Mtge.		19,500.00	975.00
50	General Electric		1,718.25	70.00
25	General Motors		1,310.96	75.00
40	Standard Oil, N. J.		1,812.60	100.00
30	Union Carbide and Carbon		2,051.85	90.00
30	Bankers Trust, N. Y.		1,665.00	55.50
	Real Estate, Sanford, Fla.		5,755.00	255.00
	Income from investments sold			311.00
	Total Witmer Fund		<u>\$40,813.66</u>	<u>\$2,041.50</u>
			(Schedule A)	

SCHEDULE A-2
ENDOWMENT FUNDS FOR GENERAL PURPOSES

No.	Restricted Funds	Funds,	Investments	Other	Expended or	Funds,
		June 30, 1941	Income Added to Principal	Receipts	Transferred	June 30, 1942
101	George Robert Armstrong . . .	\$5,000.00	\$	\$	\$	\$5,000.00
103	George Blackburn Mem.	961,044.70	. . . . .	105.14	. . . . .	961,149.84
104	Clara H. Briggs . . . . .	. . . . .	. . . . .	12,512.25	. . . . .	12,512.25
105	Charles Choate	35,858.15	. . . . .	. . . . .	. . . . .	35,858.15
107	Eben S. Draper	102,240.61	. . . . .	1,214.25	. . . . .	103,454.86
109	Coleman du Pont	221,325.48	. . . . .	. . . . .	. . . . .	221,325.48
111	Eastman Contract	9,498,869.55	. . . . .	. . . . .	. . . . .	9,498,869.55
113	George Eastman (Building)	406,727.54	. . . . .	25,070.00	. . . . .	431,797.54
115	Charles W. Eaton	260,648.19	. . . . .	. . . . .	. . . . .	260,648.19
117	Educational Endowment	7,573,834.60	. . . . .	. . . . .	. . . . .	7,573,834.60
119	Martha Ann Edwards	30,000.00	. . . . .	. . . . .	. . . . .	30,000.00
121	William Endicott	25,000.00	. . . . .	. . . . .	. . . . .	25,000.00
123	Francis Appleton Foster	1,000,000.00	. . . . .	. . . . .	. . . . .	1,000,000.00
125	John W. Foster	299,650.64	. . . . .	. . . . .	. . . . .	299,650.64
127	Alexis H. French	5,000.00	. . . . .	. . . . .	. . . . .	5,000.00
129	Jonathan French	25,212.48	. . . . .	. . . . .	. . . . .	25,212.48
131	Henry C. Frick	1,831,053.42	. . . . .	. . . . .	. . . . .	1,831,053.42
133	General Endowment	1,527,449.00	. . . . .	. . . . .	. . . . .	1,527,449.00
135	Eliot Granger	21,568.43	. . . . .	. . . . .	. . . . .	21,568.43
136	Charles Hayden	1,000,000.00	. . . . .	. . . . .	. . . . .	1,000,000.00
137	John Marshall Hills . . . . .	. . . . .	. . . . .	366,181.10	. . . . .	366,181.10
138	James Fund	163,654.21	. . . . .	. . . . .	. . . . .	163,654.21
139	Katherine B. Lowell	5,000.00	. . . . .	. . . . .	. . . . .	5,000.00
141	Thomas McCammon	15,000.00	. . . . .	. . . . .	. . . . .	15,000.00
142	M. I. T. Alumni Equipment . . . . .	. . . . .	491.25	12,500.00	. . . . .	12,991.25
143	M. I. T. Alumni (Gym) . . . . .	. . . . .	. . . . .	1,400.75	1,400.75	. . . . .
144	M. I. T. Alumni (1940-42)	42,861.62	1,296.90	45,331.24	55,972.76	33,517.00
145	M. I. T. Alumni (1942-43) . . . . .	. . . . .	275.10	59,370.69	19,050.85	40,594.94
146	Kate M. Morse	25,000.00	. . . . .	. . . . .	. . . . .	25,000.00
147	Everett Morss	25,000.00	. . . . .	. . . . .	. . . . .	25,000.00
149	Richard Perkins	50,000.00	. . . . .	. . . . .	. . . . .	50,000.00
150	J. W. and B. L. Randall	83,452.36	. . . . .	. . . . .	. . . . .	83,452.36
151	Wm. Barton Rogers Mem.	250,225.00	. . . . .	. . . . .	. . . . .	250,225.00
152	Saltonstall Fund	64,071.41	628.80	. . . . .	. . . . .	64,700.21
153	Samuel E. Sawyer	4,764.40	. . . . .	. . . . .	. . . . .	4,764.40
155	Andrew Hastings Spring	50,000.00	. . . . .	. . . . .	. . . . .	50,000.00
156	George G. Stone	4,677.35	. . . . .	. . . . .	. . . . .	4,677.35
157	Seth K. Sweetser	25,061.62	. . . . .	. . . . .	. . . . .	25,061.62
159	William J. Walker	23,613.59	. . . . .	. . . . .	. . . . .	23,613.59
161	Horace Herbert Watson	34,076.69	. . . . .	. . . . .	. . . . .	34,076.69
163	Albion B. K. Welch	5,000.00	. . . . .	. . . . .	. . . . .	5,000.00
165	Everett Westcott	171,394.00	. . . . .	. . . . .	. . . . .	171,394.00
167	Marion Westcott	238,202.00	. . . . .	. . . . .	. . . . .	238,202.00
168	George Wigglesworth	26,099.75	102.18	. . . . .	. . . . .	26,201.93
169	Edwin A. Wyeth	249,932.09	4,848.87	2,698.12	4,848.87	252,630.21
		<u>\$26,387,568.88</u>	<u>\$7,643.10</u>	<u>\$526,383.54</u>	<u>\$81,273.23</u>	<u>\$26,840,322.29</u>

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.

SCHEDULE A-2 — (Continued)

No.	Unrestricted Funds	Funds, June 30, 1941	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1942
171	Anonymous	\$	\$	\$1,500.00	\$	\$1,500.00
172	Edmund D. Barbour	20,736.94	. . . . .	. . . . .	. . . . .	20,736.94
173	Stephen L. Bartlett	207,517.61	. . . . .	. . . . .	81,266.57	126,251.04
176	Ellis Hollingsworth	10,000.00	. . . . .	. . . . .	. . . . .	10,000.00
187	Industrial Fund	11,698.34	. . . . .	160,244.79	58,976.46	112,966.67
190	John Wells Morss	50,000.00	. . . . .	. . . . .	. . . . .	50,000.00
195	Emerette O. Patch	2,276.61	. . . . .	. . . . .	. . . . .	2,276.61
197	Frank G. Webster	25,000.00	. . . . .	. . . . .	. . . . .	25,000.00
		<u>\$327,229.50</u>	<u>.</u>	<u>\$161,744.79</u>	<u>\$140,243.03</u>	<u>\$348,731.26</u>

FUNDS FOR DESIGNATED AND SPECIAL PURPOSES

SPECIAL DEPOSIT AND AGENCY FUNDS

209	Special Reserve	\$	\$	\$931,869.52	\$399,430.92	\$532,438.60
210	Endowment Reserve	373,722.23	19,029.73	195,783.00	235,480.44	353,054.52
211	Income Equalization Reserve	41,633.56	1,634.88	. . . . .	. . . . .	43,268.44
212	Albert Fund	5,083.90	125.76	. . . . .	2,503.26	2,706.40
*214	Alpha Chi Sigma House Fund	3,466.84	133.62	10.00	100.00	3,510.46
215	Alumni Tennis Courts . . . . .	. . . . .	196.50	5,000.00	. . . . .	5,196.50
216	Anonymous (1924)	2,362.05	94.32	. . . . .	. . . . .	2,456.37
*217	Ass'n of Class Secretaries	2,334.79	90.39	. . . . .	. . . . .	2,425.18
*218	Basket Ball Fund	3,183.34	125.76	316.66	. . . . .	3,625.76
219	Bess Bigelow Fund	29,498.04	1,159.35	. . . . .	. . . . .	30,657.39
220	Biology-Rockefeller Found. . . . .	. . . . .	2,751.00	70,000.00	18,793.00	53,958.00
222	Ednah Dow Cheney	16,456.52	648.45	. . . . .	396.09	16,708.88
223	Class of 1914	795.88	31.44	. . . . .	. . . . .	827.32
224	Class of 1918 (Organ Fund)	487.40	23.58	243.50	. . . . .	754.48
225	Class of 1923	12,647.42	499.11	409.43	206.34	13,349.62
226	Class of 1924	23,319.94	923.55	409.10	116.58	24,536.01
227	Class of 1925	14,728.41	577.71	104.89	89.01	15,322.00
229	Class of 1926	18,636.87	738.84	351.70	15.11	19,712.30
230	Class of 1927	17,239.09	707.40	1,202.97	. . . . .	19,149.46
231	Class of 1928	36,583.02	1,438.38	. . . . .	. . . . .	38,021.40
232	Class of 1929	12,863.82	510.90	649.99	. . . . .	14,024.71
233	Class of 1930	1,842.48	78.60	689.14	. . . . .	2,610.22
237	Class of 1934	474.77	19.65	. . . . .	. . . . .	494.42
238	Class of 1935	389.08	15.72	. . . . .	. . . . .	404.80
239	Class of 1936	540.40	19.65	. . . . .	. . . . .	560.05
240	Class of 1939	724.35	27.51	22.00	. . . . .	773.86
241	Arthur J. Conner . . . . .	. . . . .	125.76	7,000.00	. . . . .	7,125.76
245	Cosmic Terr. Research	23,172.87	550.20	995.95	8,832.01	15,887.01
*247	Drama Club Theatre Fund	449.92	15.72	. . . . .	. . . . .	465.64
248	Matilda A. Fraser . . . . .	. . . . .	. . . . .	859.89	. . . . .	859.89
249	Hayden Fd. (Dental Clinic)	10,246.00	196.50	773.00	6,846.54	4,368.96
250	Industrial Economics	8,332.00	334.05	4,000.00	6,600.00	6,066.05
251	Industrial Relations	107,415.03	5,109.00	47,616.70	15,449.27	144,691.46
253	Major Briggs Fund	31,898.95	1,257.60	395.57	. . . . .	33,552.12
*255	M. I. T. Employees Fund	225.77	3.93	2.00	105.35	126.35
260	M. I. T. Teachers' Insurance	7,357.56	. . . . .	32,499.17	31,749.21	8,107.52

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.
* Funds deposited with the Institute, for endowment purposes only.

SCHEDULE A-2 — (Continued)

No.		Funds, June 30, 1941	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1942
SPECIAL DEPOSIT AND AGENCY FUNDS						
<i>(Continued)</i>						
261	M. I. T. Teachers' Insurance (Special).....	\$74,094.42	\$2,947.50	\$16,908.84	\$17,777.30	\$76,173.46
*263	M. I. T. Alumni Association Permanent Funds.....	92,322.20	3,611.67	2,383.16	2,004.00	96,313.03
264	Henry A. Morss Nautical..	2,061.52	82.53	.....	.....	2,144.05
265	Louisville Technology Foundation Fund.....	50.00	.....	.....	50.00	.....
266	Class of 1917, Special.....	117.03	3.93	.....	.....	120.96
268	Class of 1934, Special.....	636.82	23.58	.....	.....	660.40
270	Class of 1898 Loan.....	10,060.75	396.93	.....	.....	10,457.68
272	Class of 1874.....	234.49	7.86	.....	.....	242.35
273	Class of 1887.....	.....	70.74	2,668.58	.....	2,739.32
274	President's Fund, Special..	10,164.00	400.86	.....	.....	10,564.86
277	W. P. Ryan, Special.....	3,543.82	117.90	.....	1,024.31	2,637.41
278	Sears Terminal Reserve ...	.....	110.04	2,827.23	.....	2,937.27
279	Sedgwick Memorial Lecture	12,379.22	487.32	171.25	.....	13,037.79
281	Lillie C. Smith.....	5,498.70	216.15	.....	.....	5,714.85
*283	Walter B. Snow.....	5,756.05	231.87	2,000.00	500.00	7,487.92
285	Technology Matrons' Teas.	9,122.62	353.70	.....	494.00	8,982.32
286	W. B. S. Thomas' Fund...	2,305.99	90.39	.....	.....	2,396.38
290	Undergraduate Activities Trust.....	1,435.35	55.02	.....	.....	1,490.37
*292	Undergraduate Publication Trust.....	17,386.58	668.10	.....	500.00	17,554.68
294	Undergraduate Dues, Res. Athletics.....	9,332.94	381.21	1,000.00	.....	10,714.15
296	Undergraduate Dues, Res. Contingent.....	16,798.00	656.31	.....	190.00	17,264.31
298	Charles Dann Waterbury..	13,448.28	526.62	.....	.....	13,974.90
		<u>\$1,094,861.08</u>	<u>\$50,634.79</u>	<u>\$1,329,163.24</u>	<u>\$749,252.74</u>	<u>\$1,725,406.37</u>
FUNDS FOR SALARIES						
301	Samuel C. Cobb For General Salaries....	\$36,551.31	.....	.....	.....	\$36,551.31
303	Sarah H. Forbes For General Salaries....	500.00	.....	.....	.....	500.00
305	George A. Gardner For General Salaries....	20,000.00	.....	.....	.....	20,000.00
309	James Hayward Professorship of Engineering	18,800.00	.....	.....	.....	18,800.00
311	William P. Mason Professorship of Geology.	18,800.00	.....	.....	.....	18,800.00
313	Henry B. Rogers For General Salaries....	25,000.00	.....	.....	.....	25,000.00
315	Nathaniel Thayer Professorship of Physics.	25,000.00	.....	.....	.....	25,000.00
317	Elihu Thomson Professorship of Elec. Eng.	23,680.87	.....	.....	.....	23,680.87
		<u>\$168,332.18</u>	.....	.....	.....	<u>\$168,332.18</u>

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.

* Funds deposited with the Institute, for investment purposes only.

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SCHEDULE A-2 — (Continued)

No.	Funds, June 30, 1941	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1942	
FUNDS FOR LIBRARY						
321	Walter S. Barker.....	\$10,437.24	\$408.72	\$.....	\$400.00	\$10,445.96
325	Frank Harvey Cilley.....	85,405.33	3,356.22	.....	3,667.00	85,094.55
327	Charles Lewis Flint.....	5,777.50	227.94	.....	225.00	5,780.44
341	William Hall Kerr.....	4,105.91	161.13	.....	28.60	4,238.44
343	George A. Osborne.....	10,659.94	416.58	.....	15.83	11,060.69
345	Arthur Rotch, Architectural ..	6,899.18	271.17	.....	86.55	7,083.80
349	John Hume Tod.....	3,311.75	129.69	.....	16.37	3,425.07
351	Theodore N. Vail Mem. Library	69,876.72	2,751.00	\$800.00	2,800.00	70,627.72
		<u>\$196,473.57</u>	<u>\$7,722.45</u>	<u>\$800.00</u>	<u>\$7,239.35</u>	<u>\$197,756.67</u>
FUNDS FOR DEPARTMENTS						
401	William Parsons Atkinson....	\$13,082.20	\$.....	\$.....	\$.....	\$13,082.20
403	Frank Walter Boles Memorial.	33,817.41	1,328.34	.....	1,080.17	34,065.58
405	William E. Chamberlain.....	7,309.77	.....	.....	.....	7,309.77
407	Chemical Engineering Practice	257,772.97	.....	.....	.....	257,772.97
409	Crosby Honorary Fund.....	1,880.62	74.67	.....	.....	1,955.29
410	Susan E. Dorr.....	95,955.67	.....	.....	.....	95,955.67
411	George Eastman.....	400,000.00	.....	.....	.....	400,000.00
412	Harold H. Fletcher.....	.....	161.13	\$10,000.00	.....	10,161.13
413	Arthur E. Kennelly.....	66,556.99	2,633.10	795.07	436.60	69,548.56
414	Arthur Dehon Little Memorial.	157,460.00	30,511.00	.....	30,511.00	157,460.00
416	John Lawrence Mauran.....	2,853.02	113.97	.....	.....	2,966.99
417	George Henry May.....	5,000.00	.....	.....	.....	5,000.00
419	Susan Minns.....	40,000.00	.....	.....	.....	40,000.00
420	Forris Jewett Moore.....	24,182.43	951.06	.....	8.69	25,124.80
422	Edward D. Peters.....	6,452.14	255.45	.....	869.80	5,837.79
423	Pratt Naval Architectural....	392,523.76	2,846.00	.....	2,846.00	392,523.76
425	Richards Memorial.....	795.81	31.44	.....	.....	827.25
426	Frances E. Roper.....	2,000.00	.....	.....	.....	2,000.00
427	Arthur Rotch.....	25,000.00	.....	.....	.....	25,000.00
429	W. T. Sedgwick.....	76,203.83	2,994.66	.....	.....	79,198.49
431	Edmund K. Turner.....	270,881.31	2,661.59	.....	.....	273,542.90
433	William Lyman Underwood....	13,447.92	.....	.....	.....	13,447.92
434	William R. Ware.....	15,016.19	589.50	196.25	801.91	15,000.03
		<u>\$1,908,192.04</u>	<u>\$45,151.91</u>	<u>\$10,991.32</u>	<u>\$36,554.17</u>	<u>\$1,927,781.10</u>
FUNDS FOR RESEARCH						
441	Albert Farwell Bemis.....	\$298,611.94	\$11,738.91	\$183.71	\$4,115.37	\$306,419.19
442	Albert Farwell Bemis Land Account.....	53,079.24	.....	.....	10,900.00	42,179.24
443	Samuel Cabot.....	50,702.99	1,992.51	.....	.....	52,695.50
449	Ellen H. Richards.....	23,767.05	935.34	.....	800.00	23,902.39
451	Charlotte B. Richardson.....	45,959.28	1,807.80	.....	.....	47,767.08
452	William Barton and Emma Savage Rogers.....	146,130.77	5,741.73	.....	.....	151,872.50
453	Solar Energy.....	649,151.70	20,000.00	.....	16,633.36	652,518.34
454	Henry N. Sweet.....	9,866.20	389.07	.....	.....	10,255.27
456	Textile Research Fund.....	1,737.18	62.88	.....	141.73	1,658.33
		<u>\$1,279,006.35</u>	<u>\$42,668.24</u>	<u>\$183.71</u>	<u>\$32,590.46</u>	<u>\$1,289,267.84</u>

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.

