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THE ROCKEFELLER INSTITUTE

Quarterly

VOLUME 2 NUMBER 3

FALL 1958

A HALF-CENTURY OF SCIENTIFIC PUBLICATION AT THE INSTITUTE

IF DISCOVERY is the joy of research, publication is one of its responsibilities. That The Rockefeller Institute has always been keenly aware of this responsibility is shown by the fact that the creation of a scientific journal was a primary concern of its Founders in 1902. Nearly a quarter of a million pages of scientific papers, largely from sources other than the Institute, have been issued by the Institute since it took over publication of *The Journal of Experimental Medicine* in 1905. For more than 10 years they appeared in that *Journal*, but later in *The Journal of General Physiology* as well; and of late in the newly-founded *Journal of Biophysical and Biochemical Cytology*. About 30,000 pages appeared in *The Journal of Biological Chemistry* during the years it was published by the Institute, 1914-1925.

The history of the Institute's publishing program is part of the history of the life sciences in this country during the 20th century. We wish to sketch it briefly here, beginning with *The Journal of Experimental Medicine*, founded in 1896 by Dr. William H. Welch, pioneer in medical education and first President of the Institute's Board of Scientific Directors. This was before the Institute itself was founded—a time when scientific journals, particularly in the life sciences and medicine, were almost non-existent in this country.

Dr. Welch, with the encouragement and cooperation of President Gilman of The Johns Hopkins University, had established The Johns Hopkins Medical School, and in his Commencement Address in 1893

announcing that the Medical School would be opened in the fall, Welch said: "The Medical School should be a place where medicine is not only taught but also studied. It should do its part to advance medical science and art by encouraging original work, and by selecting as its teachers those who have the training and capacity for such work." Almost at once the need for a means of publishing original contributions in the medical sciences arose, and Welch himself launched *The Journal of Experimental Medicine* with financial support provided by The Johns Hopkins Uni-

versity. In his introduction to the first issue Dr. Welch, its sole editor, wrote: "In consequence of the absence of such a journal as is here contemplated there has been a lack of the close contact and free interchange of ideas both between our own workers and between American and foreign investigators, which are fruitful in stimulating scientific research and in securing both here and abroad due consideration of work done in this country."

Dr. Simon Flexner, who succeeded Welch in 1902 as editor of *The Journal of Experimental Medicine*, tells us in his admirable biography "William Henry Welch and the Heroic Age of American Medicine" (New York: The Viking Press, 1941) that the new venture "was itself a
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ANNOUNCING

THE ROCKEFELLER INSTITUTE PRESS

We are pleased to announce the formation of The Rockefeller Institute Press under which our long-established publishing activities will be carried on.

We are also able to make the significant further announcement that in association with the Oxford University Press, The Rockefeller Institute Press will publish books and monographs on science and related subjects by members of the Institute faculty and by other scholars.

The Rockefeller Institute Press will be under the direction of Mr. Charles I. Campbell, Administrative Associate for Information Services. Production of the Institute's journals will continue to be

managed by Miss Florence M. Stewart as head of the Journals Department.

It is appropriate that The Rockefeller Institute, having become a Graduate University of science in 1954, should now follow the example of its sister institutions throughout the world in establishing a university press.

Among the objectives of the Press will be publication of carefully selected scientific books and journals of highest quality at costs so modest that individuals may purchase them for their personal libraries, thus filling a great need in an era of high scientific productivity and ever mounting costs of publication.

radical experiment; it was generally believed that America did not produce enough scientific work to fill its pages." Later, however, Dr. Flexner continued, "the *Journal* succeeded beyond all expectations, since American laboratories proved able to produce far more articles worthy of its pages than anyone has foreseen." Indeed in early days this *embarras de richesse* had nearly brought on the downfall of the new *Journal*. Welch, as editor, was a generous perfectionist, often re-writing manuscripts himself that he considered worthy but in unsuitable form. Furthermore, he introduced the custom of checking bibliographic references and citing them in a consistent style, in itself a burden of editorial revision. Temporary relief came in 1898 when the *American Journal of Physiology* sponsored by the American Physiological Society, began publication, but even so the pressure mounted faster than Welch could deal with it. His editorial duties, which he could not bring himself to share with any of the dozen distinguished associate editors named on the title page of the *Journal*, began to interfere with his teaching and holidays. An avid and devoted follower of the Baltimore "Orioles," Welch even took to correcting galley-proofs at the baseball games!