SCHEDULE A-2 — (Continued)

No.		Funds, June 30, 1941	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1942
FUNDS FOR FELLOWSHIPS						
462	American Institute of Baking..	\$121.15	\$.....	\$750.00	\$796.52	\$74.63
463	William Sumner Bolles.....	28,157.41	1,108.26	.....	600.00	28,665.67
464	Malcolm Cotton Brown.....	12,536.94	104.85	91.44	9,343.75	3,389.48
465	Francis W. Chandler.....	10,640.81	416.58	.....	.....	11,057.39
466	Collamore.....	14,725.02	577.71	.....	600.00	14,702.73
467	Dalton Graduate Chemical ...	7,533.19	294.75	.....	150.00	7,677.94
469	du Pont de Nemours.....	.....	.....	2,750.00	2,750.00	.....
474	Rebecca R. Joslin.....	10,043.18	393.00	.....	.....	10,436.18
476	Wilfred Lewis.....	5,899.29	231.87	.....	.....	6,131.16
478	Moore.....	33,252.58	1,308.69	.....	880.00	33,681.27
480	Willard B. Perkins.....	6,951.58	275.10	.....	.....	7,226.68
484	Proprietors Locks and Canals.	2,744.56	106.11	.....	750.00	2,100.67
486	Henry Bromfield Rogers.....	25,646.80	1,006.08	.....	900.00	25,752.88
488	Richard Lee Russel.....	3,376.35	150.00	.....	.....	3,526.35
490	Henry Saltonstall.....	10,948.74	428.37	.....	.....	11,377.11
492	James Savage.....	12,998.83	510.90	.....	.....	13,509.73
493	Sloan.....	1,000.00	.....	.....	1,000.00	.....
495	Susan H. Swett.....	10,160.44	400.86	.....	.....	10,561.30
496	Gerard Swope.....	138.75	.....	.....	138.75	.....
497	Frank Hall Thorp.....	10,818.82	424.44	.....	400.00	10,843.26
498	Luis Francisco Verges.....	10,195.71	400.86	.....	200.00	10,396.57
		<u>\$217,890.15</u>	<u>\$8,138.43</u>	<u>\$3,591.44</u>	<u>\$18,509.02</u>	<u>\$211,111.00</u>
FUNDS FOR SCHOLARSHIPS						
501	Elisha Atkins.....	\$5,075.65	\$200.43	\$.....	\$200.00	\$5,076.08
503	Billings Student.....	50,442.62	1,980.72	.....	2,000.00	50,423.34
504	Jonathan Bourne.....	10,100.82	396.93	.....	400.00	10,097.75
505	Albert G. Boyden.....	602,729.05	23,686.11	225.00	24,241.82	602,398.34
506	Harriet L. Brown.....	7,707.19	302.61	.....	300.00	7,709.80
508	Nino Teshler Catlin.....	1,008.41	39.30	.....	50.00	997.71
509	Lucius Clapp.....	4,961.22	196.50	.....	200.00	4,957.72
510	Class of 1896.....	16,988.01	275.10	.....	.....	7,263.11
512	Class of 1909.....	2,935.98	113.97	2.82	.....	3,052.77
513	Class of 1922.....	.....	23.58	1,000.00	.....	1,023.58
515	Class of 1938.....	660.85	23.58	9.15	.....	693.58
516	Lucretia Crocker.....	80,071.55	3,147.93	.....	2,600.00	80,619.48
517	Isaac W. Danforth.....	5,006.98	196.50	.....	200.00	5,003.48
520	Ann White Dickinson.....	40,140.10	1,575.93	.....	1,600.00	40,116.03
521	Thomas M. Drown.....	50,476.04	1,984.65	.....	2,000.00	50,460.09
524	Farnsworth.....	5,369.32	212.22	.....	300.00	5,281.54
525	Charles Lewis Flint.....	5,100.44	200.43	.....	200.00	5,100.87
526	Sarah S. Forbes.....	3,397.85	133.62	.....	100.00	3,431.47
527	Hall-Mercer.....	60,464.29	2,397.30	3,351.61	2,400.00	63,813.20
528	Charles Hayden Memorial....	63,546.60	3,537.00	30,090.76	10,890.00	86,284.36

† Exclusive of student notes receivable. (See Schedule A-3.)

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SCHEDULE A-2 — (Continued)

No.	Funds, June 30, 1941	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1942	
FUNDS FOR SCHOLARSHIPS						
<i>(Continued)</i>						
531	George Hollingsworth	\$5,045.48	\$196.50	\$	\$200.00	\$5,041.98
533	T. Sterry Hunt	3,013.11	117.90	. . . . .	100.00	3,031.01
534	William F. Huntington	5,049.83	196.50	. . . . .	200.00	5,046.33
536	Joy Scholarships	17,901.38	703.47	. . . . .	700.00	17,904.85
538	William Litchfield	5,205.85	204.36	. . . . .	200.00	5,210.21
539	Elisha T. Loring	5,216.02	204.36	. . . . .	400.00	5,020.38
541	Lowell Institute Scholarship	2,926.43	113.97	. . . . .	. . . . .	3,040.40
542	Rupert A. Marden	2,063.20	82.53	. . . . .	100.00	2,045.73
543	George Henry May	18,034.13	314.40	599.50	300.00	8,648.03
545	James H. Mirrlees	2,651.12	106.11	. . . . .	200.00	2,557.23
546	Fred W. Morrill	2,028.70	78.60	. . . . .	100.00	2,007.30
547	Nichols Scholarship	5,026.02	196.50	. . . . .	200.00	5,022.52
548	Charles C. Nichols	5,188.59	204.36	. . . . .	200.00	5,192.95
550	John Felt Osgood	5,006.38	196.50	. . . . .	200.00	5,002.88
551	George L. Parmelee	17,448.24	683.82	. . . . .	1,000.00	17,132.06
552	Richard Perkins	50,168.00	1,972.86	. . . . .	2,000.00	50,140.86
553	Thomas Adelbert Read	21,349.88	837.09	. . . . .	900.00	21,286.97
554	John Roach	6,330.40	247.59	. . . . .	350.00	6,227.99
555	William P. Ryan Memorial	5,002.37	200.43	72.57	. . . . .	5,275.37
556	John P. Schenkl	43,862.96	1,725.27	. . . . .	1,700.00	43,888.23
557	Thomas Sherwin	5,166.77	204.36	. . . . .	250.00	5,121.13
558	Horace T. Smith	32,955.55	1,296.90	. . . . .	1,200.00	33,052.45
559	Sons and Daughters New England Colony	640.70	23.58	. . . . .	. . . . .	664.28
560	Samuel E. Tinkham	2,428.39	94.32	. . . . .	100.00	2,422.71
562	F. B. Tough	721.93	27.51	. . . . .	. . . . .	749.44
563	Susan Upham	1,007.45	39.30	. . . . .	. . . . .	1,046.75
565	Vermont Scholarship	25,927.58	1,017.87	. . . . .	800.00	26,145.45
567	Ann White Vose	60,645.69	2,381.58	. . . . .	3,000.00	60,027.27
568	Arthur M. Waitt	9,759.95	385.14	. . . . .	450.00	9,695.09
569	James Watt . . . . .	. . . . .	. . . . .	13,259.72	. . . . .	13,259.72
570	Herman E. Weihmiller . . . . .	. . . . .	. . . . .	1,000.00	. . . . .	1,000.00
571	Louis Weissbein	4,154.80	165.06	. . . . .	300.00	4,019.86
573	Frances Erving Weston	8,074.05	316.53	. . . . .	300.00	8,090.58
574	Samuel Martin Weston	5,413.13	218.28	. . . . .	400.00	5,231.41
576	Amasa J. Whiting	4,543.92	176.85	. . . . .	200.00	4,520.77
577	Granger Whitney . . . . .	. . . . .	. . . . .	200.00	200.00	. . . . .
578	Elizabeth Babcock Willmann	5,521.09	216.15	. . . . .	200.00	5,537.24
		<u>\$1,391,662.06</u>	<u>\$55,770.96</u>	<u>\$49,811.13</u>	<u>\$64,131.82</u>	<u>\$1,433,112.33</u>
FUNDS FOR PRIZES						
580	Babson	\$10,331.25	\$237.50	\$	\$	\$10,568.75
581	Robert A. Boit	5,630.13	220.08	. . . . .	125.00	5,725.21
583	Class of 1904	657.35	27.51	. . . . .	15.00	669.86
584	William Emerson	2,266.76	90.39	. . . . .	50.00	2,307.15
585	Roger Defriez Hunneman	1,047.89	39.30	. . . . .	90.00	997.19
587	James Means	3,337.45	129.69	. . . . .	.66	3,466.48
589	Arthur Rotch	7,642.84	298.68	. . . . .	200.00	7,741.52
591	Arthur Rotch, Special	11,835.34	463.74	. . . . .	. . . . .	12,299.08
592	Henry Webb Salisbury	1,120.50	43.23	. . . . .	4.92	1,158.81
593	Samuel W. Stratton	1,626.14	62.88	. . . . .	. . . . .	1,689.02
		<u>\$45,495.65</u>	<u>\$1,613.00</u>	. . . . .	<u>\$485.58</u>	<u>\$46,623.07</u>

† Exclusive of student notes receivable. (See Schedule A-3.)

SCHEDULE A-2 — (Continued)

No.	Funds, June 30, 1941	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1942	
FUNDS FOR RELIEF						
600	Louie G. Applebee	\$300.00	\$15.72	\$100.00	\$415.72	
601	Edward Austin	429,687.58	16,887.21	225.00	426,799.79	
603	Thomas Wendell Bailey . .	2,337.29	90.39	200.00	2,227.68	
604	Charles Tidd Baker	34,437.94	1,351.92	700.00	35,089.86	
606	Levi Boles	10,140.47	396.93	500.00	10,037.40	
608	Bursar's Fund	†22,154.88	864.60	2,365.59	24,320.07	
610	Mabel Blake Case	25,599.16	1,006.08	1,000.00	25,605.24	
612	Fred L. and Florence L. Coburn	5,206.95	204.36	200.00	5,211.31	
614	Coffin Memorial	41,931.00	2,320.25	123.98	42,075.23	
615	George R. Cooke	3,523.78	137.55	140.00	3,521.33	
616	Dean's Fund	†6,785.39	267.24	857.28	6,909.91	
618	Carl P. Dennett	†944.21	35.37	11.00	990.58	
620	Dormitory Fund	4,047.27	157.20	1,500.00	2,704.47	
621	Frances and William Emerson†	101,870.50	4,004.67	19.93	101,999.10	
623	Norman H. George	94,764.30	3,725.64	3,800.00	94,689.94	
624	Arthur B. Gilmore	196.50	10,000.00	200.00	9,996.50	
625	John A. Grimmons	†3,787.52	157.20	1,999.97	5,944.69	
626	James H. Haste	186,119.69	7,313.73	944.25	192,489.17	
627	David L. Jewell	26,945.39	1,061.10	1,000.00	27,006.49	
628	Llora Culver Krueger	3,942.59	153.27	4,095.86	27,006.49	
629	Edward F. and Mary R. Miller	393.00	10,000.00	10,393.00	10,393.00	
630	Charles A. Richards	31,864.92	1,253.67	1,400.00	31,718.59	
631	William B. Rogers	†43,476.62	1,709.55	496.53	43,882.70	
632	Anna Spooner	10,917.74	428.37	400.00	10,946.11	
633	Summer Surveying Camp	†1,908.59	74.67	261.01	2,174.27	
634	Teachers' Fund	107,525.23	4,224.75	1,775.00	109,974.98	
635	Technology Loan Fund . .	†724,605.18	21,218.28	175,001.74	788,105.77	
636	Alice Brown Tyler	1,766.52	70.74	33.92	1,803.34	
637	Thomas Upham	397,107.42	15,606.03	412,713.45	412,713.45	
638	Samson R. Urbino	1,029.05	39.30	50.00	1,018.35	
639	Jonathan Whitney	568,877.05	20,269.44	10,012.50	571,772.74	
640	Morrill Wyman	71,228.35	2,798.16	2,800.00	71,226.51	
		<u>\$2,964,832.58</u>	<u>\$108,432.89</u>	<u>\$211,474.53</u>	<u>\$206,879.85</u>	<u>\$3,077,860.15</u>
Totals	<u>\$35,981,544.04</u>	<u>\$327,775.77</u>	<u>\$2,294,143.70</u>	<u>\$1,337,159.25</u>	<u>\$37,266,304.26</u>	

RECAPITULATION OF FUNDS

	Funds June 30, 1941	Funds June 30, 1942
Restricted	\$26,387,568.88	\$26,840,322.29
Unrestricted	327,229.50	348,731.26
Special Deposit Funds	1,094,861.08	1,725,406.37
Salaries	168,332.18	168,332.18
Libraries, etc.	196,473.57	197,756.67
Departments	1,908,192.04	1,927,781.10
Research	1,279,006.35	1,289,267.84
Fellowships	217,890.15	211,111.00
Scholarships	1,391,662.06	1,433,112.33
Prizes	45,495.65	46,623.07
Relief	2,964,832.58	3,077,860.15
	<u>\$35,981,544.04</u>	<u>\$37,266,304.26</u>

† Exclusive of student notes receivable. (See Schedule A-3.)

SCHEDULE A-3
STUDENT NOTES RECEIVABLE

<i>Fund</i>	<i>Notes Receivable June 30, 1941</i>	<i>Loans Made 1941-42</i>	<i>Loans Repaid 1941-42</i>	<i>Notes Receivable June 30, 1942</i>	<i>Interest Received 1941-42</i>
Technology Loan Fund . . .	\$911,750.37	\$109,078.00	\$137,489.26	\$883,339.11	\$18,417.04
Bursar's Fund	6,228.91	1,065.00	2,255.21	5,038.70	111.38
Rogers Fund	3,252.02	.....	377.27	2,874.75	119.26
Dean's Fund	2,276.99	1,000.00	841.93	2,435.06	15.35
C. E. Summer Camp Fund	425.00	70.00	250.00	245.00	11.01
Grimmons Sch. Loan Fund	450.00	.....	200.00	250.00	87.59
Dennett Fund	665.00	.....	.....	665.00	11.00
G. H. May Sch. Fund	5,120.00	300.00	599.50	4,820.50	.....
Hygiene Special Fund	4,215.68	130.00	219.15	4,126.53	2.16
Class of 1896 Fund	1,500.00	.....	.....	1,500.00	.....
Emerson Fund	319.93	.....	19.93	300.00	.....
William P. Ryan Memorial Fund	330.69	.....	13.00	317.69	59.57
President's Fund	250.00	.....	.....	250.00	20.00
<i>Total</i>	<u>\$936,784.59</u>	<u>\$111,643.00</u>	<u>\$142,265.25</u>	<u>\$906,162.34</u>	<u>\$18,854.36</u>

(Schedule A)

SCHEDULE A-4
ACCOUNTS RECEIVABLE

Geological Society of America	\$1,500.00
Kellogg Foundation	2,500.00
Anaesthesia Committee (Hospital Research)	2,645.17
Sperry Gyroscope Co.	3,956.97
Rockefeller Foundation	2,575.00
National Defense Research Committee	1,378.95
Research Corporation	3,000.00
Wind Tunnel Accounts	4,814.03
United States Government:	
Tuition Contracts	\$32,776.63
Research Contracts	45,291.06
Army Rental	1,030.90
	<hr/>
79,098.59	
Division of Industrial Coöperation Contracts:	
Office of Scientific Research and Development	
Radiation Laboratory \$2,135,565.79	
All other contracts 98,061.16	
	<hr/>
2,233,626.95	
U. S. Army, Navy, and N. A. C. A. Contracts	62,780.69
Industrial Corporations	76,917.10
	<hr/>
2,373,324.74	
Miscellaneous Accounts	11,059.79
<i>Total</i> (Schedule A)	<u>\$2,485,853.24</u>

SCHEDULE A-5

ADVANCES AND INVENTORIES FOR 1942-1943

Advances

1942 Summer Session Salaries	\$2,902.00	
Carnegie Fund Pension	4,350.40	
Electrical Engineering, Special No. 1642	4,765.38	
Technology Press, Special No. 1494	2,555.65	
Departmental overdrafts:		
Metallurgy	\$293.92	
Modern Languages	81.10	
		375.02
Meteorology Department, Weather Bureau Special Engineering Science and Management War Training		166.16
On Building No. 22 Contract		130,596.44
		75,000.00
Research in Progress:		
Office of Scientific Research and Development		
Radiation Lab.	\$473,168.18	
All other contracts	112,667.15	
		\$585,835.33
United States Army and Navy and N. A. C. A.	155,619.61	
Industrial Corporations, etc.	54,603.83	
		796,058.77
Premiums Paid on Unexpired Insurance		6,496.02
1942-1943 Purchases and Expenses		31,584.46
<i>Total Advances</i>		\$1,054,850.30

Inventories

Supplies:		
Undergraduate Dormitories	\$2,498.12	
Graduate House	5,481.70	
Letter Shop	1,014.65	
Department of Buildings and Power	42,854.90	
Photographic	4,024.93	
Division of Laboratory and Office Supplies	35,690.29	
Civil Engineering Camp	82.42	
Walker Games, Candy and Cigars	470.52	
Lecture Notes	521.75	
Food and Utensils:		
Walker Dining Service	11,420.42	
Graduate House	13,479.46	
Postage Stamps		831.89
Fuel Oil		2,502.04
<i>Total Inventories</i>		120,873.09
<i>Total Advances and Inventories</i> , (Schedule A)		<u>\$1,175,723.39</u>

SCHEDULE A-6

STUDENTS' FEES IN ADVANCE, AND DEPOSITS RETURNABLE

1942 Summer Session:

Tuition Fees	\$194,507.42	
Students' Deposits	6,979.51	
Dormitory Rentals	25,105.25	
Graduate House Rentals	7,714.00	
Civil Engineering Camp	770.00	
		<u>\$235,076.18</u>
1941-42 Students' Deposits, Returnable		7,822.13
1942-43 Dormitory Rentals		272.50
1942-43 Tuition Fees		4,125.00
		<u>12,220.63</u>
<i>Total</i> (Schedule A)		<u><u>\$247,295.81</u></u>

SCHEDULE A-7
CURRENT FUNDS

<i>Name</i>	<i>Balance June 30, 1941</i>	<i>Receipts or Transfers</i>	<i>Expenditures or Transfers</i>	<i>Balance June 30, 1942</i>
Additional Group Insurance Fund	\$117.97	\$9,817.90	\$9,867.05	\$68.82
Aeronautical Engineering				
C.A.A. Pilot Training No. 3360.	549.10	.....	549.10	.....
C.A.A. Pilot Training No. 5599.	94.74	480.00	574.74	.....
C.A.A. Pilot Training No. 8547.	532.69	193.33	726.02	.....
C.A.A. Pilot Training No. 10427	182.72	1,625.91	1,808.63	.....
C.A.A. Pilot Training No. 10427A	.....	306.00	306.00	.....
C.A.A. Pilot Training No. 10738	127.60	2,880.45	3,008.05	.....
C.A.A. Pilot Training No. 12728	.....	693.40	693.40	.....
C.A.A. Pilot Training No. 13229	.....	554.00	554.00	.....
C.A.A. Pilot Training No. 14219	.....	1,276.60	1,276.60	.....
C.A.A. Pilot Training No. 15767	.....	68.00	68.00	.....
C.A.A. Pilot Training Program.	.....	3,114.97	1,210.41	1,904.56
Aerodynamic Research	271.04	.....	3.16	267.88
Equipment for Structural Lab.	.....	1,000.00	219.82	780.18
Spec. 500-762 Acct.	1,468.51	.....	.....	1,468.51
Summer Shop Course	81.43	.....	15.76	65.67
Wind Tunnel	31,991.13	99,422.73	77,151.16	54,262.70
Vib. Research, No. 1333	72.85	968.75	784.57	257.03
Alumni Fund — Expense	.....	3,088.03	3,088.03	.....
Alumni Fund — Salaries	.....	4,200.00	4,200.00	.....
Alumni Fund — Special Appro. No. 1560 Bulletin	1,890.57	.....	1,045.00	845.57
Army Barracks	.....	4,944.55	4,944.55	.....
Architecture:				
Traveling Fellowship	2,500.00	.....	525.00	1,975.00
Bemis Foundation Research	.....	666.76	666.76	.....
Bemis Foundation Res. Salaries	.....	9,400.00	9,400.00	.....
Bemis Foundation Res. No. 1637.	500.00	.....	500.00	.....
Bemis Real Estate Reserve	.....	3,544.43	.....	3,544.43
Biology — Food Research				
Boston Health Services	116.43	1,669.39	776.07	1,009.75
Diversey Corp. Fellowship	.....	1,282.50	858.45	424.05
Health Education	.....	2,000.00	.....	2,000.00
Noonan Research	8.93	1.22	10.15	.....
Dow Fellowship	.....	500.00	500.00	.....
Electron Microscope	2,404.39	.....	2,106.83	297.56
Equipment Engineering Special	.....	18,795.06	18,795.06	.....
Hood Fund	.....	1,750.00	1,560.03	189.97
Johnson Research Fund	1,364.56	.....	1,364.56	.....
Lederle Laboratories Research	.....	2,750.00	1,601.91	1,148.09
Lipton Fund	.....	2,787.16	2,110.17	676.99
	.....	1,125.00	621.71	503.29

SCHEDULE A-7 — (Continued)

Name	Balance June 30, 1941	Receipts or Transfers	Expenditures or Transfers	Balance June 30, 1942
Biology (Continued)				
Mass. University Ext. Special	\$	\$151.10	\$1.59	\$149.51
Williams-Waterman Biochem. Fellowship	107.18	3,936.96	3,302.54	741.60
Hood Scholarship Fund . . . . .	. . . . .	1,200.00	800.00	400.00
Rockefeller Nutrition Research Kroger Grocery and Baking Co. Fellowship	17.32	1,407.29	1,157.49	267.12
Biological Shop . . . . .	. . . . .	2,000.00	1,395.19	604.81
Lever Bros. Fellowship	299.07	1,164.69	591.35	573.34
Rockefeller Fd.—Biological Eng.	21,760.23	2,250.00	2,129.87	419.20
Rockefeller Nutrition Biochem.	3,718.63	21,206.92	39,198.33	3,768.82
Kellogg Fund . . . . .	. . . . .	8,500.00	11,791.77	1,520.40
Barlett Arkel Fund	3,845.24	8,500.00	8,064.03	435.97
Spec. No. 1648 Biol. Eng. Shop	2,608.77	5,590.00	5,046.18	4,389.06
Blue Cross Hospitalization . . . . .	. . . . .	. . . . .	91.58	2,517.19
Boat House Equipment	158.00	11,719.75	11,719.75	. . . . .
Building 20 Demolition . . . . .	. . . . .	500.00	422.06	235.94
Bryant (Dixie Lee), Sch. 1940-41	550.00	5,162.74	5,162.74	. . . . .
Building Key Account	2,820.77	50.00	600.00	. . . . .
Building Eng. and Const. — National Lime Association	593.79	1,574.00	1,258.28	3,136.49
Timber Engineering Co., Inc. . . . .	. . . . .	5,710.00	5,596.36	707.43
Bus. and Eng. Administration		6,880.85	2,306.24	4,574.61
Sloan Book Account	267.40	93.80	223.50	137.70
Case Research Account	190.70	18.16	143.35	65.51
Graduate Fellowship Fund	180.22	. . . . .	180.22	. . . . .
Graduate Fellowship Fund, 1942 . . . . .	. . . . .	4,724.94	. . . . .	4,724.94
Human Relationships Acct.	126.70	91.65	149.32	69.03
Office of Emergency Man. A-35 . . . . .	. . . . .	1,800.00	1,468.55	331.45
Sloan Fellowship Fund 1939	2,581.93	. . . . .	2,581.93	. . . . .
Sloan Fellowship Fund 1940	1,966.75	. . . . .	1,966.75	. . . . .
Sloan Fellowship Fund 1941 . . . . .	. . . . .	28,336.56	28,080.72	255.84
Sloan Fellowships Special	1,000.00	10.00	476.10	533.90
J. R. Macomber Fund	5.84	100.00	63.68	42.16
War Production Research Special No. 1850 . . . . .	. . . . .	515.59	488.62	26.97
Carnegie Foundation Pensions . . . . .	. . . . .	59,452.64	59,452.64	. . . . .
Chemical Warfare Ser. Dev. Lab. . . . .	. . . . .	106,874.73	106,819.38	55.35
Chemical Warfare Ser. Dev. Lab. Institute No. 2 . . . . .	. . . . .	955.00	955.00	. . . . .
Chemical Warfare Ser. Dev. Lab. Institute No. 3 . . . . .	. . . . .	1,233.60	1,233.60	. . . . .
Chemistry:				
Polymerization Research	1,960.08	. . . . .	44.83	1,915.25
Inorganic Equipment	909.02	. . . . .	112.21	796.81
Special No. 1324, Alterations	50.73	. . . . .	50.73	. . . . .

SCHEDULE A-7 — (Continued)

Name	Balance June 30, 1941	Receipts or Transfers	Expenditures or Transfers	Balance June 30, 1942
Chemistry (Continued)				
Special No. 1617 Compressor ..	\$569.61	\$.....	\$.....	\$569.61
Warren Fund — Schumb.	74.14	.....	19.95	54.19
Mass. University Ext. Special ..	.....	129.38	.....	129.38
Research Corp.				
Vitamin "C" Research.	16.55	.....	16.55	.....
Phys. Chem. Royalties	472.33	977.30	.....	1,449.63
Research Corp. Synthesis of				
Vitamins A and D.	80.98	10,030.00	9,988.88	122.10
Oxycellulose Research.	2,550.00	650.00	2,454.83	745.17
Chemical Engineering:				
Allied Chemical and Dye Corp.				
Fellowship.	1,500.00	.....	1,125.00	375.00
Alsifilm Research.	201.86	.....	2.00	199.86
Ethyl Gasoline Corp. Fellowship	.....	750.00	750.00	.....
Fuels Research.	2,429.26	.....	75.00	2,354.26
Special No. 1635, Colloid Res. .	544.93	1,050.00	989.68	605.25
Paint and Varnish Res. Fell. ....	.....	750.00	750.00	.....
Research on Streaming Double				
Refraction. ....	.....	350.00	279.14	70.86
Special No. 1207, Colloid Chem.	281.28	.....	.....	281.28
Special No. 1421, Research	250.00	.....	.....	250.00
Civil Engineering:				
Freeman Hydraulic Fund.	800.00	.....	.....	800.00
Special No. 1364, Research.	2,577.09	300.00	246.42	2,630.67
Soil Mechanics.	1,742.00	2,188.38	3,930.38	.....
Reserve for 1941-42.	2,702.30	.....	2,702.30	.....
Special No. 1056, Cement Res. .	475.06	600.00	324.60	750.46
Special No. 1326, Equipment. .	512.85	.....	174.03	338.82
River Hydraulic Laboratory ...	5.09	500.00	7.96	497.13
Structural Laboratory.	404.68	1,289.91	1,182.87	511.72
U. S. Cape Cod Canal Res.	93.35	.....	93.35	.....
Class of 1892 Fund. ....	.....	1,857.00	.....	1,857.00
Compton, Karl T., Special .....	.....	1,000.00	632.31	367.69
Corn Industries Res. Foundation. .	.....	1,500.00	887.84	612.16
Cosmic Terrestrial Research.	1,167.99	9,016.79	9,434.77	750.01
Crafts Library Fund.	479.53	.....	.....	479.53
Dining Service Reserve.	3,128.39	3,245.08	4,062.99	2,310.48
¹ Div. of Indus. Coöperation.	27,773.20	560,796.70	552,383.26	36,186.64
Delta Tau Delta Income. ....	.....	75.00	.....	75.00
Electrical Engineering:				
Balsbaugh Research.	1,249.45	19,235.64	20,128.66	356.43
VIA Fund — Travel, etc.	173.28	900.00	720.34	352.94
Fog Research — Navy.	105.55	.....	105.55	.....
Network Analyzer.	6,739.79	7,363.23	5,129.82	8,973.20
Edgerton Film Fund.	256.76	19.50	70.50	205.76
Round Hill Research.	11.58	105.55	.....	117.13
Navy Fire Control Research. .	51.30	1,750.00	1,447.71	353.59

¹Excluding receipts and expenditures on account of all Army, Navy and O.S.R.D. contracts.

SCHEDULE A-7 — (Continued)

Name	Balance June 30, 1941	Receipts or Transfers	Expenditures or Transfers	Balance June 30, 1942
Electrical Engineering (Continued)				
Differential Analyzer	\$582.57	\$30,837.89	\$24,716.69	\$6,703.77
Spec. No. 1588, Fire Cont. Lab.	67.10	2.64	69.74	.....
Spec. No. 1781, Differential Analysis Program	10,000.00	.....	10,000.00	.....
Nat. Res. Council, Micro. Film	737.18	.....	737.18	.....
Oncologic Fund . . . . .	.....	8,623.31	8,623.31	.....
Rapid Selection Research	6,986.73	68.54	64.75	6,990.52
Rapid Selec. Research Special	68.54	.....	68.54	.....
C.A.A. Instrument Lan. Res. . . . .	.....	13,964.70	13,964.70	.....
Center of Analysis	5,667.73	252.07	5,919.80	.....
Comm. Laboratory U. H. F. . . . .	.....	5,000.00	.....	5,000.00
Research Corp. Arith. Mach.	2,347.31	5,101.96	6,704.28	744.99
Int. Tel. and Tel. Research	4,149.38	.....	3,163.70	985.68
Int. Tel. and Tel. Res. 1940-41 . . . . .	.....	399.38	.....	399.38
Microwave Research	4,000.84	12,652.57	10,295.77	6,357.64
Moon Spectro-Radiometer	570.23	30.91	601.14	.....
Network Analyzer Special	597.87	1,418.09	714.03	1,301.93
Notes — Special No. 1642 . . . . .	.....	6,993.97	6,993.97	.....
Oscillograph No. 1864 . . . . .	.....	3,000.00	263.36	2,736.64
Servos-Brown . . . . .	.....	6,746.50	2,462.39	4,284.11
Special Appr. No. 1872, Dwight	.....	300.00	127.11	172.89
Hyams Radiation Project . . . . .	.....	15,149.31	15,149.31	.....
Radio Research, No. 1541	829.62	.....	829.62	.....
Radio Research, No. 1550	1,609.18	114.97	.....	1,724.15
Research Corp., High Volt	505.75	.....	22.59	483.16
Rock. Diff. Anal., No. 4	1,976.93	529.69	2,506.62	.....
von Hippel Res. 1219, 1275	218.11	2,338.93	2,557.04	.....
Course Revision No. 1250	2,721.29	5,576.00	4,272.57	4,024.72
Loomis Fund Research	115.48	.....	115.48	.....
Reserve for 1941-42	7,550.60	.....	7,550.60	.....
Research on Photoelectric Cells No. 1874A . . . . .	.....	5,000.00	.....	5,000.00
U. H. F. Dielectrics No. 1874B	.....	6,000.00	.....	6,000.00
Reserve for 1942-43, E. E. Shop	.....	800.00	.....	800.00
Eng. and History, Spec. No. 1536.	354.01	.....	334.34	19.67
International Relations Library	97.63	.....	2.74	94.89
Employees Special Allowance . . . . .	.....	22,785.00	22,785.00	.....
Eng. War Training Program				
1940-41,	76.45	129,122.94	129,199.39	.....
Eng. War Training Program				
1941-42, . . . . .	.....	154,804.66	154,804.66	.....
Eng. War Training Program				
1940-41, Regional Expense . . . . .	.....	2,000.00	2,000.00	.....
Eng. War Training Program				
1941-42, Regional Expense . . . . .	.....	1,526.34	1,526.34	.....
Fire Protection Engin. Conf. . . . .	.....	1,010.00	374.03	635.97

SCHEDULE A-7 — (Continued)

Name	Balance June 30, 1941	Receipts or Transfers	Expenditures or Transfers	Balance June 30, 1942
Geology:				
Carnegie Institution of Washington, Research.....	\$2,312.78	\$2,500.00	\$1,906.37	\$2,906.41
N. R. C. Research.....	1,532.00	.....	985.61	546.39
Special No. 242-38.....	568.27	.....	568.27	.....
U. S. Smelting, Ref. and Min. Co. Special Research Fellow.	1,800.00	.....	1,800.00	.....
General Radio Fund.....	.....	5,000.00	3,000.00	2,000.00
Graduate House Dining Service Reserve.....	2,169.45	473.31	1,161.15	1,481.61
Graphics—Nat.Res.Council Grant	528.73	.....	344.52	184.21
Greater Boston United War Fund	.....	4,174.60	4,174.60	.....
Guard Service.....	.....	30,000.00	6,620.11	23,379.89
Guide Service, 1558.....	484.86	.....	148.90	335.96
Gymnasium Special.....	1,000.00	.....	84.47	915.53
Harbor Building Spec.....	.....	68,544.14	68,544.14	.....
Haskins Fellowship Fund.....	.....	2,500.00	2,500.00	.....
Historic Memorials.....	265.42	.....	105.02	160.40
Kasch Fellowships.....	.....	330.00	.....	330.00
Reserve, Real Est. Taxes.....	.....	3,985.32	.....	3,985.32
Library:				
Special No. 1.....	497.92	57.50	149.47	405.95
Lindgren Library, No. 1508 ...	47.47	.....	47.47	.....
Library Growth Account.....	7,058.36	6,087.03	1,169.01	11,976.38
Dewey Library.....	95.18	.....	60.35	34.83
Lecture Fund.....	.....	1,000.00	140.00	860.00
A. D. Little Mem. Income Acct. .	28,072.22	30,511.00	36,500.00	22,083.22
Lowell Institute.....	.....	5,030.00	5,030.00	.....
Mathematics:				
Applied Mathematics Program. ....	.....	10,000.00	.....	10,000.00
Journal of Math. and Physics..	848.27	2,713.49	1,331.33	2,230.43
Putnam Fund.....	212.29	200.00	49.39	362.90
Mass. Gen'l Hospital X-Ray ....	.....	285.89	285.89	.....
Mechanical Engineering:				
Disc Research.....	.....	1,787.00	155.53	1,631.47
Keenan Special Research.....	.....	400.00	370.00	30.00
Shop Account.....	.....	6,185.51	3,324.12	2,861.39
Slater Fund.....	.....	4,527.90	3,278.11	1,249.79
Textile Fund Grant.....	3,231.73	3,750.00	4,648.77	2,332.96
Special Research.....	312.69	500.00	287.73	524.96
Research No. 1254.....	1,236.66	200.00	790.95	645.71
A. S. M. E. Gear Research....	37.71	.....	37.71	.....
A. S. M. E. Special Research ..	7.01	250.00	54.72	202.29
Special 1774.....	1,200.00	.....	1,200.00	.....

SCHEDULE A-7 — (Continued)

Name	Balance June 30, 1941	Receipts or Transfers	Expenditures or Transfers	Balance June 30, 1942
Mechanical Engineering (Continued)				
Spec. No. 1523 T. M. Lab.....	\$580.00	\$.....	\$79.28	\$500.72
Testing Machine, No. 1624.....	875.65	.....	436.69	438.96
Cavitation Research.....	1,017.48	.....	131.01	886.47
Mechanical Eng. 1941-42.....	196.79	.....	196.79	.....
Medical Dept. Special.....	†1,026.91	221.31	130.00	†1,118.22
Melvin Trust Scholarships.....	.....	6,900.00	6,900.00	.....
Metallurgy:				
Magnetic Laboratory, No. 1222	549.57	1,501.55	1,939.55	111.57
Mineral Dressing Research.....	.....	2,907.32	2,907.32	.....
Revere Copper and Brass Res..	82.22	1,600.00	1,464.04	218.18
Engineering Foundation for				
Welding Research.....	988.63	1,953.53	2,210.86	731.30
Vanadium Corporation Fell. . .	.....	1,925.00	1,750.00	175.00
Clay Research.....	2,561.31	334.00	2,150.20	745.11
Chilled Iron Research.....	60.82	.....	60.82	.....
Chipman Research, No. 1337..	246.06	2,498.25	2,150.40	593.91
Special No. 1354, Research....	623.05	176.07	281.29	517.83
Am. Inst. Min. and Met. Eng., O. H. Fellowship.....	.....	1,340.00	1,340.00	.....
Special No. 1259, Equipment..	180.87	548.01	292.12	436.76
Special No. 1818, Research....	.....	10,301.48	3,516.65	6,784.83
American Welding Society Acct.	63.53	.....	63.53	.....
Special No. 1234, Equipment..	516.81	471.50	545.45	442.86
Special Equipment, Hayward..	.....	380.00	.....	380.00
Meteorology:				
Forest Fire Service.....	993.52	60.00	.....	1,053.52
Weather Bureau Research.....	1,854.37	2,083.32	3,863.19	74.50
Weather Bureau Special Meteor. Course.....	51.46	19,650.00	19,701.46	.....
Weather Bureau Special Meteor. Course 1942-43.....	.....	3,015.94	3,015.94	.....
Age of the Earth Research....	.....	6,427.60	6,427.60	.....
Mortgage Interest Account —				
Gloversville.....	880.47	.....	880.47	.....
Morss, Everett — Portrait Fund.	240.00	.....	240.00	.....
Museum Committee.....	542.79	4,150.00	4,530.34	162.45
National Defense Program.....	28,282.91	130,277.28	158,560.19	.....
National Defense — Safety Comm.	175.64	35,056.40	13,463.84	21,768.20
National Defense — C. A. R. 59 .	.....	2,584.40	2,584.40	.....
National Research Council, Draper	.....	2,007.78	1,301.42	706.36
Naval Architecture:				
Propeller Tunnel, No. 1548A ..	438.47	1,160.00	251.30	1,347.17
Special.....	.....	720.00	185.08	534.92
Patent Committee.....	77.51	.....	.....	77.51
Photographic Service.....	2,808.00	63,921.24	64,499.21	2,230.03
Power Plant — Substation and Dist. System.....	.....	2,535.51	2,535.51	.....