AN EDITORIAL BREAKDOWN

Burdened beyond endurance by the editorship, Welch, in 1901, actually offered to give "his" *Journal* away. He had heard that the Boston Medical Society and Harvard Medical School were planning the *Journal of Medical Research*, and he proposed that they take over *The Journal of Experimental Medicine*. They were delighted but President Gilman and The Johns Hopkins—which had invested heavily in the *Journal*—would not have it so. Welch was persuaded to continue but with an assistant. He knew the attempt was hopeless, and in March, 1902, with manuscripts flowing in at an increasing rate, he abruptly ceased to publish the *Journal*. Flexner, in recalling this period, says with understanding and admiration: "Welch's final breakdown as an editor is not to be wondered at, considering the way in which he executed his office. So long as the *Journal* appeared, he never relaxed his severe measures of editorial policy. Fur-

thermore, his habit of leaving things to the last minute and then working under heavy pressure did not accord well with bringing out successive numbers of a regular periodical. All these labors no longer seemed worthwhile. It was typical of Welch that during the early days of an important enterprise he was very active in it and even willing to do chores; but once the venture was well-launched, he felt it was time for others to take over. The wonder of it is that he published the *Journal* for five long years with adequate punctuality."

NEW MANAGEMENT

As it turned out, Flexner himself was to take over Welch's well-launched venture. In the fall of 1902, only a few months after The Rockefeller Institute was established, Welch persuaded its Board of Scientific Directors that the Institute should acquire and publish the *Journal*. Ira Remsen, the new President of The Johns Hopkins University, who had inherited Gilman's embarrassment over the lapse in publication, eagerly gave his consent, and Dr. Flexner and Dr. Eugene Opie, former Member and now Affiliate of the Institute, became editors of the *Journal*. Late in 1903 the formalities of the transfer were finally completed but such was the character of Welch who doubtless had an inner reluctance to give up what he had so well begun that even late in 1904 Flexner and Opie had received none of the accumulated manuscripts. At last Dr. Flexner visited Dr. Welch in Baltimore, wisely taking with him an empty suitcase, and he persuaded Dr. Welch to let him carry away all the manuscripts. It is doubtful whether anyone other than Flexner himself, Welch's beloved pupil, could have succeeded in this curious mission.

In February, 1905, Flexner and Opie got out the final numbers of Volume 6 of the *Journal*, which had been held up two years; numbers 4, 5, and 6 appearing in a single issue composed, as Dr. Flexner put it, of "the most important manuscripts rescued from Welch's study." This was the last issue to appear with Welch's name on the *Journal* cover, and it contained 40 papers, all but two of which were by his Baltimore pupils. Ever since that time the *Journal* has appeared regularly and has continued to be one of the world's

most respected medical research journals.

For fifteen years Simon Flexner was chief editor, assisted by Opie until 1910 and by Benjamin D. Terry for the next two years. He carried on alone thereafter until 1921 when Peyton Rous became editor with him.

Dr. Flexner set high standards for the *Journal* and even after he had ceased his active duties as editor his vital interest and pride in it continued. Throughout the years no detail escaped his watchful eye. In 1932, for example, he wrote the copy editor: "Note an error on page 692 of the last number. . . . Should not the 'is' be 'are'—two subjects to the verb?" Dr. Rous wrote of Dr. Flexner that "his solicitude for the *Journal* continued after he had left off all other scientific activities. It had been a labor, and it remained a pride."

From the first the *Journal* burgeoned. As early as 1908 we see from Flexner's correspondence with Opie a concern that more acceptable manuscripts were coming in than they could publish. One reason for this was of course that *The Journal of Experimental Medicine* stood alone. Dr. Rous, writing of the scope of the *Journal* in the first issue of the 50th year of publication by the Institute (July, 1946), said: "All of American scientific medicine was supposed to lie within its province, and its early contents were most various; for only later did each of the experimental branches obtain its own medium of publication. Throughout the years Dr. Flexner kept the *Journal* unspecialized." In the fall of 1910, as more and more material came to hand, it was decided to issue the *Journal* as a monthly in two volumes of six issues each per year, and so it has remained.

THE MONOGRAPHS

At the same time still another problem arose. The editors had already given up any hope of publishing every acceptable paper offered to them, printing instead only the best in their opinion. So great was the need for means to publish worthwhile scientific material that manuscripts of monograph length began to be put in Flexner's hands. To meet this need, the Institute started in 1910 to publish its monograph series. Flexner led the way with a monograph from his own laboratory ("Experimental Studies on Tumor," Simon Flexner, J. W. Jobling, and Maud L.

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The Trustees

DAVID ROCKEFELLER

DAVID ROCKEFELLER, Chairman of the Board of Trustees of The Rockefeller Institute, is also Vice-Chairman of the Board and a Director of the Chase Manhattan Bank. As with all of the members of his family, Mr. Rockefeller has always fully understood the responsibility which great wealth has placed upon him. Business and finance are high among his varied interests; international relations and the City of New York claim a large part of his attention; but David Rockefeller is also a scholar and he finds himself at home in the world of research and education.

That Mr. Rockefeller received a Ph.D. degree in economics at the University of Chicago after doing post-graduate work at Harvard and the London School of Economics is rather well-known. But only a few specialists know that David Rockefeller has a more than passing interest in entomology. As a small boy David began to collect beetles, and today his collection, numbering nearly 50,000 specimens, has been described as one of the finest private collections in the United States.

There is not a trace of the superficial in him; he insists upon understanding things from the ground up. After receiving his Ph.D. in economics (writing a formidable thesis on "Unused Resources and Economic Waste") David Rockefeller became secretary to Mayor LaGuardia, to learn first-hand the realities of governing the city he loves. He emerged from World War II as an army captain with the Legion of Merit and the French Legion of Honor, but he had enlisted as a private in 1942. Similarly, he went to work at one of a number of desks in the Foreign Department of the Chase National Bank (now Chase Manhattan) as Assistant Manager, the most junior of executive positions. It was four years later that he graduated to a private office as Vice-President with supervision of the bank's business in Latin America. After another eight years, having held offices of increasing responsibility, Mr. Rockefeller became Vice-Chairman and a Director of the Chase Manhattan Bank, the post he holds today. This serious-

ness of purpose was acknowledged in the citation of an honorary LL.D. awarded him by Columbia University, which described him as "relentlessly dedicated."

Mr. Rockefeller's interests in international affairs extend far beyond business and economics. For eleven years he has been a Trustee and Chairman of the Executive Committee of New York International House, one of three cultural centers and residences for foreign students established by the Rockefellers in this country. He is also Director and Vice-President of the Council on Foreign Relations, a Trustee of the Carnegie Endowment for International Peace, and Director of the American International Association for Economic and Social Development.

He has been deeply involved in two ambitious programs for the redevelopment of New York City. One of these, Morningside Heights, Inc., of which he is Chairman, set out to reverse the deterioration in the residential area around the great cultural

development where ten acres of slums were located aroused some controversy, but David Rockefeller appeared in person at a public hearing of the City Board of Estimates to defend the plan, and the development is now nearly completed. More recently he became Chairman of the Downtown Lower Manhattan Association, Inc., started with the cooperation of the New York State Chamber of Commerce to plan the redevelopment of housing, shopping and traffic facilities in lower Manhattan.

David Rockefeller became a Trustee of the Institute in 1940, and after ten years of studying its nature and potential role he became its President in 1950, succeeding his father, Mr. John D. Rockefeller, Jr. He took a lively personal interest in the development of plans for revitalizing the Institute and reorganizing its management. Under the new structure, which took effect in 1953, the Board of Trustees and the Board of Scientific Directors were combined into a single Board with David



center in Morningside Heights in New York that includes Columbia University, Barnard College, Juilliard School of Music, Union Theological Seminary, Riverside Church and International House. The project to construct a \$15 million housing

Rockefeller as Chairman, and Dr. Bronk became President of the Institute.

Other of David Rockefeller's scholarly associations include membership on the Board of Overseers of Harvard University, where he received his B.S. in history and

literature. He is also a Trustee of the University of Chicago. Mr. Rockefeller is likewise a Trustee of the Museum of Modern Art, which his mother has helped to establish. His interest in modern American painting is reflected in the paintings he helped to select which we see in Abby Aldrich Rockefeller Hall at the Institute.

Mr. Rockefeller's interests in entomology have led to associations with the American Museum of Natural History. He has sponsored expeditions to the southwest and Mexico. Through these expeditions as well as his purchase of significant collections, Mr. Rockefeller has provided New

York with rich resources of material for entomological research. It is not surprising that *Acmaeodera rockefelleri* and *Cicindela rockefelleri* are the names of two among many new species of beetles that have been discovered in the past few years. Recently his assistance has enabled the American Museum of Natural History to establish the Southwestern Research Station in a remote part of Arizona.