† Exclusive of Student Notes Receivable.

SCHEDULE A-7 — (Continued)

Name	Balance June 30, 1941	Receipts or Transfers	Expenditures or Transfers	Balance June 30, 1942
	\$			\$
Power Plant — Survey		\$4,942.39	\$4,942.39	
Physics Department:				
Nuclear Research	13,676.53	2,996.21	6,833.18	9,839.56
Bausch & Lomb Optical Co.	1,323.26	1,650.00	2,973.26	
Rumford, Harrison No. 5	33.34		18.08	15.26
Rumford, Stockbarger	371.19		371.19	
Roentgen Ray	232.26			232.26
Crystal Research	600.63	371.19	513.59	458.23
Microscope, No. 1650	393.31		393.31	
Carnegie Institution of Washington, Vallarta	860.00			860.00
Markle Cyclotron Research		38,784.34	38,784.34	
Glass Industry Fellowship	250.00			250.00
Radioactivity Research	2,301.06	111.86	791.47	1,621.45
Carnegie Institution of Washington, Boyce	3,054.24	2.16	1,289.17	1,767.23
Special, No. 1717, Morse & Stratton	476.66	89.74	566.40	
Special, No. 1769, Electron Microscope		3,033.93	3,033.93	
Special, No. 1755, Zeeman Effect Program	660.25			660.25
Spectroscopy, Special	2,227.91	1,733.76	312.57	3,649.10
Staff Scholarships 1941-42	400.00		400.00	
Public Health:				
W. K. Kellogg Found. Scholarship Fund		7,200.00		7,200.00
President's Fund	146.10	1,255.00	228.05	1,173.05
President's Portrait Fund	1,656.50		838.15	818.35
Research Associates M.I.T. 1942		19,700.00	19,700.00	
Research Associates M.I.T. 1943		1,000.00		1,000.00
Rockefeller Foundation R.F. 41042		10,000.00	4,717.67	5,282.33
R. O. T. C. Uniforms	432.75	9,545.35	9,227.06	751.04
Royalty Receipts, Patent 665135	3,152.73	3,370.96	2,000.51	4,523.18
Sailing Trophy Fund	3.52			3.52
Salaries Payable		74,732.63	74,732.63	
Standard Oil Co. of California		300.00	300.00	
Society of Arts		1,953.17	1,953.17	
Solar Energy No. 1476	128.18		128.18	
Solar Energy — C	597.14	1,700.00	1,532.11	765.03
Solar Energy — E	400.18	868.30	1,268.48	
Solar Energy — G	748.24		247.02	501.22
Solar Energy — H	93.24	1,450.00	644.34	898.90
Solar Energy — M	566.95	300.00	676.02	190.93
Traffic Signals Special, No. 1747	1,785.06		1,785.06	
Ultra Short Wave Radio Prog. Special No. 1758		7,500.00	7,500.00	
Special, No. 1759 Center of Analysis		11,000.00	11,000.00	
Summer Alter., Special, No. 1779	21,877.63		16,433.55	5,444.08

SCHEDULE A-7 — (Continued)

Name	Balance June 30, 1941	Receipts or Transfers	Expenditures or Transfers	Balance June 30, 1942
Visiting Committees, Reports,				
Special, No. 1682.	\$184.18	\$500.00	\$242.67	\$441.51
Special, No. 1817, Meteorolog. Proj.		2,000.00	750.00	1,250.00
Special, No. 1772, Bldg. 33-410		630.13	630.13	
Special, Departmental 1940-41				
Unexpended Balances	12,554.49		12,554.49	
Special, No. 1807, Humanities Lib.		1,000.00	815.31	184.69
Special, No. 1649. . . . .		.28	.28	
Special, No. 1677, Sloan Lab. Eq.	54.69		54.69	
Special, No. 1793, Radiosonde Rec.				
Equipment		1,200.00	1,200.00	
Special, No. 1796, Entertainment.		2,000.75	1,062.65	938.10
Special, No. 1820, Ins. Coverage		1,430.00	1,430.00	
Special, No. 1715, Swimming Pool		4.09	4.09	
Special, No. 1823, Storage.		1,500.00	1,128.00	372.00
Special, No. 1735, Metallurgy Dept.		410.88	410.88	
Special, No. 1834, Salaries of Substi.		372.98	372.98	
Special, No. 1845, Briggs Field				
Parking.		6,154.80	6,154.80	
Special, No. 1846, New Dormitory				
Roadway		2,759.11	2,759.11	
Special, No. 1852, Drama Shop		853.17	853.17	
Special, No. 1853, Pur. of Books,				
Titles.		800.00	57.57	742.43
Special, No. 1855, Geological Res.		2,500.00	2,500.00	
Special, No. 1863, Geological Res.		5,000.00	4.67	4,995.33
Special, No. 1879, Institute Steam				
and Elec. System.		110,000.00	8,537.23	101,462.77
Special, No. 1887, Patent Applica.		500.00		500.00
Special, No. 1890		1,400.00	1,110.00	290.00
Special, No. 1903, Insurance Cover.		2,150.00		2,150.00
Summer School 1941 —				
Graduate Scholarships	1,500.00		1,500.00	
Suspense Account		90,467.95	90,467.95	
Swimming Pool Equipment	80.90			80.90
Special, No. 1828, Lab. Facilities.		475.38	475.38	
Technique		1,198.00	1,198.00	
Technology Christian Assn.		1,427.00	1,427.00	
Technology Club of Philadelphia.	100.00	50.00	50.00	100.00
Tech Press, No. 1494		3,354.16	3,354.16	
Tech Press, No. 1468	3,965.43		.45	3,964.98
Tech Press, No. 1468A	608.32	310.92		919.24
Tucker (Ross Francis), Mem. Fd.	223.12		28.15	194.97
Undergraduate Dues		20,443.50	20,443.50	
U. S. Defense Savings Bonds		35,678.70	29,829.25	5,849.45
U. S. Gov't Navy Torpedo Res.		3,500.00	3,468.34	31.66
Walker Memorial Library	379.20	3,044.98	2,865.70	558.48
Totals	<u>\$378,776.79</u>	<u>\$2,548,698.43</u>	<u>\$2,393,569.85</u>	<u>\$533,905.37</u>

(Schedule A)

SCHEDULE A-8
EDUCATIONAL PLANT ASSETS

Land in Cambridge:		
Campus — east of Massachusetts Avenue ..	\$1,125,766.67	
Campus — west of Massachusetts Avenue..	850,014.82	
		\$1,975,781.49
Educational Buildings, Cambridge:		
Main Group	\$5,633,419.62	
George Eastman Research Laboratories	1,225,098.58	
Pratt School of Naval Architecture	674,971.70	
Chemical Engineering Laboratories	535,683.99	
Guggenheim Aeronautical Laboratory	293,637.46	
Wright Brothers Memorial Wind Tunnel ...	217,506.25	
Magnetic Substation	76,272.73	
Sloan Automotive Laboratories	209,847.27	
Mechanic Arts Building	83,658.89	
Nuclear Research Laboratory	34,891.27	
Cyclotron Laboratory	20,247.92	
Solar Energy Laboratory	10,500.00	
Hyams Radiation Laboratory	13,500.00	
Research Building (new)	76,835.88	
Hydraulic and Compression Laboratories ..	68,301.88	
		9,174,373.44
Educational Equipment		2,039,953.60
Undergraduate Dormitories		1,308,923.79
Infirmary, Recreational and Athletic Buildings:		
Homborg Memorial Infirmary	\$188,441.60	
Walker Memorial	714,587.02	
Alumni Swimming Pool	364,477.21	
Boat House	54,244.13	
Barbour Field House	84,042.54	
Sailing Pavilion	28,849.09	
Briggs Field House and Track	114,440.13	
		1,549,081.72
Summer Camp:		
East Machias, Maine	\$120,558.00	
		120,558.00
Miscellaneous:		
Power Plant	\$389,064.17	
Steam and Electrical Distribution System ..	154,055.24	
Service Building and Garages	55,369.74	
Other Plant Assets	286,999.85	
		885,489.00
Total, June 30, 1942 (Schedule A)		\$17,054,161.04

¹Not including Graduate House (see investments, page 143), nor Buildings 22 and 24, built for and used by U. S. Government Research.

SCHEDULE A-9

PRINCIPAL GIFTS AND APPROPRIATIONS
FOR EDUCATIONAL PLANT

For Land:

T. C. duPont	\$625,000.00	
A. F. and Ida F. Estabrook Funds	105,000.00	
Maria A. Evans	169,080.60	
Edmund D. Barbour Fund	234,634.18	
From Miscellaneous Contributors	277,222.89	
Appropriations from Funds —		
Blake, \$5,000; Lyman, \$5,000; Kimball, \$10,000; McGregor, \$2,500; Philbrick, \$2,000; Richards, \$1,000; Perkins, \$3,252.32;		
Current Income, \$6,500	35,252.32	
	<hr/>	\$1,446,189.99

For Educational Buildings (including Homberg Infirmary,
President's House, Power Plant and buildings other than
Dormitories and those used for Student Recreational and
Athletic Purposes):

*George Eastman	\$5,509,453.87	
T. C. and P. S. duPont, Charles Hayden, Arthur Winslow for Mining Engineering Building	225,000.00	
Maria A. Evans Fund	100,000.00	
C. A. Stone and E. S. Webster	187,500.00	
Sale of Land and Building in Boston (1938) . .	972,283.33	
Pratt Fund, for School of Naval Architecture	675,150.00	
Guggenheim Fund, for Aeronautical Labora- tory	230,000.00	
Appropriations for Aeronautical Laboratory— From Funds: Perkins, \$12,508.02; Hayden, \$42,700.76; Frisbie, \$7,614.98	62,823.76	
Alfred P. Sloan, Jr., for Automotive Labora- tory	165,000.00	
Appropriation for Automotive Laboratory— From Current Income	60,000.00	
Edmund D. Barbour Fund for:		
Nuclear Laboratory	32,341.27	
Magnetic Laboratory	40,772.73	
Power Plant	90,006.59	
Miscellaneous Contributions and Appropri- ations from Funds for: Magnetic Lab., \$5,500; Nuclear Research Lab., \$2,500; Cyclotron, \$20,247.92; Hyams Radiation Lab., \$13,500; and Solar Energy Lab., \$9,000; Anonymous, \$1,000, Bldg. 6	51,747.92	
†Subscriptions to Wright Brothers Memorial Wind Tunnel	95,795.00	
Appropriation for Wind Tunnel — Current Income	9,000.00	

* Includes Mr. Eastman's original gift of \$3,500,000 together with appropriations from the Building Fund of \$2,500,000 which he established.

† Otherwise paid for from Eastman Building Fund.

SCHEDULE A-9—(Continued)

For Educational Buildings (Continued):		
Miscellaneous Appropriations from Current Income for: Compression Lab., \$31,000; Tractor Garage, \$6,400; Building 20, \$15,000; Hangar-Building 12, \$20,000....	\$72,400.00	
Julius Rosenwald and family—Homberg Infirmary.....	110,225.00	
Appropriations from Funds—Homberg Infirmary.....	67,163.47	
Chase, \$4,090.09; A. H. Munsell, \$7,908.28; M. A. Munsell, \$1,105.32; Industrial, \$41,137.61; A. F. Estabrook, \$10,000; I. F. Estabrook, \$2,157.51; Perkins, \$764.66		
Appropriation for Homberg Infirmary from Current Funds.....	11,500.00	
	<hr/>	\$8,768,162.94
For Educational Equipment:		
Emma Rogers Fund.....	\$528,077.06	
F. W. Emery Fund.....	126,423.80	
C. L. W. French Fund.....	100,843.34	
Equipment moved from Boston (1916) Est.	500,000.00	
Alumni Fund.....	82,119.38	
Appropriations from Funds—		
Drew, \$305,171.52; Peabody, \$52,238.89; duPont, \$12,500; Tuttle, \$50,000; Thayer, \$25,000; Dorr, \$49,573.47.....	494,483.88	
Appropriations from Current Income—		
\$205,000; \$42,945.10; \$28,539.31.....	276,484.41	
Miscellaneous Contributions.....	14,429.80	
	<hr/>	2,122,861.67
For Summer Camps:		
Appropriations from Current Income—		
For Civil Engineering Camp, Maine.....	\$73,807.19	
	<hr/>	73,807.19
For Dormitories:		
Maria A. Evans Fund.....	\$261,192.55	
T. C. duPont.....	100,000.00	
Alumni Dormitory Fund.....	566,945.66	
Edmund D. Barbour Fund.....	258,599.40	
Appropriations from Funds—		
Robb, \$28,750; Thorndike, \$15,000; Hodges, \$57,316.26; Wood, \$28,750.....	129,816.26	
Appropriated, Current Income.....	17,367.82	
	<hr/>	1,333,921.69
For Recreational and Athletic Buildings:		
Walker Memorial Fund.....	\$167,303.96	
Improvement Fund, for Walker Memorial..	24,491.34	
Alumni Fund, for Walker Memorial.....	490,000.00	

SCHEDULE A-9—(Continued)

For Recreational and Athletic Buildings (*Continued*):

Edmund D. Barbour Fund, for Field House	\$55,000.00	
Alumni Fund, for Swimming Pool	228,479.15	
Stephen Bartlett Fund, for Swimming Pool	117,071.64	
Class of 1923, Sun Garden	10,000.00	
Alumni Fund, for Briggs Field House and Track	156,169.13	
Edmund D. Barbour Fund, Sailing Pavilion	13,363.89	
Anonymous for Boat House	30,000.00	
Appropriations from Current Income for:		
Boat House	6,500.00	
Sailing Pavilion	15,485.20	
Squash Courts	29,042.54	
Rifle Range	1,500.00	
		<u>\$1,344,406.85</u>
Miscellaneous:		
From Sale of Land and Buildings in Boston 1916	\$656,919.45	
Other Contributions, Appropriations, etc.	881,961.92	
		<u>1,538,881.37</u>
<i>Total June 30, 1942 (Schedule A)</i>		<u><u>\$16,628,231.70</u></u>

SCHEDULE B-1

APPROPRIATIONS FROM FUNDS FOR TEACHING
RESEARCH AND ADMINISTRATION

Administration				\$4,333.65
E. S. M. D. T.	\$4,333.65			
Aeronautical Engineering				17,045.00
Wind Tunnel	14,795.00	Nat. Acad. of		
C. A. A. Pilot		Science	\$850.00	
Training Program	1,400.00			
Bemis Research				4,115.37
A. F. Bemis Fund	4,115.37			
Biology				31,138.88
Rockefeller Nutri.	2,066.68	Lever Bros. Fell.	150.00	
Electron Microscope	4,200.00	Rockefeller Res.	23,700.00	
Williams-Waterman		Johnson Res.	222.20	
Res.	800.00			
Building Construction				4,600.00
National Lime Asso.	4,600.00			
Chemistry				35,719.96
Richards Fund	500.00	D. I. C.	3,999.96	
Oxy Cellulose		A. D. Little Fund	22,000.00	
Fund	2,500.00	Res. Corp. Vit. Res.	6,720.00	
Chemical Engineering				11,519.12
Anonymous	500.00	A. D. Little Fund	10,000.00	
Dept. Adjustment	299.12	Eastman Kodak Co.	720.00	
Civil Engineering				813.33
U. S. Engineers Cont.	813.33			
Division Industrial Cooperation				25,014.93
Industrial Fund	25,014.93			
Economics				3,800.00
Rockefeller Grant	2,000.00	D. I. C.	1,800.00	
Electrical Engineering				45,011.73
Assoc. Edis. Co. Acct.	5,792.50	Diff. Anal.	8,813.00	
Microwave Research	3,800.00	Hyams Research	2,520.00	
Arith. Mach. Res.	3,150.00	E. S. M. W. T.	13,725.33	
Network Anal.	1,480.00	D. I. C.	1,037.50	
Solar Energy	1,000.00	I. T. and T. Res.	1,413.40	
Oncologic Fund	2,280.00			

SCHEDULE B-1 — (Continued)

Geology.....				\$3,591.67
Carnegie Institution of		Age of Earth Res.	\$2,266.67	
Washington	\$1,325.00			
Industrial Relations Section.....				15,449.27
Industrial Rela. Fd.	15,449.27			
Library.....				2,667.00
Vail Fund	2,000.00	Cilley Fund	667.00	
Mathematics.....				10,060.00
E. S. M. W. T.	2,700.00	D. I. C.	7,360.00	
Mechanical Engineering.....				11,625.19
Insurance Adjustment	36.00	Textile Research	4,270.00	
Special No. 1774	1,200.00	E. S. M. W. T.	1,600.00	
Slater Fund	1,925.00	D. I. C.	2,594.19	
Medical.....				3,648.00
Hayden Fund	3,648.00			
Metallurgy.....				6,945.00
Revere Brass and		Clay Research	1,365.00	
Copper Fellowship	600.00	A.I.M. and M.O.H.		
Engineering Foundation		Fellowship	140.00	
Welding Research	1,770.00	Special 1818	120.00	
Vanadium Alloys Co.		D. I. C.	1,200.00	
Fund	1,750.00			
Meteorology.....				2,050.00
Weather Bureau Res.	2,050.00			
Nautical Museum.....				1,646.00
Pratt Fund	1,646.00			
Naval Architecture.....				173.00
E. S. M. W. T.	48.00	Accounts Rec.	125.00	
Physics.....				22,696.08
Age of Earth Research	4,074.15	D. I. C.	2,495.83	
Bausch & Lomb Co.		Carnegie Institution		
Fellowships	837.50	of Washington	562.50	
Markle Cyclotron	9,214.77	Nuclear Research	3,511.33	
		Electron Microscope		
		Res.	2,000.00	
Solar Energy Research.....				16,633.36
Solar Energy Fund	16,633.36			
1940-41 Department Appropriations, Reserves.....				15,256.79
Total (Schedule B).....				<u><u>\$295,553.38</u></u>

SCHEDULE B-2

CONTRIBUTIONS AND OTHER INCOME

L. J. and M. E. Horowitz Foundation for Building Engineering and Construction Course	\$3,000.00
General Electric Company for Course VI-A	7,000.00
Boston Edison Company for Course VI-A	1,200.00
Sperry Gyroscope Co. for Electrical Engineering	1,250.00
General Radio Co. for Electrical Engineering	1,200.00
Trustees of Henry Estate	6,400.00
Trustees of H. C. Frick Estate	1,956.23
United States Navy Fire Control Research	750.00
United States Government Chemical Warfare Service	34,000.00
United States Navy Torpedo Research	1,500.00
Photographic Service, Rental	3,000.00
Land Rentals	7,879.08
Contributions, M. I. T. Research Associates	19,700.00
<i>Total</i> (Schedule B)	<u>\$88,835.31</u>

SCHEDULE B-3
SALARIES OF TEACHERS, ACCESSORY TO TEACHING
AND LABORATORY SERVICE

<i>Department</i>	<i>Teachers Salaries</i>	<i>Wages Accessory to Teaching</i>	<i>Wages Laboratory Service</i>	<i>Total</i>
Summer Session 1941.....	\$78,477.13	\$.....	\$.....	\$78,477.13
Aeronautical Engineering.....	77,157.60	1,243.01	3,257.23	81,657.84
Architecture.....	63,461.00	7,148.67	1,803.43	72,413.10
Bemis Research.....	3,550.00	.....	.....	3,550.00
Biology and Public Health.....	85,612.84	2,614.00	4,010.00	92,236.84
Business and Eng. Adminis.....	51,589.67	3,917.23	.....	55,506.90
Building Construction.....	20,850.00	1,020.00	.....	21,870.00
Chemistry.....	156,836.50	8,218.65	12,645.18	177,700.33
Chemical Engineering.....	79,115.07	5,099.85	6,601.48	90,816.40
Chemical Eng. Practice School..	13,911.67	.....	.....	13,911.67
Civil Engineering.....	79,431.06	3,118.17	6,084.00	88,633.23
Division of Laboratory Supplies.	.....	.....	23,304.23	23,304.23
Economics.....	58,951.32	2,970.00	.....	61,921.32
Electrical Engineering.....	184,604.73	8,493.00	19,367.98	212,465.71
English and History.....	53,950.00	1,986.83	.....	55,936.83
Gen. Eng. and General Science..	3,000.00	1,187.66	.....	4,187.66
General Studies.....	500.00	.....	.....	500.00
Geology.....	47,841.67	2,404.00	2,496.00	52,741.67
Graphics.....	24,550.00	669.99	.....	25,219.99
Industrial Relations Section....	9,221.88	.....	.....	9,221.88
Lantern Operation.....	.....	.....	1,383.67	1,383.67
Mathematics.....	67,850.84	1,050.00	.....	68,900.84
Mechanical Engineering.....	191,921.19	8,514.40	21,848.88	222,284.47
Metallurgy.....	93,893.01	3,697.44	8,096.52	105,686.97
Meteorology.....	31,184.57	1,045.00	6,702.76	38,932.33
Military Science.....	7,797.00	1,164.67	.....	8,961.67
Modern Languages.....	18,300.00	.....	.....	18,300.00
Naval Architecture.....	46,335.00	1,421.33	105.00	47,861.33
Physics.....	146,221.86	5,825.95	18,491.62	170,539.43
Solar Energy Research.....	10,883.36	.....	.....	10,883.36
<i>Totals.....</i>	<u>\$1,706,998.97</u>	<u>\$72,809.85</u>	<u>\$136,197.98</u>	<u>\$1,916,006.80</u>

(Schedule B)

SCHEDULE B-4

DEPARTMENT EXPENSES

Aeronautical Engineering				\$6,238.10
General	\$3,438.10	Staff Scholarships	\$200.00	
Structural Laboratory	1,000.00	Vibration Research	400.00	
		Met. Inst. Lab.	1,200.00	
Architecture				3,657.91
General	3,357.91	Staff Scholarships	300.00	
Bemis Research				565.37
General	565.37			
Biology and Public Health				8,600.00
General	3,900.00	Biol. Eng. Equip.	1,750.00	
Food Research	1,500.00	Staff Scholarships	1,450.00	
Building Construction				814.93
General	814.93			
Business and Engineering Administration				7,418.19
General	3,918.19	Staff Scholarships	300.00	
Sloan Fellowship	2,700.00	Special 1850 War Prod. Research	500.00	
Chemistry				25,360.29
General	18,210.29	Staff Scholarships	7,150.00	
Chemical Engineering				22,410.75
General	7,999.28	Staff Scholarships	6,391.00	
Practice School	7,020.47	Special 1635 Hauser Research	1,000.00	
Civil Engineering				12,473.98
General	3,109.50	River Hydraulic Res.	500.00	
Soil Mechanics	1,200.00	Summer Camp	4,649.48	
Structural Laboratory	1,200.00	Staff Scholarships	1,215.00	
Cement Research	600.00			
Division of Graphics				353.76
General	353.76			
Economics and Social Sciences				1,984.68
General	1,984.68			
Electrical Engineering				32,327.73
General	9,495.93	Staff Scholarships	2,752.00	
von Hippel Research	1,500.00	Center of Analysis	6,219.80	
Course VI-A Travel	900.00	Servo Mechanism Lab.	6,300.00	
Special No. 1250	5,000.00	Special Report von Hippel and Chu	160.00	
English and History				910.46
General	910.46			

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SCHEDULE B-4 — (Continued)

General Engineering and General Science.....				\$58.50
General	\$58.50			
General Studies.....				244.28
General	244.28			
Geology.....				9,792.00
General	3,592.00	Staff Scholarships	1,200.00	
Special 1863 Ore Research	5000.00			
Humanics.....				279.11
General	279.11			
Industrial Relations Section.....				6,227.39
General	6,227.39			
Mathematics.....				12,989.62
General	617.62	Staff Scholarships	372.00	
Journal of Mathematics	2,000.00	Applied Mechanics	10,000.00	
Mechanical Engineering.....				19,357.68
General	15,225.68	Staff Scholarships	3,642.00	
Plasticity Research	500.00			
Metallurgy.....				22,690.00
General	5,059.00	Chipman Research	1,350.00	
Magnetic Research	1,500.00	Staff Scholarships	2,781.00	
Mineral Dressing Res.	2,000.00	Physical Metallurgy		
		Special	10,000.00	
Meteorology.....				10,646.14
General	7,846.14	Special 1817 Cosmic		
Staff Scholarships	800.00	Ray	2,000.00	
Military Science.....				918.34
General	918.34			
Mining Engineering.....				345.90
Summer Camp	345.90			
Modern Languages.....				585.00
General	585.00			
Naval Architecture.....				1,600.00
General	1,100.00	Propeller Tunnel	500.00	
Physics.....				35,119.34
General	24,603.41	Nuclear Research	2,500.00	
Staff Scholarships	4,982.00	Special 1769 Electron		
		Microscope	3,033.93	
Solar Energy Research.....				5,750.00
General	5,750.00			
Total (Schedule B).....				<u><u>\$249,729.45</u></u>

SCHEDULE B-5
LIBRARY AND MUSEUM

Library		\$77,973.60
Salaries of Officers	\$14,515.00	
Wages, Office and Clerical	42,030.27	
Expenses	<u>21,428.33</u>	
Museum		14,036.00
Museum Committee	\$ 7,390.00	
Dard Hunter Museum	5,000.00	
Pratt Museum	<u>1,646.00</u>	
 <i>Total (Schedule B)</i>		 <u><u>\$92,009.60</u></u>

SCHEDULE B-6
CLERICAL AND OFFICE EXPENSE — ADMINISTRATION

	<i>Salaries</i>	<i>Expenses</i>	<i>Total</i>
President	\$ 6,761.63	\$ 3,829.85	\$ 10,591.48
Dean of Engineering	1,672.34	261.16	1,933.50
Dean of Science	1,268.68	145.34	1,414.02
Dean of Humanities . . . . .	. . . . .	296.04	296.04
Dean of Students	1,978.80	339.62	2,318.42
Dean of Graduate School . . . . .	. . . . .	226.09	226.09
Registrar	26,083.20	9,397.42	35,480.62
Director of Admissions	11,457.18	5,122.42	16,579.60
Treasurer and Bursar	28,610.18	9,607.82	38,218.00
Superintendent	9,294.49	1,784.82	11,079.31
News Service	1,320.00	774.16	2,094.16
Undergraduate Scholarship and Loan Fund Board	6,344.83	3,108.14	9,452.97
New Student Publicity . . . . .	. . . . .	2,437.43	2,437.43
Placement Bureau	10,874.36	3,475.81	14,350.17
Register of Former Students	4,403.46	4,403.46
	<u>\$105,665.69</u>	<u>\$45,209.58</u>	
 <i>Total (Schedule B)</i>			 <u><u>\$150,875.27</u></u>

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SCHEDULE B-7

GENERAL ADMINISTRATION EXPENSE

Bulletins				\$13,044.49
President's Report	\$1,906.49	Summer Bulletin	\$3,547.00	
Directory	852.00	General Catalogue	6,739.00	
Other Publicity				9,786.15
Honoraria	750.00	Tech Review to		
Tech Review to Schools	1,666.64	Tech Clubs	560.00	
Research Reports	1,068.63	Spectroscopy Conf.	1,100.47	
Summer Publicity	1,075.73	Department Bulletins	991.57	
Course Selection Bulletins	2,380.82	School Prizes	192.29	
General Expense				228,506.45
Allowances	18,000.00	Graduation, etc.	7,993.77	
Pensions	17,814.00	Travel	9,344.56	
Insurance, etc.	6,164.27	Telephone Service	31,797.03	
Taxes, Cambridge	11,070.33	Dues, Fees, etc.	4,421.84	
Auditing	2,410.00	Services (net)	2,953.76	
Staff Pensions	80,793.98	Society of Arts	1,953.17	
Employees Pensions	32,789.74	President's Fund	1,000.00	
Special Expense				57,661.24
Alumni Fund	2,100.00	Air Flight Insurance	1,408.00	
Visiting Com. Reports	500.00	Special Res. Appro.	5,000.00	
New Equipment	4,735.95	Tuition Awards (2)	2,700.00	
D. I. C. Expense	6,270.29	Foreign Students	672.00	
War Damage Insurance	9,490.00	Lecture Fund	1,000.00	
Honoraria	1,000.00	Employees Allow.	22,785.00	
Total (Schedule B)				<u>\$308,998.33</u>

¹ Includes Workmen's Compensation, General Liability and all coverages except Fire Insurance (see Schedule B)

SCHEDULE B-7a

SPECIAL ADMINISTRATION EXPENSE

President's Fund	\$2,016.30	Special Insurance	\$4,887.50
Additions to Steam and		Death Payment	1,400.00
Electrical System	110,000.00	War Damage Insur.	1,560.00
Telephone Serv. C.W.S.	1,023.48	Honoraria	1,250.75
Drama Shop Rental	210.00	Auditing, D. I. C.	2,000.00
Safety Committee	65,050.00	Misc. Expense,	
Special Salaries	11,741.66	D. I. C.	71,031.00
Total (Schedule B)			<u>\$272,170.66</u>

¹ Includes unexpended balance of Special Appropriation No. 1879 \$101,462.77 (page 167).

² Includes unexpended balances \$23,379.89 and \$21,768.20 Special Appropriations 1810-42-62-88 (pages 164 and 165).

SCHEDULE B-8

DEPARTMENT OF BUILDINGS AND POWER

Building Service.....				\$129,805.97
Janitors	\$39,860.95	Heat'g and Vent'g	\$13,206.91	
Night Cleaners	41,515.83	Shop Foreman (net)	3,531.69	
Watchmen	12,171.70	Mail and Elevators	6,421.87	
Window Clean.	5,304.49	Shipper, Stock Room, Matron, Messenger	7,792.53	
Power Plant and Electric Power (net).....				128,413.14
Fuel Oil.....			\$79,784.77	
Cambridge Electric Light Co., Power.....			73,018.74	
Salaries.....			19,617.71	
Repairs.....			8,315.86	
Water Supplies, etc.....			2,498.19	
Total Operating Cost.....			\$183,235.27	
Less: Credits — Electric Power		\$22,841.05		
Steam		31,981.08	54,822.13	
Repairs, Alterations and Maintenance.....				123,813.61
Buildings	\$61,753.52	Water and Gas	\$13,397.56	
President's House	5,195.11	Furniture	3,453.20	
Grounds, Roads, etc.	21,632.10	Elevators	3,571.83	
Mains and Conduits	11,624.54	Miscellaneous (net)	3,185.75	
Special Expenditures.....				34,251.75
Building Alterations	4,153.90	Storage	1,500.00	
Park. and Roadways	16,234.25	Barracks	2,500.00	
Board Track	4,794.21	Demolition Bld. 20	5,069.39	
Total (Schedule B).....				\$416,284.47

¹ Including Dormitories, Graduate House, Walker Memorial and Bexley Hall.

SCHEDULE B-9

MEDICAL DEPARTMENT

Salaries, Staff.....				\$24,028.04
Expense of Clinic.....				21,303.37
Salaries	\$10,080.72	X-Ray Operation	\$2,004.27	
Supplies, etc.	3,485.80	Physical Examinations	5,732.58	
Expense of Infirmary.....				17,923.55
Salaries	11,879.19	Food (net)	1,771.25	
Equipment	1,667.15	Laundry	2,605.96	
Total (Schedule B).....				<u>\$63,254.96</u>

SCHEDULE B-10

UNDERGRADUATE BUDGET BOARD

Athletic Coaches Salaries	\$25,250.00	
Undergraduate Dues	20,443.50	
Walker Memorial (excluding Dining Service) (net)	23,638.67	
Athletic Fields, Maintenance	19,275.57	
Sailing Pavilion and Activities (net)	6,289.26	
Boat House and Launches, Maintenance	7,237.04	
Musical Clubs	675.00	
Swimming Pool	4,138.38	
Publicity and Administration Expense	1,395.49	
<i>Total</i> (Schedule B)		<u><u>\$108,342.91</u></u>

SCHEDULE B-11

UNDERGRADUATE DORMITORY OPERATION

Income:

Rentals	\$150,898.50	
Miscellaneous	1,938.32	\$152,836.82
Less: Refunds	\$6,547.25	
House Tax Allowance	3,040.00	9,587.25

Total (Schedule B) \$143,249.57

Expense:

Salaries	\$52,861.95
Light, Heat, Power, Water	17,677.52
Repairs	21,471.49
Supplies (net)	2,973.48
Equipment	4,752.69
Laundry	3,821.67
Administration	2,609.79
Mortgage Interest	6,000.00

Total (Schedule B) \$112,168.59
 Balance 31,080.98

Total \$143,249.57

¹SCHEDULE B-12

GRADUATE HOUSE OPERATION

Income:

Rentals	\$94,487.72	
Miscellaneous	3,003.84	\$97,491.56
		<hr/>
Less: Refunds	\$ 865.51	
House Tax Allowance	1,965.00	2,830.51
		<hr/>
Total		<u>\$94,661.05</u>

Expense:

Salaries	\$40,272.93	
Real Estate Tax	12,959.37	
Light, Heat, Power and Water	9,792.00	
Repairs	4,537.84	
Supplies (net)	3,053.56	
Equipment	1,026.12	
Laundry	3,149.43	
Administration	3,040.18	
Depreciation	4,829.62	
		<hr/>
Total	\$82,661.05	
Balance	12,000.00	
		<hr/>

Total

		<u>\$94,661.05</u>
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¹ Not included in Auxiliary Activities — see pp. 135-6.

SCHEDULE B-13
WALKER DINING SERVICE

Income:	
Sale of Coupon Books (net)	\$70,588.84
Cash	118,337.72
<i>Total (Schedule B)</i>	<u>\$188,926.56</u>
Expense:	
Food	\$108,213.47
Salaries	54,787.53
Light, Heat, Power, Water	5,485.74
Laundry	3,467.23
Equipment	4,097.30
Repairs	1,893.95
Administration	3,718.81
Occupancy	6,000.00
Total Expense	\$187,664.03
Less: Increase in Inventory at June 30, 1941	1,982.55
	<u>\$185,681.48</u>
Balance transferred to Walker Dining Service Reserve	3,245.08
<i>Total (Schedule B)</i>	<u>\$188,926.56</u>

SCHEDULE B-14
GRADUATE HOUSE DINING SERVICE

Income:	
Cash	\$144,846.42
<i>Total (Schedule B)</i>	<u>\$144,846.42</u>
Expense:	
Food	\$92,327.38
Salaries	42,660.17
Light, Heat, Power, Water	2,747.21
Laundry	2,408.48
Equipment	5,034.20
Repairs	533.80
Administration	1,594.03
Occupancy	1,000.00
Total Expense	\$148,305.27
Less: Increase in Inventory at June 30, 1941	3,932.16
	<u>\$144,373.11</u>
Balance transferred to Graduate House Dining Service Reserve	473.31
<i>Total (Schedule B)</i>	<u>\$144,846.42</u>

A BRIEF DESCRIPTION OF THE ENDOWMENT AND OTHER FUNDS OF THE INSTITUTE

Including funds which have been wholly expended since 1916 for plant, equipment, facilities and special projects. The reference numbers correspond with the active funds, listed by groups on pp. 150-156, Schedule A-2.