Mr. Rockefeller married Margaret McGrath in 1940, the year he received his Ph.D. at Chicago, and they now have six children. Among his hobbies sailing ranks high and his children are good sailors as well, entering most of the races at Seal Harbor in Maine where they vacation.

POPSY WELCH EN ROUTE TO THE MING TOMBS



THE ROTUND FIGURE in a jaunty fedora astride a Chinese pony is Dr. William Henry Welch *en route* to the Ming Tombs near Peking in 1915. The story behind this little bronze in the Library of Welch Hall adds to its charm and discloses another facet of Dr. Welch, the founder of American scientific medicine.

Dr. Welch, then President of the Board of Scientific Directors of the Institute, and Dr. Simon Flexner went to China as the medical members of a commission to examine progress in establishing the Peking Union Medical College there under auspices of The Rockefeller Foundation. Like so many men of scientific genius Dr. Welch was interested in art and architecture, and he took every occasion to explore the Imperial city. Finally, with Dr. and Mrs. Flexner and Caroline Buttrick, wife of Wallace Buttrick, Director of the Commission, Welch set forth on a two-day expedition north to Nankou to see the Great Wall and the Ming Tombs.

Dr. Welch's pony objected greatly to him, and he returned the compliment, writing in his diary of his "pony with a sharp saddle. An uncomfortable and fatiguing also chafing ride on the backs of these most uncomfortable beasts over a rough road and paths for seven hours." But he found it worthwhile, for he went on: "Still the sight is not to be missed. The magnificent five-span pailow—a beautifully sculptured monument—some 50 feet high and 75 broad, makes a truly splendid entrance. The distance of the Yung-loh tomb from this gateway is about 3 miles. The holy way is lined on each side with elephants and fabulous animals, horses, warriors, sages, priests, a most remarkable sight. Our two days at the Great Wall have been full of wonder and delight."

ALBERT LASKER AWARD

PEYTON ROUS, Member Emeritus of The Rockefeller Institute, has been honored by selection as one of the 1958 recipients of the Albert Lasker Awards presented by the American Public Health Association. In making this selection, the Awards Committee noted that Dr. Rous's "original demonstration of the cell-free transmission of fowl neoplasms was complete and at the same time revolutionary... (though) its significance for an understanding of cancer has been fully appreciated only recently." The citation also stressed the early contributions of Dr. Rous and his colleagues to an understanding of the mechanisms of blood generation and destruction. It noted that his findings made possible the first blood banks for preserving and storing this life fluid. His more recent work on the carcinogenicity of hydrocarbons, virus-induction of mammalian cancer and the concurrent action of carcinogens and viruses to induce cancer was mentioned as well.

Last year Richard E. Shope, Member and Professor of the Institute, was a recipient of the Award. Others at the Institute who have been honored in previous years are René J. Dubos, Member and Professor, and Vincent du Vigneaud, Trustee.

At one point as the expedition paused to admire a monument, Dr. Flexner snapped a photograph of Popsy Welch on his pony. Evidently Flexner was amused by the result, for he had the statuette caricature shown here done by a friend, Miss Anna M. Hyatt. A few bronze replicas were cast, and one of them was presented by Dr. Flexner to Mr. John D. Rockefeller, Jr. in 1919.

It is Mr. Rockefeller's copy that we now see in the Library of Welch Hall. Miss Anna M. Hyatt, who later became Mrs. Archer M. Huntington of Bethel, Connecticut, has won honors too numerous to mention. She is known particularly for her small bronzes, of which more than 200 are located in museums throughout the world. Miss Hyatt has done larger works, some of which we have seen. The equestrian statue of Joan of Arc on Riverside Drive in New York is her work, and she did the statues in the plaza of the Hispanic Society.

DR. ERNEST SMILLIE'S RETIREMENT FETED

DR. AND MRS. ERNEST W. SMILLIE were guests of honor at a party on September 25 to mark the occasion of his retirement after 42 years of service at The Rockefeller Institute. More than two hundred of Dr. Smillie's friends and associates were present and another 100 sent greetings and contributed to a fund with which the Smillies are to purchase a television set of their choice. President Bronk paid tribute to Dr. Smillie's long and devoted service to the Institute and to science and presented him with a check for over \$300 and a scroll bearing the names of the friends who joined in giving it to him.

Through most of his years with the Institute, Dr. Smillie was at Princeton with the Department of Plant Pathology. There he was responsible for operating the farm, keeping up the buildings and grounds, and providing for the needs of the investigators in the laboratories. In particular he provided veterinary care and maintained small colonies of the larger animals used in the work at Princeton by Dr. Theobald Smith and his colleagues.

When the Princeton Laboratories were closed in 1951 and the work there integrated with the New York laboratories, Dr. Smillie came to New York as Assistant Business Manager, a position he held until his retirement. When he left Princeton Dr. Smillie was honored by a dinner at which he was presented with a scroll signed

by five successive Governors of New Jersey testifying to his contributions to the State's Public Health Program.

Dr. and Mrs. Smillie will retire to their farm in Newfane, Vermont, where he and his brother, whose farm is adjacent, will raise sheep. "Not so many that they will be a burden," Dr. Smillie says. "But enough to keep life interesting."

DR. BRONK HONORED

PRESIDENT DETLEV W. BRONK was honored recently by being appointed a member of the new nine-man National Aeronautics and Space Council of which President Eisenhower is Chairman. The newly-created agency, which ranks with the National Security Council, will be responsible for coordinating all activities of the Federal government in matters concerning space and aeronautics.

This appointment marks for Dr. Bronk the culmination of a 40-year career in aeronautics which began in 1918 when he interrupted his work as a student of engineering at Swarthmore to become an ensign in the Navy and a flier in World War I. In the Second World War Dr. Bronk again responded to his country's need as Coordinator of Research in the Office of the Air Surgeon with responsibility for developing an effective national program in aviation medicine and psychology. During the war he was also Chief of the Division of Aviation Medicine for the Office of Scientific Research and Development.

After the war Dr. Bronk's love for the air led him to accept an appointment as a member of the National Advisory Committee for Aeronautics. He remained a member of that agency until it was dissolved this year.

Other members of the Aeronautics and Space Council are the Secretary of State, the Secretary of Defense, and the Chairman of the U.S. Atomic Energy Commission, as well as Lt. General James H. Doolittle (Ret.), who was Chairman of the NACA; William A. M. Burden, a New York businessman, formerly Assistant Secretary of Commerce for Air; Dr. Alan T. Waterman, Director of the National Science Foundation; and Dr. T. Keith Glennan, head of the new National Aeronautics and Space Administration and President of Case Institute of Technology.

KENNETH C. BROWNELL

member of the Board of Trustees since 1954, died on August 4, 1958. Mr. Brownell, who was Chairman of the Board of the American Smelting and Refining Company, was also Vice-President and a Trustee of the John Simon Guggenheim Memorial Foundation. A graduate of Yale University, he was a member of Phi Beta Kappa and The Society of the Sigma Xi.

Mr. Brownell had been associated with the American Smelting and Refining Company since 1927, becoming Vice-President in 1936, Executive Vice-President in 1947, President in 1949 and finally, last year, Chairman and chief executive officer of the company. He was born in Everett, Washington, in 1903, but had been a resident of Greenwich, Connecticut, for many years. He was associated with many local activities there, as Corporate Member in the Greenwich Hospital Association, Governor of the Field Club and Governor of the Round Hill Club, among others. Mr. Brownell was an ardent and lifelong amateur astronomer, one of his unrealized ambitions being to construct his own telescope.

Mr. Brownell is survived by his wife, Elizabeth; his sons Kenneth and Johnathan; and a daughter, Mrs. Ann Thomas.

FIFTY YEARS AGO AT THE ROCKEFELLER INSTITUTE

THE FALL OF 1908 was a quieter time than today, 50 years later. Nothing about the Institute seems to have appeared in the newspapers and the minutes of the board disclose nothing but routine affairs. From the laboratories, however, there came a report of pioneering research which is still quoted in the textbooks of pathology. Eugene L. Opie, who had been breaking new ground by his study of enzymes in blood cells, sent to the September number of the *Journal of Experimental Medicine* his report on enzymes in tuberculous tissue. With his assistant, Miss Bertha I. Barker,

he had demonstrated for the first time the presence of a protein-digesting enzyme in the epithelioid cells which form the chief element of the tubercle. This enzyme exhibits its greatest activity when caseation of the tubercle is beginning, and is almost gone when caseation is completed. His discovery stands today uncontradicted.