- 212 ALBERT FUND, 1930-1940. Gifts from anonymous donor to pay fourteen years rental of M. I. T. Student House on Bay State Road, Boston.
- 214 ALPHA CHI SIGMA HOUSE FUND (Alpha Zeta Chapter), 1935-1940. Deposited for investment purposes only.
- 462 AMERICAN INSTITUTE OF BAKING FUND, 1939-42. Contributions to provide fellowships in Food Technology on problems relating to baking.
- 216 ANONYMOUS, 1924, \$1,052.50. Gift of member of Class of 1924 to accumulate until twenty-fifth reunion of Class in 1949.
- 600 LOUIE G. APPLEBEE, 1941-42, \$400. Bequest for assisting deserving students.
- 101 GEORGE ROBERT ARMSTRONG FUND, 1902, \$5,000. Bequest of George W. Armstrong in honor of son. Income available for general purposes of the Institute.
- 217 ASSOCIATION OF CLASS SECRETARIES FUND, 1940 Held for investment purposes only.
- 501 ELISHA ATKINS SCHOLARSHIP FUND, 1894, \$5,000. Bequest of Mary E. Atkins.
- 401 WILLIAM PARSONS ATKINSON FUND, 1918, \$13,000. Bequest of Charles F. Atkinson as a memorial to father — for English Department of the Institute.
- 601 EDWARD AUSTIN FUND, 1899, \$400,000. Bequest. Interest paid to needy, meritorious students and teachers to assist in payment of studies.
- 580 BABSON FUND, 1938, \$10,000. Gift of Babson's Statistical Organization, Inc. Income to be applied at intervals of not more than three years as prizes for one or more persons for certain studies and research in Economics.
- 603 THOMAS WENDELL BAILEY FUND, 1914, \$2,200. Bequest. Income used for rendering assistance to needy students in Department of Architecture.
- 604 CHARLES TIDD BAKER FUND, 1922, \$20,000. Bequest. One-half of net income for assistance of poor and worthy students and one-half to principal.
- 172 EDMUND DANA BARBOUR FUND, 1926, \$847,000. Bequest. Principal and income for general purposes of Institute. Over \$700,000 used for buildings and equipment.

- 321 WALTER S. BARKER FUND, 1927, \$10,000. Bequest. Income only available for purposes of the Library.
SIDNEY BARTLETT FUND, 1889, \$10,000. Bequest. Appropriated for new dormitories, 1924.
- 173 STEPHEN L. BARTLETT FUND, 1939-41, \$369,822.40. Bequest. Principal and income unrestricted. \$42,700 appropriated in 1940 for plant and current purposes.
- 218 BASKET BALL FUND. Excess receipts from Eastern Massachusetts basket ball competitions held for account of M. I. T. A. A. for investment purposes only.
- 441 ALBERT FARWELL BEMIS FUND, 1938, \$270,000. Bequest. To establish and maintain the Albert Farwell Bemis Foundation for research on housing. Increased in 1941 through proceeds of sale of land carried under No. 442.
- 442 ALBERT FARWELL BEMIS FUND — LAND ACCOUNT, 1938, \$119,450. Estimated book value of land in Wellesley, Newton and Dedham received under bequest. Proceeds of sales carried to No. 441.
ALBERT FARWELL BEMIS, 1923. \$100,000. Gift. Used for new dormitory unit, 1923.
- 219 BESS BIGELOW FUND, 1936-38, \$25,000. Anonymous donation for special purposes subject to approval of President.
- 503 BILLINGS STUDENT FUND, 1900, \$50,000. Bequest of Robert C. Billings. Students receiving benefit are expected to abstain from use of alcohol or tobacco in any form.
- 103 GEORGE BLACKBURN MEMORIAL FUND, 1931-42, \$960,495.14. Bequest of Harriette A. Nevins. Income for general purposes.
STANTON BLAKE FUND, 1889, \$5,000. Bequest. Used for educational plant, 1926.
- 581 ROBERT A. BOIT FUND, 1921, \$5,000. Bequest. Income to stimulate students' interest in best use of English Language through annual prizes or scholarships.
- 403 FRANK WALTER BOLES MEMORIAL FUND, 1915, \$25,200. Under agreement between Harriet A. Henshaw and M. I. T., income paid to committee of Department of Architecture, to purchase fine arts material and to supplement and strengthen instruction in architectural design.
- 606 LEVI BOLES FUND, 1915, \$10,000. Bequest of Frank W. Boles in memory of father. Income for assistance of needy and deserving students.
- 463 WILLIAM SUMNER BOLLES FUND, 1924, \$9,400. Bequest of William P. Bolles in memory of son, to maintain either fellowship, traveling scholarship or resident scholarship. Recipient to have character, ability or promise.
- 504 JONATHAN BOURNE FUND, 1915, \$10,000. Bequest of Hannah B. Abbe. Income to aid deserving students.
- 505 ALBERT G. BOYDEN FUND, 1931-41, \$602,729.05. Bequest. Estate of Elizabeth R. Stevens. Income for scholarships. Preference to students from Fall River and Swansea, Mass.
- 104 CLARA H. BRIGGS, 1941, \$12,512.25. Bequest. Income for general purposes.

- 253 MAJOR BRIGGS FUND, 1940-42, \$32,969.71. Bequest under will of Frank Harrison Briggs, the principal and/or income to be used as Advisory Council in Athletics may decide. No part of either principal or income to be used to defray living expenses or tuition fees of any student.
- 506 HARRIET L. BROWN FUND, 1922, \$6,000. Bequest. Income to needy and deserving young women students, as would otherwise be unable to attend. In case two or more applicants of equal merit, preference given to native of either Massachusetts or New Hampshire.
- 464 MALCOLM COTTON BROWN FUND, 1919, \$11,000. Under agreement between Caroline Cotton Brown, Charles A. Brown and M. I. T., to establish memorial to son, Lieutenant Brown, R. A. F., for advanced study and research in Physics.
- 608 BURSAR'S FUND, 1907, \$6,000. Bequest of Lyman S. Rhoads. Income and repayments used for loans to students in discretion of Bursar, subject to approval of President and Treasurer.
- 443 SAMUEL CABOT FUND, 1912, \$50,000. Gift of Helen N. Cabot in honor of husband. Income for purchase of apparatus and supplies required in conduct of research in Industrial Chemistry.
- HOWARD A. CARSON FUND, 1932, \$1,000. Bequest. Used for new equipment.
- 610 MABEL BLAKE CASE FUND, 1920, \$25,000. Bequest of Caroline S. Freeman. Income to aid deserving students (preferably women) who are in need of assistance.
- 508 NINO TESHER CATLIN FUND, 1926, \$1,000. Gift of Maria T. Catlin in memory of son. Income for needy and deserving students — not a condition but if possible, award to be made to member of Lambda Phi Fraternity.
- 405 WILLIAM E. CHAMBERLAIN FUND, 1917-19, \$6,000. Bequest. Income used for Department of Architecture.
- 465 CHANDLER FUND, 1927-36, \$4,511. Originally a gift from Architectural Society and used as a loan fund to be administered by Head of Architectural Department. Increased by \$5,000 in 1939, gift of Mr. and Mrs. William Emerson and income to be used for Travelling Fellowship in City Planning.
- WILLIAM L. CHASE FUND, 1925, \$11,590.09. Bequest, \$7,500 appropriated for Homberg Infirmary, 1927. Balance used for educational plant, 1928.
- 407 CHEMICAL ENGINEERING PRACTICE FUND, 1915-16, \$300,000. Gift of George Eastman for Chemical Engineering Stations provided Institute will carry forward this plan of education for a reasonable period.
- 222 EDNAH DOW CHENEY FUND, 1905-06, \$13,900. Bequest. Income for maintenance and care of Margaret Cheney Room for women students.
- 105 CHARLES CHOATE FUND, 1906-21, \$35,800. Bequest. Income for general purposes.
- 325 FRANK HARVEY CILLEY FUND, 1913, \$57,700. Bequest. Income and such part of principal as necessary for purchase of suitable books, photographs, statuary, etc., for library and gymnasium of Walker Memorial.
- 509 LUCIUS CLAPP FUND, 1905, \$4,900. Bequest. Income to worthy students who may not be able to complete their studies without help.

- 272 CLASS OF 1874 FUND, 1934, \$180. Held subject to use by Class of 1874.
- 273 CLASS OF 1887 FUND, 1941, \$2,668.58. Held for use of Class and for final distribution as provided in Declaration of Trust.
- 510 CLASS OF '96 FUND, 1923-41, \$2,397. Gift. Award subject to approval of Class Secretaries. Preference to descendants of members of Class. Scholarships to be considered a loan to be repaid when and if able.
- 270 CLASS OF 1898 FUND, \$5,535. By subscription of certain members of class from 1927-31. Income only for scholarship loans, as authorized by committee of class.
- 583 CLASS OF 1904 FUND, 1925, \$392. Contributions received by Professor Gardner for Architectural Department prizes.
- 512 CLASS OF 1909 SCHOLARSHIP FUND. Being accumulated through contributions and from proceeds of life insurance policies. Principal to be invested, income available for scholarship aid with preference to direct descendants of members of Class of 1909.
- 223 CLASS OF 1914 FUND. Held for investment purposes only.
- 266 CLASS OF 1917. SPECIAL, 1937, \$100. For deposit only.
- 224 CLASS OF 1918 (ORGAN) FUND. Subscriptions by class members toward purchase of an organ for Walker Memorial.
- 513 CLASS OF 1922 SCHOLARSHIP FUND, 1942, \$1,000. For scholarships.
- 268 CLASS OF 1934 FUND, SPECIAL. Held for investment purposes only.
- 515 CLASS OF 1938 SCHOLARSHIP FUND, 1938-42, \$599.14. Gift of Class of 1938. Income for scholarships.
- 225-240 inc.

CLASS FUNDS

Note: These funds are being accumulated for the several classes whose members took out life insurance toward a gift to the Institute on their Twenty-Fifth Reunions. From certain of these, a portion may be applied in accordance with the terms of the several plans toward keeping alive policies that might lapse on account of non-payment or as otherwise designated. By vote of the Class of 1923, \$10,000 was appropriated in 1940 from their Class Fund toward construction of the sun garden adjoining new swimming pool.

- 301 SAMUEL C. COBB FUND, 1916, \$36,000. Bequest. Income for salaries of President and professors.
- 612 FRED L. AND FLORENCE L. COBURN FUND, 1932, \$5,000. Bequest. Income to aid needy and worthy students, preference being given to those residing in Somerville, Mass.
- 614 COFFIN MEMORIAL FUND, 1929, \$35,000. Gift of the Estate of Charles A. Coffin. For loans or other aid to students as determined by Executive Committee.
- 466 COLLAMORE FUND, 1916, \$10,000. Bequest of Helen Collamore. Income primarily to aid women students in post-graduate courses, secondarily, for purchase of instruments for Chemical Laboratory.
- HELEN COLLAMORE FUND, 1917, \$12,384.97. Bequest. Used for new dormitories, 1924.
- SAMUEL P. COLT FUND, 1920-22, \$20,000. Bequest. Used for new dormitories, 1924.

- 241 ARTHUR J. CONNER, 1941-42, \$7,000. Gifts in anticipation of and for ultimate addition to residue of a trust for construction of a dormitory.
- 615 GEORGE R. COOKE, 1939-40, \$3,500. Gift of George R. Cooke, Jr. Income to be awarded, preferably in Civil Engineering or related field, to student preparing for Public Service and Government.
- 245 COSMIC TERRESTRIAL RESEARCH FUND, 1938-40, \$61,000. Gift (anonymous) for special research.
CRANE AUTOMOTIVE FUND, 1928, \$5,000. Gift of Henry M. Crane. Used for purchase of equipment for Aeronautical Laboratory, 1928-40.
- 516 LUCRETIA CROCKER FUND, 1916, \$50,000. Bequest of Matilda H. Crocker. Income for establishment of scholarships for women in memory of sister.
- 409 CROSBY HONORARY FUND, 1916, \$1,633. Contributions in honor of William Otis Crosby (Professor Emeritus). Income for upbuilding of the Geological Department, especially its collections.
EDWARD CUNNINGHAM FUND, 1917, \$15,000. Gift. For new building and equipment at Civil Engineering Summer Camp, Maine.
- 467 DALTON GRADUATE CHEMICAL FUND, 1896, \$5,000. Gift of Charles H. Dalton. Income for scholarships for American male graduates of M.I.T., for advanced chemical study and research — preference given to chemical research especially applicable to textile industries.
- 517 ISAAC W. DANFORTH FUND, 1903, \$5,000. Bequest of James H. Danforth. Income for scholarship purposes as a memorial to brother.
N. LORING DANFORTH FUND, 1937, \$5,000. Bequest. Principal and income for general purposes. Appropriated for educational plant, 1940.
- 616 DEAN'S FUND, 1924, \$3,350. Contributions. To be loaned by Dean to needy students.
- 618 CARL P. DENNETT FUND, 1926, \$500. Gift. To be loaned to students, preferably Freshmen, at discretion of President.
- 520 ANN WHITE DICKINSON FUND, 1898, \$40,000. Bequest. Income used to establish free scholarships. Such persons enjoying benefit shall be worthy young men of American origin.
- 620 DORMITORY FUND, 1903, \$2,700. Contributions. Income for scholarship purposes.
GEORGE B. DORR FUND, 1890, \$49,573.47. Bequest. Appropriated for educational plant, 1918.
- 410 SUSAN E. DORR FUND, 1914, \$95,000. Bequest. Income for use and benefit of Rogers Physical Laboratory.
- 468 DOW CHEMICAL COMPANY FUND, 1939-40. Gift. \$1,500 for fellowships.
- 247 DRAMA CLUB THEATRE FUND, 1938, \$400. Deposited by Drama Club of M.I.T. toward future purchase of theatrical equipment.
- 107 EBEN S. DRAPER FUND, 1915, \$100,000. Bequest. Income used for general purposes of the Institute.
CHARLES C. DREW FUND, 1920, \$305,171.52. Bequest. Appropriation to educational plant, 1921-24.
- 521 THOMAS MESSINGER DROWN FUND, 1928, \$50,000. Bequest of Mary Frances Drown. Income to establish scholarships for deserving undergraduate students.

- 109 COLEMAN DU PONT FUND, 1931-38, \$216,000. Bequest. Income for support and maintenance of the Institute.
PIERRE DU PONT FUND, 1938, \$25,000. Gift. Used for new equipment.
- 469 DU PONT DE NEMOURS FUND. For graduate scholarship in Chemical Engineering.
- 111 EASTMAN CONTRACT FUND, 1924, \$9,500,000. Gift of George Eastman. Income for general purposes of the Institute.
- 113 GEORGE EASTMAN BUILDING FUND, 1916-17, \$2,500,000. Gift of George Eastman on condition that \$1,500,000 be raised by alumni and others. Balance to be used as needed for new educational buildings. \$1,225,000 used for George Eastman Research Laboratories in 1932, \$725,000 for New Rogers Building and Wind Tunnel in 1939.
- 411 GEORGE EASTMAN FUND, 1918, \$400,000. Gift of George Eastman. Income for Chemistry and Physics. Principal available for addition to EASTMAN BUILDING FUND after latter is exhausted.
- 115 CHARLES W. EATON FUND, 1929-40, \$259,000. Bequest. Income for advancement of general purposes of Institute. (From 1911 to 1923 Mr. Eaton gave \$15,501.45 for Civil Engineering Summer Camp in Maine).
- 117 EDUCATIONAL ENDOWMENT FUND, 1920-21, \$7,574,000. \$4,000,000 gift from George Eastman and balance contributed by alumni and others. Income for current educational expenses.
- 119 MARTHA ANN EDWARDS FUND, 1890, \$30,000. Gift. Income for general purposes.
- 621 FRANCES AND WILLIAM EMERSON FUND, 1930, \$100,000. Gift. Income for aid of regular and special students in Department of Architecture.
- 584 WILLIAM EMERSON PRIZE FUND, 1939, \$2,059. Contributed by friends as a fund for prizes to architectural students.
F. W. EMERY FUND, 1916, \$120,000. Bequest. Used for buildings and equipment.
- 121 WILLIAM ENDICOTT FUND, 1916, \$25,000. Bequest. Income for general purposes.
- 210 ENDOWMENT RESERVE FUND, 1924. Created and otherwise increased by gains from sales or maturities of investments and decreased by premium amortization of bonds and losses and charges from sales or maturities. Belongs to all funds sharing general investments.
ARTHUR F. ESTABROOK FUND, 1923-38, \$100,800. Bequest. Used for purchase of land and equipment.
IDA F. ESTABROOK FUND, 1926-37, \$22,157.51. Bequest. Used for educational plant.
- 524 FARNSWORTH FUND, 1889, \$5,000. Bequest of Mary E. Atkins. Income for scholarships.
HENRIETTA G. FITZ FUND, 1930, \$10,000. Bequest. For general purposes. Appropriated for educational plant, 1940.
- 412 HAROLD H. FLETCHER FUND, 1942, \$10,000. Bequest under will of Herbert H. Fletcher. To endow a bed in the Institute's Infirmary.

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- 525 CHARLES LEWIS FLINT FUND, 1889, \$5,000. Bequest. Income for support of worthy student, preference given graduate of English High School, Boston.
- 327 CHARLES LEWIS FLINT FUND, 1889, \$5,000. Bequest. Income for purchase of books and scientific publications for library.
- 303 SARAH H. FORBES FUND, 1901, \$500. Gift of Malcolm Forbes as memorial to mother. Income for salaries.
- 526 SARAH S. FORBES FUND, 1913, \$3,400. Gift of Sarah S. Forbes, William B. Rogers and Henry S. Russell. Income for maintenance and education of scholar in M. I. T.
- 123 FRANCIS APPLETON FOSTER FUND, 1922, \$1,000,000. Bequest. Income for purposes of Institute.
- 125 JOHN W. FOSTER FUND, 1938, \$299,650. Bequest. Income for purposes of the Institute.
- 248 MATILDA A. FRASER FUND, 1942, \$859.89. Bequest. Towards construction of a women's dormitory.
- 127 ALEXIS H. FRENCH FUND, 1930, \$5,000. Bequest. Income for general purposes of Institute.
CAROLINE L. W. FRENCH FUND, 1916, \$100,843.34. Bequest. Used for new equipment, 1928.
- 129 JONATHAN FRENCH FUND, 1915-16, \$25,000. Bequest of Caroline L. W. French. Income for purposes of the Institute.
- 131 HENRY CLAY FRICK FUND, 1925-38, \$1,831,000. Bequest. Institute received ten shares of a total of one hundred shares of his residuary estate. Income for general purposes.
FRIENDS OF THE LIBRARY FUND. Contributions for purchase of books and for other purposes of the Institute Library.
WALTER L. FRISBIE FUND, 1923, \$7,614.98. Bequest. Used for educational plant, 1928.
- 305 GEORGE A. GARDNER FUND, 1898, \$20,000. Gift. Income for salaries of instructors.
- 133 GENERAL ENDOWMENT FUND, 1921, \$1,527,000. Contributions by alumni and others to meet George Eastman's condition relative to gift of \$2,500,000, his building fund (No. 108).
- 623 NORMAN H. GEORGE FUND, 1919-25, \$93,400. Bequest. Income for assistance of worthy and needy students.
- 624 ARTHUR B. GILMORE FUND, \$10,000, 1941. Bequest. Net income to assist needy students, members of Beta Theta Pi — not more than two students in any one year.
CHARLES W. GOODALE FUND, 1929, \$50,000. Bequest. Used for new dormitory, 1930.
- 135 ELIOT GRANGER FUND, 1936, \$20,000. Bequest under will of Mary Granger in memory of deceased son. Income for the general purposes of the Institute.

- 625 JOHN A. GRIMMONS FUND, 1930-42. Bequest of C. Lillian Moore of Malden. Principal held by Old Colony Trust Co., Trustee. Income for loans to undergraduates in Electrical Engineering. Unused balances available for purchase of apparatus and equipment in Department of Electrical Engineering.
- 527 HALL-MERCER SCHOLARSHIP FUND, 1940-42, \$63,560.90. Bequest under will of Alexander G. Mercer. The income to be used for tuition and other necessary expenses of students.
GEORGE WYMAN HAMILTON FUND, 1935, \$54,414.15. Appropriated for new equipment, 1937-39.
- 626 JAMES H. HASTE FUND, 1930, \$181,000. Bequest. Income for aid of deserving students of insufficient means.
- 136 CHARLES HAYDEN FUND, 1937, \$1,000,000. Bequest of Charles Hayden. Income for general educational purposes of the Institute.
CHARLES HAYDEN, 1925, \$42,700.76. Gift. Used for educational plant.
CHARLES HAYDEN, 1927, \$100,000. Gift for new dormitories.
- 528 CHARLES HAYDEN MEMORIAL SCHOLARSHIP FUND, 1940-41, \$80,000. From the Charles Hayden Foundation. For entrance scholarships and preference given to students from Boston and New York City.
- 249 CHARLES HAYDEN FOUNDATION DENTAL CLINIC FUND, 1940, \$10,000. To assist in establishment of and necessary equipment for a Dental Clinic available to entire student body.
- 309 JAMES HAYWARD FUND, 1866, \$18,800. Bequest. Income for salaries.
JAMES W. HENRY FUND, 1935, \$8,226. Bequest. Used for new equipment.
- 137 JOHN MARSHALL HILLS, 1941-42, \$366,181.10. Bequest. Income for general purposes of M. I. T.
FREDERICK S. HODGES FUND, 1928, \$57,316.26. Bequest. Appropriated for new dormitories.
- 176 ELLIS HOLLINGSWORTH FUND, 1940, \$10,000. Bequest for unrestricted use.
- 531 GEORGE HOLLINGSWORTH FUND, 1916, \$5,000. Bequest of Rose Hollingsworth. Income used for scholarship.
- 585 ROGER DEFRIEZ HUNNEMAN PRIZE FUND, 1927, \$1,060. Gift of W. C. Hunneman in memory of Roger Defriez Hunneman, '23. Income paid as annual award to most meritorious student in Chemical Engineering who has shown most outstanding originality in his work as determined by that Department.
ABBY W. HUNT FUND, 1936-38, \$76,000. Bequest. For general purposes. \$60,000 used for alterations, 1937. Balance for new equipment, 1938.
- 533 T. STERRY HUNT FUND, 1894, \$3,000. Bequest. Income to a student in Chemistry.

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- 534 WILLIAM F. HUNTINGTON FUND, 1892, \$5,000. Gift of Susan E. Covell. Income to deserving students. Preference to be given to students in Civil Engineering.
- 211 INCOME EQUALIZATION RESERVE FUND, 1937. Created by appropriation of excess income from general investments for year 1936-37 toward maintenance of income for ensuing years.
- 187 INDUSTRIAL FUND, 1924-40. This fund succeeded "Tech Plan" Contracts, payments under which went to the Educational Endowment Fund. Now receives surplus from operations of Division of Industrial Cooperation and Research. Used for purchase of new equipment and support of special research.
- 250 INDUSTRIAL ECONOMICS FUND, 1940-42, \$12,250. Contributions in support of Graduate Program.
- 251 INDUSTRIAL RELATIONS FUND, 1938-42, \$208,616.70. Contributions in support of the Industrial Relations Section of the Department of Economics.
- CHARLES C. JACKSON, 1912, \$25,000. Gift. Used for purchase of new site.
- 138 JAMES FUND, 1898-99, \$163,000. Bequest of Julia B. H. James. Income for development of M. I. T.
- 627 DAVID L. JEWELL FUND, 1928, \$25,000. Bequest. Income for tuition of five young men who are worthy of assistance and who, were it not for such assistance, might be unable to pursue their studies at M. I. T.
- 474 REBECCA R. JOSLIN FUND, 1924-36, \$6,540. Gift and Bequest. Income awarded as a loan to advanced student in Chemical Engineering on recommendation of that Department — restricted to native and resident of Massachusetts. Beneficiary to abstain from using tobacco in any form.
- 536 JOY SCHOLARSHIPS, 1886, \$7,500. Gift of Nabby Joy. Income for scholarships for one or more women studying natural science at M. I. T.
- WILLIAM R. KALES, 1925-27, \$11,000. Gift for new dormitories.
- 413 ARTHUR E. KENNELLY FUND, 1940-42, \$66,384.06. Bequest. Income only to be used for the study of mathematics directed toward physics or physical applications.
- 341 WILLIAM HALL KERR FUND, 1896, \$2,000. Gift of Alice M. Kerr. Income for the annual purchase of books and drawings in machine design.
- DAVID P. KIMBALL FUND, 1924, \$10,000. Bequest. Used for educational plant, 1926.
- 628 LLORA CULVER KRUEGER SCHOLARSHIP FUND, 1936, \$5,573.75. Bequest. Both principal and income to be available for needy and worthy students from Schenectady and vicinity.
- 476 WILFRED LEWIS FUND, 1930, \$5,000. Gift of Emily Sargent Lewis. Income for maintenance of graduate student in Mechanical Engineering.
- 538 WILLIAM LITCHFIELD FUND, 1910, \$5,000. Bequest. Income for scholarship on competitive examination.

- 414 **ARTHUR DEHON LITTLE MEMORIAL FUND, 1937, \$157,460.** Bequest under will of Dr. A. D. Little. Income to be used in Departments of Chemistry and Chemical Engineering. (The income from 5,543 shares of common stock of A. D. Little, Inc., held by Voting Trustees for the benefit of the Institute under declaration of trust dated November 18, 1936 and in force for twenty years is included in this total.)
HIRAM H. LOGAN FUND, 1933-38, \$19,455. Bequest. Principal and income for general purposes of M. I. T. Appropriated for educational plant, 1940.
JOHN M. LONGYEAR, 1915-16, \$30,000. Gift. Used for land and equipment, 1916.
- 539 **ELISHA T. LORING FUND, 1890, \$5,000.** Bequest. Income for assistance of needy and deserving pupils.
- 265 **LOUISVILLE TECHNOLOGY FOUNDATION FUND, 1935, \$50.** Founded by Louisville Tech Club toward scholarship aid for local student.
- 541 **LOWELL INSTITUTE FUND, 1923, \$2,300.** Gift from alumni of Lowell Institute to establish scholarship for its graduates.
- 139 **KATHARINE B. LOWELL FUND, 1895, \$5,000.** Gift of Augustus Lowell in honor of Mrs. Lowell. Income for purchase of books and apparatus for Department of Physics.
ARTHUR T. LYMAN FUND, 1913, \$5,000. Bequest. Used for educational plant, 1926.
JAMES MCGREGOR FUND, 1913, \$2,500. Bequest. Used for educational plant, 1926.
- 542 **RUPERT A. MARDEN FUND, 1933, \$2,000.** Gift (anonymous). Income to aid worthy student — Protestant and of American origin — preference to student taking Coöperative Course in Electrical Engineering (Course VI-A).
- 311 **WILLIAM P. MASON FUND, 1868, \$18,800.** Bequest. Income to support a professorship in the Institute.
M. I. T. ALUMNI FUND, 1907. Total subscriptions of alumni to 1924, \$632,500. \$632,000 appropriated for new equipment, Walker Memorial 1916 Reunion and Dormitories.
- 142 **M. I. T. ALUMNI EQUIPMENT FUND, 1941, \$12,500.** Transferred from Alumni Fund. To be accumulated for a major objective.
- 143 **M. I. T. ALUMNI GYMNASIUM FUND, 1938-42.** Total subscription \$400,000. Appropriated for Briggs Field House, Athletic Field and for new swimming pool unit of the proposed alumni gymnasium.
- 144 **M. I. T. ALUMNI FUND, 1940-42.** First two years of plan adopted by the alumni of the Institute for the annual raising of funds for support of the Alumni Association and the *Technology Review* — the balance to be applied toward specific purposes other than operating expenses of the Institute.
- 145 **M. I. T. ALUMNI FUND, 1942-43.** Subscriptions to date of third year operation (See No. 144.)
- 263 **M. I. T. ALUMNI ASSOCIATION PERMANENT FUND, 1929-38.** Deposited with M. I. T. for investment purposes only.
- 255 **M. I. T. EMPLOYEES' FUND, 1938.** Proceeds of employees' social activities held for benefit and relief purposes.

- 260 M. I. T. TEACHERS' INSURANCE FUND, 1926-38. Balance of two per cent salary deductions under M. I. T. Pension and Insurance Plan in excess of Group Insurance Premiums paid.
- 261 M. I. T. TEACHERS' INSURANCE FUND, SPECIAL, 1928-38. Refund of premiums paid on Group Insurance under M. I. T. Pension and Insurance Plan held at interest and accumulated. Appropriated for special pension purposes.
JOHN LAWRENCE MAURAN FUND, 1934, \$10,000. Bequest. Principal and income for benefit of Department of Architecture. Used, in part, toward house projects in Wellesley and Wakefield, 1937-40.
- 417 GEORGE HENRY MAY FUND, 1914, \$4,250. Gift. Income for benefit of Chemical Department.
- 543 GEORGE HENRY MAY FUND, 1914, \$5,000. Gift. Income to assist graduates of Newton High School recommended as eligible by superintendent and head masters of Newton High Schools. Beneficiary to issue a note payable without interest.
- 141 THOMAS McCAMMON FUND, 1930, \$15,000. Bequest in honor of father, James Elder McCammon. Income available for general purposes.
- 587 JAMES MEANS FUND, 1925, \$2,700. Gift of Dr. James H. Means as a memorial to father. Income for annual prize for essay on an aeronautical subject.
METALLURGY, SPECIAL FUND, 1938, \$10,000. Subscription (anonymous) used for special equipment for Department of Metallurgy.
HIRAM F. MILLS FUND, 1923, \$10,175. Bequest. Appropriated for educational plant, 1937.
- 629 EDWARD F. and MARY R. MILLER FUND, 1941, \$10,000. Bequest. To be used at discretion of bursar as a fund in assisting needy students who have been found by the medical director to require special medical or surgical treatment.
- 419 SUSAN MINNS FUND, 1930. Gift of Miss Susan Minns — tract of land on Memorial Drive for use in any way deemed best for benefit of plan regarding construction and maintenance of an hydraulic laboratory.
- 545 JAMES H. MIRRLEES FUND, 1886, \$2,500. Gift of James Buchanan Mirrlees. Income to such student in third or fourth year Mechanical Engineering most deserving pecuniary assistance.
- 420 FORRIS JEWETT MOORE FUND, 1927-31, \$32,000. Gift of Mrs. F. Jewett Moore as a memorial to husband. Income or principal expended subject to approval of Executive Committee by a committee of three members of the Department of Chemistry — to make the study of Chemistry more interesting and surroundings of such study more attractive.
- 478 MOORE FUND, 1914-28-29, \$24,200. Gift of Mrs. F. Jewett Moore. Income to help some Institute graduate to continue studies in Europe, especially organic chemistry. Preference to student who has distinguished himself in this subject while an undergraduate.
- 546 FRED W. MORRILL FUND, 1941, \$2,000. Bequest. Income for financial assistance to students.
- 146 KATE M. MORSE FUND, 1925, \$25,000. Bequest. Income for general purposes of M. I. T.

- 147 EVERETT MORSS FUND, 1934, \$25,000. Bequest. Income for general purposes of M. I. T.
EVERETT MORSS, 1916, 1921-25, \$35,000. Gifts. For Walker Memorial murals.
- 264 HENRY A. MORSS NAUTICAL FUND, 1937, \$3,500. Gift for maintenance of sailing activities and sailing pavilion.
- 190 JOHN WELLS MORSS FUND, 1940, \$50,000. Bequest. Principal and income for general purposes.
ALBERT H. MUNSELL FUND, 1920, \$7,908.28. Bequest. Used for educational plant, 1928.
MARGARET A. MUNSELL FUND, 1920, \$1,105.32. Bequest. Used for educational plant, 1928.
NATHANIEL C. NASH FUND, 1881, \$10,000. Bequest. Appropriated for new dormitories, 1924.
- 547 NICHOLS FUND, 1895, \$5,000. Bequest of Betsy F. W. Nichols. Income for scholarship to student in Chemistry.
- 548 CHARLES C. NICHOLS FUND, 1904, \$5,000. Bequest. Income for scholarship.
WILLIAM E. NICKERSON FUND, 1928, \$50,000. Gift. Principal and income used to finance chair in Humanics, 1928-40.
MOSES W. OLIVER FUND, 1921, \$12,870.49. Used for educational plant, 1938.
- 343 GEORGE A. OSBORNE FUND, 1928, \$10,000. Bequest. Income for benefit of mathematical library.
- 550 JOHN FELT OSGOOD FUND, 1909, \$5,000. Bequest of Elizabeth P. Osgood in memory of husband. Income for scholarship in Electricity.
- 551 GEORGE L. PARMELEE FUND, 1921, \$17,000. Bequest. Income for tuition of either special or regular worthy students.
- 195 EMERETTE O. PATCH FUND, 1935-38, \$8,240.84. Bequest. \$3,000 used for special expenditures, 1938.
FRANK E. PEABODY FUND, 1920, \$51,467.35. Bequest. Used for educational plant, 1921 and 1926.
FRANCES M. PERKINS, 1912, \$122,569.67. Bequest. Used for educational plant.
H. B. PERKINS, 1940, \$250. Bequest. Used for new equipment, 1940.
- 149 RICHARD PERKINS FUND, 1887, \$50,000. Bequest. Income for general purposes.
- 552 RICHARD PERKINS FUND, 1887, \$50,000. Bequest. Income for scholarships.
- 480 WILLARD B. PERKINS FUND, 1898, \$6,000. Bequest. Income to be expended every fourth year for travelling scholarships in architecture.
- 422 EDWARD D. PETERS FUND, 1924, \$5,000. Bequest of Elizabeth W. Peters. Income for the Department of Mineralogy.
E. S. PHILBRICK FUND, 1922, \$36,213.92. Bequest. Used for educational plant, 1926.

- PRESTON PLAYER FUND, 1933, \$20,000. Bequest. Used for educational plant, 1938.
- 423 PRATT NAVAL ARCHITECTURAL FUND, 1916, \$1,071,000. Bequest of Charles H. Pratt to endow the Department of Naval Architecture and Marine Engineering to be called forever Pratt School of Naval Architecture and Marine Engineering — to erect a building — remainder held in trust. Income to support said school.
- 274 PRESIDENT'S FUND, SPECIAL, 1941, \$10,000.00. Gift. Principal and/or income to be used by President as desired.
CHARLES O. PRESCOTT, 1935, \$30,640.78. Principal and income used for educational plant, 1938.
- 484 PROPRIETORS LOCKS AND CANALS FUND, 1927, \$4,000. Gift to finance post-graduate scholarship in Textile Research, mechanical or chemical, to American-born graduate of Lowell Textile School, nominated by the Trustees of that School and approved by Executive Committee of Locks and Canals.
- 150 J. W. & B. L. RANDALL FUND, 1897, \$83,000. Bequest of Belinda L. Randall as a permanent fund or in erecting a building with those names.
- 553 THOMAS ADELBERT READ FUND, 1934-35, \$21,117. Bequest of Julia A. Read to establish scholarship in memory of her brother and their father and mother. Income to be awarded to some worthy and needy student, preferably resident of Fall River, Mass.
- 630 CHARLES A. RICHARDS, 1939, \$31,719.32. Bequest. Income only to be used for assistance of poor Protestant students in the Institute.
- 449 ELLEN H. RICHARDS FUND, 1912, \$15,000. Income for promotion of research in Sanitary Chemistry, for fellowships to advanced students, for employment of research assistants and in such other ways as will best promote investigation in that field.
- 425 RICHARDS MEMORIAL FUND, 1929. Balance of subscriptions from friends for portrait of Professor Richards available for Mining Department.
- 451 CHARLOTTE B. RICHARDSON FUND, 1891, \$30,000. Bequest. Income to support of Industrial Chemical School.
- 554 JOHN ROACH SCHOLARSHIP FUND, 1937, \$3,000. Bequest under will of Emeline Roach, income to provide annual scholarship to needy and deserving student in Naval Architecture and Marine Engineering.
- RUSSELL ROBB FUND, 1928, \$28,750. Bequest. Appropriated for new dormitories, 1930.
- ROCKEFELLER FOUNDATION RESEARCH FUND, 1931-36, \$170,000. Contributed and expended for Research in Science Departments over period of five years.
- 313 HENRY B. ROGERS FUND, 1873, \$25,000. Gift. Income for salaries of one or more professors or instructors.
- 486 HENRY BROMFIELD ROGERS FUND, 1921, \$20,000. Bequest of Anna Perkins Rogers. Income to establish fellowship or scholarship for women graduates of M. I. T. or other colleges whose graduate work is carried on at M. I. T.
ROBERT E. ROGERS FUND, 1886, \$7,600. Bequest in memory of his brother, William B. Rogers. Used for new equipment, 1940.

- 631 WILLIAM BARTON ROGERS FUND. Present, \$39,000. Established by subscriptions of members of Alumni Association through Prof. R. H. Richards for loans to students. By vote of Executive Committee in March 1935, approved by Alumni Council, the income, not now needed for loans, is made available for special scholarship aid in the discretion of the President and Treasurer.
- 151 WILLIAM BARTON ROGERS MEMORIAL FUND, 1883-84-85, \$250,000. Contributions from 91 persons. Income for support of Institute.
- 452 WILLIAM BARTON AND EMMA SAVAGE ROGERS FUND, 1937, \$102,064.18. Bequest of Dr. Francis H. Williams. Income to be added to principal for twenty years — after which eighty (80) per cent of income may be used for research in pure science — balance to be added to fund.
- 426 FRANCES E. ROPER FUND, 1936, \$2,000. Bequest. Income for use in Department of Mechanical Engineering.
- 345 ARTHUR ROTCH ARCHITECTURAL FUND, 1895, \$5,000. Bequest. Income for Library or collection of Department of Architecture.
- 427 ARTHUR ROTCH FUND, 1895, \$25,000. Bequest. Income for general purposes of Department of Architecture.
- 589 ARTHUR ROTCH FUND, 1895, \$5,000. Bequest. Income for annual prize to student in regular course in Architecture graduating highest in class.
- 591 ARTHUR ROTCH SPECIAL FUND, 1895, \$5,000. Bequest. Income for annual prize to student who shall be ranked highest at end of two years special course in Architecture.
- 488 RICHARD LEE RUSSEL FUND, 1904, \$2,000. Gift of Theodore E. Russel. Income to assist worthy student of high standing in Department of Civil Engineering either undergraduate or post-graduate.
- 555 WILLIAM PATRICK RYAN MEMORIAL FUND, 1935, \$3,637. Contributed by friends of Professor Ryan. Income for scholarship in Chemical Engineering.
- 277 WILLIAM PATRICK RYAN SPECIAL FUND, 1933, \$3,000. Appropriation Educational fund for three children of late Prof. W. P. Ryan.
- 592 HENRY WEBB SALISBURY, 1941, \$1,100. Gift. Income for award to outstanding student in Aeronautics — initially in form of reference books in Aeronautics. (\$100 of gift to be considered as income.)
- 152 SALTONSTALL FUND, 1901, \$40,000. Bequest of Henry Saltonstall. One-fourth income each year added to principal and remaining three-fourths expended for benefit of Institute.
- 490 HENRY SALTONSTALL FUND, 1901, \$10,000. Bequest. Income to aid one or more needy students.
- 492 JAMES SAVAGE FUND, 1873, \$10,000. Bequest. Income for scholarships in institution "where my son-in-law, William B. Rogers, is President."
- 153 SAMUEL E. SAWYER FUND, 1895, \$4,700. Bequest. Income to be used in such manner as will best promote interests of M. I. T.
- 556 JOHN P. SCHENKL FUND, 1922, \$43,800. Bequest of Johanna Pauline Schenkl in memory of father. Income for scholarships in Department of Mechanical Engineering.
- THEODORE EDWARD SCHWARZ MEMORIAL FUND, 1937-38, \$4,391.86. Gift. For equipment of a suitable room for proposed map collection.

- 278 SEARS TERMINAL RESERVE FUND, 1941, \$2,827.23. Balance of rent advanced (as per lease) and held against any legal or other expenses in connection with possible early purchase or other disposition of Somerville property or other matters relating thereto. Balance remaining at end of lease to be added to annual income from the property.
- 279 SEDGWICK MEMORIAL LECTURE FUND, 1930-38, \$9,500. Bequest of Mary Katrine Sedgwick in memory of husband. All copyrights and interest in copyrights and benefits from contracts with publishers for Department of Biology and Public Health.
- 429 W. T. SEDGWICK FUND, 1928, \$69,500. Received from Trustees of the Estate of W. T. Sedgwick under Agreement and Declaration of Trust following decease of Mary Katrine Sedgwick, for Department of Biology and Public Health.
- RICHARD B. SEWALL FUND, 1919, \$30,000. Bequest. Used for educational plant, 1924.
- 557 THOMAS SHERWIN FUND, 1871, \$5,000. Gift of Committee on Sherwin Memorial Fund for free scholarship to graduate of English High School.
- 493 SLOAN FUND, 1933-41, \$1,000. Annual gift of A. P. Sloan, Jr. for Fellowship in Automotive Engineering.
- ALFRED P. SLOAN, JR., 1929-41, \$165,000. Gift. For automotive laboratory.
- ELLEN VOSE SMITH FUND, 1930, \$25,000. Bequest. Used for new equipment.
- 558 HORACE T. SMITH FUND, 1930, \$32,988.76. Bequest. Income for scholarships. Preference to graduates of East Bridgewater (Mass.) and Bridgeport (Conn.) High Schools.
- 281 LILLIE C. SMITH FUND, 1937, \$4,800. Bequest to M. I. T. Women's Association for purposes of the Association.
- 283 WALTER B. SNOW, 1938. Reserve funds of Technology Christian Association. Deposited for investment purposes.
- 453 SOLAR ENERGY FUND, 1938, \$647,700. Gift of Dr. Godfrey L. Cabot. Principal to be held for fifty years — income to be used in development of the art of converting energy of the sun to use of man by mechanical, electrical or chemical means. After fifty years, fund becomes part of general unrestricted endowment of the Institute.
- 559 SONS AND DAUGHTERS OF NEW ENGLAND PURITAN COLONY SCHOLARSHIP FUND, 1931, \$600. Gift. Income for scholarship aid to a boy of New England ancestry.
- 632 ANNA SPOONER FUND, 1939-41, \$10,896.14. Bequest. Income to be used in assisting meritorious students.
- 155 ANDREW HASTINGS SPRING FUND, 1921, \$50,000. Bequest of Charlotte A. Spring in memory of nephew as a permanent fund. Income for general purposes.
- CHARLES A. STONE, 1912-24, \$15,000. Gift for land. 1928, \$25,023.59. Gift for dormitories.
- GALEN L. STONE, 1912, \$10,000. Gift for land. 1916, \$10,000. Gift for Mining Building.

- 156 GEORGE G. STONE, 1939, \$4,677.35. Bequest by will of Eliza A. Stone, as memorial to brother, a graduate in Mining Engineering in 1889. Income to be used in manner most useful to Institute as well as a most fitting memorial.
- 593 SAMUEL W. STRATTON PRIZE FUND, 1933, \$1,680. Contributed by friends of the late Dr. S. W. Stratton for competition prizes in the presentation of scientific papers.
- 633 SUMMER SURVEYING CAMP LOAN FUND, 1927, \$500. Gift of Lammot du Pont as a revolving loan fund to help students in Civil Engineering attend summer surveying camp.
- 454 HENRY N. SWEET, 1936, \$8,036.50. Bequest. For industrial research.
- 157 SETH K. SWEETSER FUND, 1915, \$25,000. Bequest as a permanent fund. Income for general purposes.
- 495 SUSAN H. SWETT FUND, 1888, \$10,000. Bequest. Income to support a graduate scholarship.
- 496 GERARD SWOPE FUND, 1926, \$2,500. Gift for fellowships in Electrical Engineering.
- 634 TEACHERS' FUND, 1899-1900. Gifts of \$50,000 each from Augustus Lowell and A. Lawrence Lowell to establish fund for use in case of retirement, disability or death of members of instructing staff.
- 635 TECHNOLOGY LOAN FUND, 1930-41, \$1,450,735.18. Contributed by eighteen alumni to provide loans for students.
- 285 TECHNOLOGY MATRONS TEAS FUND, 1916-22-31, \$8,500. Gifts of Mrs. F. Jewett Moore. Income for social activities of Technology Matrons.
- 456 TEXTILE RESEARCH FUND, 1937, \$3,065. Gift. For research.
- STURGIS H. THORNDIKE FUND, \$1928, \$15,000. Bequest. Appropriated for new dormitories, 1930.
- NATHANIEL THAYER, 1906, \$25,000. Gift. Used for educational plant.
- 315 NATHANIEL THAYER FUND, 1868, \$25,000. Gift. Income for professorship of Physics.
- 286 W. B. S. THOMAS FUND, 1935-37, \$2,000. Gift of parents of W. B. S. Thomas '29, the income only to be expended, one half for the benefit of the M. I. T. Crew and one half to other activities of the M. I. T. A. A.
- 317 ELIHU THOMSON FUND, 1933-37, \$18,000. Contributed toward fund for Professorship in Electrical Engineering.
- ELIHU THOMSON, 1912, \$25,000; 1924, \$5,000. Gift. Used for purchase of land.
- 497 FRANK HALL THORP FUND, 1932, \$10,000. Anonymous gift. Income for fellowship in Industrial Chemistry.
- 560 SAMUEL E. TINKHAM FUND, 1924, \$2,400. Gift of Boston Society of Civil Engineers. Income to assist worthy student in Civil Engineering.
- 349 JOHN HUME TOD FUND, 1913, \$2,500. Gift of Mrs. F. Jewett Moore. Income for purchase of books of a humanistic character for General Library.
- 562 F. B. TOUGH FUND, 1924, \$465. Gift to extend financial assistance to worthy students in mining or oil production.

- 431 EDMUND K. TURNER FUND, 1915-41, \$206,814. Bequest. Income, three-quarters for Department of Civil Engineering and one-quarter to be added annually to principal.
LUCIUS TUTTLE FUND, 1916, \$50,000. Bequest. Used for educational plant, 1918.
- 636 ALICE BROWN TYLER FUND, 1937-41, \$1,559.64. Gift of Prof. and Mrs. H. W. Tyler. Income to be used for benefit of women students at the Institute.
- 290 UNDERGRADUATE ACTIVITIES TRUST FUND, 1935, \$1,097.26. Established by 1916 Technique Board from which recognized student activities may borrow if deemed necessary and desirable, at a low rate.
- 292 UNDERGRADUATE PUBLICATIONS TRUST FUND, 1935, \$16,018. Deposited by Alumni Advisory Council on Publications for investment purposes only.
- 294 UNDERGRADUATE DUES RESERVE FUND, ATHLETICS, 1924-40. Transferred from Undergraduate Dues (current operating account) to secure investment income.
- 296 UNDERGRADUATE DUES RESERVE FUND, CONTINGENT, 1924-40. Transferred from Undergraduate Dues (current operating account) to secure investment income.
- 433 WILLIAM LYMAN UNDERWOOD FUND, 1932, \$16,252. Bequest. For benefit of Biological Department or otherwise for general purposes
- 563 SUSAN UPHAM FUND, 1892, \$1,000. Gift. Income to assist students deserving financial aid.
- 637 THOMAS UPHAM FUND, 1939, \$392,000. Bequest of Marcella B. Upham. Principal to be held as a permanent trust fund, the income to be used in assisting poor and deserving students or graduates of the Institute.
- 638 SAMSON R. URBINO FUND, 1927, \$1,000. Bequest. Income for students who need assistance, Germans preferred.
- 351 THEODORE N. VAIL FUND, 1925-42, \$68,800. Bequest. For benefit of Vail Library.
- 498 LUIS FRANCISCO VERGES FUND, 1924, \$10,000. Gift from Caroline A. Verges. Income for graduate students doing research work in sugar industry or if no such candidate, undergraduate student in Civil Engineering.
- 565 VERMONT SCHOLARSHIP FUND, 1924-37, \$25,000. Gift of Redfield Proctor, '02, in memory of Vermonters who, having received their education at the Institute, served as engineers in the armies of the Allies in the World War. Income to students preferably from Vermont. Mr. Proctor reserves right to designate recipients as long as he lives.
- 567 ANN WHITE VOSE FUND, 1896, \$60,000. Bequest. Income for free scholarships for young men of American origin.
HORACE W. WADLEIGH FUND, 1916-20, \$22,143.14. Bequest. Appropriated for new buildings, 1924.
- 568 ARTHUR M. WAITT FUND, 1925, \$9,700. Bequest. Income for deserving students in second, third and fourth year classes in Mechanical Engineering.

- 159 WILLIAM J. WALKER FUND, 1915-17, \$23,000. Bequest. Income for general purposes.
- 434 WILLIAM R. WARE FUND, 1939, \$15,000. Gift of Mr. and Mrs. William Emerson, the income to be at the disposal of the Dean of the Architectural School for extra budgetary purposes.
- 298 CHARLES D. WATERBURY, 1941, \$13,407.28. Bequest. For erection of a building as a memorial to above named at such time as M. I. T. shall decide.
- 161 HORACE HERBERT WATSON FUND, 1930, \$34,000. Bequest of Elizabeth Watson Cutter as a permanent fund. Income for general purposes.
- 569 JAMES WATT SCHOLARSHIP FUND, 1942, \$13,259.72. For scholarships in Mechanical Engineering.
EDWIN S. WEBSTER FUND, 1912-24, \$15,000. Gift. Used toward purchase of land.
- 197 FRANK G. WEBSTER FUND, 1931, \$25,000. Bequest. For general purposes.
- 570 HERMAN E. WEIHMILLER, 1942, \$1,000. Gift. For assistance to deserving students in aeronautical engineering with approval of Dr. E. P. Warner.
- 571 LOUIS WEISBEIN FUND, 1915, \$4,000. Bequest. Income for scholarship for student in Architectural Department, preference to be given to a Jewish boy.
- 163 ALBION B. K. WELCH FUND, 1871, \$5,000. Bequest as a permanent fund. Income for general purposes.
CHARLES G. WELD FUND, 1907, \$15,000. Gift. Used for educational plant, 1924.
- 165 EVERETT WESTCOTT FUND, 1935-38, \$171,394. Bequest as a permanent fund. Income for general purposes.
- 167 MARION WESTCOTT FUND, 1938, \$238,200. Bequest for endowment. Income for general purposes.
- 573 FRANCES ERVING WESTON FUND, 1912-31, \$5,000. Bequest. Income to aid a native-born American Protestant girl of Massachusetts.
- 574 SAMUEL MARTIN WESTON FUND, 1912-31, \$5,000. Bequest of Frances E. Weston in memory of husband. Income to aid a native-born American Protestant boy; preference to be given one from Roxbury.
ALEXANDER S. WHEELER FUND, 1907-16, \$30,000. Contributed by friends. Used for new dormitories, 1924.
GEORGE R. WHITE FUND, 1912, \$10,000. Gift. Used toward purchase of new site.
- 576 AMASA J. WHITING FUND, 1927, \$4,500. Bequest of Mary W. C. Whiting. Income as scholarship to deserving students; preference to students from the Town of Hingham, Massachusetts.
EDWARD WHITNEY FUND, 1910, \$37,171. Bequest as a memorial to him and his wife, Caroline. Principal and interest used (1930-38) for conduct of research in geophysics.

- 577 GRANGER WHITNEY FUND, 1942. For scholarship.
- 639 JONATHAN WHITNEY FUND, 1912, \$525,000. Bequest of Mrs. Francis B. Green. Income to assist poor and deserving young men and women in obtaining an education at M. I. T.
- 168 GEORGE WIGGLESWORTH FUND, 1931, \$25,000. Bequest. Ten (10) per cent of gross annual income to be added to principal, balance of income for general purposes of the Institute.
 GEORGE WIGGLESWORTH, 1917-24, \$65,000. Gift. Used for additional land purchase, 1924.
- 578 ELIZABETH BABCOCK WILLMANN FUND, 1935, \$5,065. Bequest. Income to be used toward tuition of young women students taking Chemistry courses.
 KENNETH F. WOOD FUND, 1926, \$25,000. Bequest. Appropriated for new dormitory, 1930.
- 169 EDWIN A. WYETH FUND, 1913-35, \$269,665. Balance of Trust Fund held by M. I. T. since 1913 for itself and five other beneficiary institutions subject to annuity. Distributed January 1935. Fund separately invested and still subject to annuity. Balance of net income available for general purposes of the Institute.
- 640 MORRILL WYMAN FUND, 1915-16, \$66,000. Bequest. Income to aid deserving and promising students upon understanding that if in after life the person receiving aid shall find it possible, he shall reimburse said fund — not a legal obligation.
 WRIGHT MEMORIAL WIND TUNNEL, 1937-41, \$95,795. Contributed by friends toward construction of new wind tunnel.

LIST OF
PERIODICAL PUBLICATIONS, BOOKS AND REVIEWS
BY MEMBERS OF THE STAFF

Persons desiring reprints of articles should apply to the Department concerned.

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- DRAPER, CHARLES S. Vibration Measurements Supply Essential Engineering Data. *Aero Digest* 39, pp. 136-142+, September 1941.
- DRAPER, CHARLES S. Instrument Instruction at M. I. T. *Instruments* 14, p. 278, October 1941.
- KEILY, DELBAR P., LT. N. E. JOHNSON, and LT. L. A. KILEY. An Instrument for Computing Altitudes in Upper Air Soundings. *Am. Meteor. Soc. Bull.* 23, pp. 191-195, May 1942.
- MCBRIDE, JAMES W. Diagrams for Calculation of Airfoil Lattices. *N.A.C.A. Tech. Mem.* 1022, July 1942. (Translation of an article by Albert Betz in *Ingenieur-Archiv* 2, September 1931.)
- MARKHAM, JOHN R. The M.I.T.-Wright Brothers Wind Tunnel and Its Operating Equipment. *S. A. E. J.* 49, pp. 380-388, September 1941.
- ROGOWSKI, AUGUSTUS R., and C. FAYETTE TAYLOR. Comparative Performance of Alcohol-Gasoline Blends in a Gasoline Engine. *J. Aero. Sci.* 8, pp. 384-392, August 1941.
- VON MISES, RICHARD. On the Correct Use of Bayes' Formula. *Annals Math. Statistics* 13, pp. 156-165, June 1942.

DEPARTMENT OF ARCHITECTURE

- ADAMS, FREDERICK J., Consultant, and HERBERT W. STEVENS, Associate. Planning Problems in Springfield, Vermont. Report on town planning project to the Springfield Manufacturers Association. Cambridge, Mass., September 1941.
- CHAMBERLAIN, SAMUEL. The Best Cellars. (Monthly critical articles on wine.) *Gourmet Magazine*, February 1942 through June 1942.
- CHAMBERLAIN, SAMUEL. Fair is Our Land. Hastings House, 1942.

DEPARTMENT OF BIOLOGY AND PUBLIC HEALTH

- BEAR, RICHARD S. Long X-Ray Diffraction Spacings of Collagen. *Am. Chem. Soc. J.* 64, p. 727, March 1942.
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- BLAKE, CHARLES H. Two Chalks are Compared. *Horticulture* 2, New England Section, p. 2, February 1942.

- BLAKE, CHARLES H. Name That Animal. (Review of book with that title, by Ernest C. Driver.) *Mass. Audubon Soc. Bull.* 26, p. 136, June 1942.
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- GOULD, BERNARD S., and H. SHWACHMAN. Bone and Tissue Phosphatase in Experimental Scurvy and the Source of Serum Phosphatase. *Am. J. Physiol.* 135, p. 485, January 1942.
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- HALL, CECIL E., M. A. JAKUS, and F. O. SCHMITT. Electron Microscope Observations of Collagen. *Am. Chem. Soc. J.* 64, p. 1234, May 1942.
- HARRIS, ROBERT S. Nutrition in War. *N. E. J. Med.* 225, pp. 575-578. October 9, 1941.
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- HORWOOD, MURRAY P., and P. J. PESARE. The Use of Chlorine Compounds for the Disinfection of Beverage Glasses. *The Sanitarian* 4, pp. 99-103, December 1941.
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- HORWOOD, MURRAY P. Can a Community Health Education Program be Appraised Objectively? *Mass. Health J.* 23, pp. 11-15, January-March 1942.
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AND ENGINEERING ADMINISTRATION*

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