Dr. Opie, one of the original members of The Rockefeller Institute, left in 1910 to become Professor of Pathology at Washington University, St. Louis, but he returned in 1941 and is active in research as an Affiliate today.

INTERNATIONAL SYMPOSIUM ON NERVE AND MUSCLE

INVESTIGATIONS of nerve impulse conduction and muscle contraction have reached molecular levels. Refinement of methods for recording biophysical manifestations of cellular function as well as new developments in biochemistry, in exploring ultrastructure, and in analysis of molecular forces of proteins and enzymes in relation to function have resulted in significant progress in these fields. We are approaching the ultimate goal of understanding these life processes in terms of physics and chemistry.

To give biophysicists and biochemists directly concerned with nerve and muscle function an opportunity to discuss their problems with authorities in physical chemistry and in protein and enzyme chemistry, an international Symposium on Elementary Processes of Nerve Conduction and Muscle Contraction was held at the Institute September 25-30, 1958. The Symposium was jointly sponsored by The Rockefeller Institute and Columbia University, with financial support from the National Science Foundation.

The four-day program featured general discussions with a minimum of formal presentations—enough simply to formulate problems and to stimulate vigorous discussions. Chairmen of the first two sessions on "Elementary Processes in Nerve Conduction" were President Bronk and Lord Adrian of Cambridge University; John G. Kirkwood of Yale University and Henry Eyring of the University of Utah led the second and third discussions, devoted to "Proteins, the Basis of Molecular Biology." John T. Edsall of Harvard University and Sir Hans A. Krebs of Oxford University were chairmen of the fifth and sixth sessions on "Elementary Processes in Muscular Contraction." After a seventh session on the Neuromuscular Junction led by Dr. Robert Staempfli of the University of the Saar, an afternoon round-table discussion under chairmanship of Peter Debye summarized the discussions of the entire symposium.

Dr. David Nachmansohn, Professor of Biochemistry at Columbia University and President Bronk at the Institute inspired the organization of the Symposium. Other

members of the organizing committee were Professor David Rittenberg and Associate Professor Irwin B. Wilson of Columbia University and Professor Frank Brink, Jr., and Professor H. Keffer Hartline of The Rockefeller Institute.

To assure the informality and intimacy of exchange of ideas which the quiet and agreeable facilities of Abby Aldrich Rockefeller Hall and Caspary Auditorium make possible, the participants in the symposium were limited to a very small number. Only seventy scientists were invited, 17 of whom were from abroad. They had an opportunity to meet other colleagues, however, at two evening dinners—as guests of Columbia University at the Men's Faculty Club and as guests of The Rockefeller Institute at a reception and banquet held in Welch Hall. Entertainment at Columbia was provided by Professor and Mrs. Hans Clarke who, with Professor Chain, one of the Symposium participants, at the piano, played a Mozart trio. Professor and Mrs. Heidelberger, together with Professor Chain formed another trio, playing a work by Schuman. Following the reception and banquet at The Rockefeller Institute the participants and guests retired to Caspary Auditorium where they enjoyed a film on the life of seals produced by Walt Disney in cooperation with the U. S. Department of the Interior. The well known New York musicians, Harvey Shapiro, cellist, and Leonid Hambro, pianist, played two sonatas by Beethoven and Brahms.

CITY HEALTH RESEARCH COUNCIL INAUGURATED

THE ROCKEFELLER INSTITUTE was the scene of the announcement by the City of New York that a Health Research Program has been established under the Department of Health.

The Inaugural Exercises of the Program were held in Caspary Auditorium on September 16, 1958, presided over by Dr. Leona Baumgartner, Commissioner of Health of the City of New York. Follow-

ing the ceremonies, the newly appointed Health Research Council, which will guide the program, held its first meeting.

President Bronk expressed a welcome on behalf of The Rockefeller Institute and spoke briefly as President of the National Academy of Sciences on the significance of the new undertaking. He noted that medicine in the past was concerned with curing the diseases of man and helping him to adapt to the natural environment. But medicine of the future, he said, "faces the new challenge of designing and building our environment so that it will be suitable for man and more adequate to his life." Such an undertaking, he added, is peculiarly appropriate in the City of New York where man lives in an environment almost wholly of his own making.

Mayor Wagner, in making formal announcement of the Health Research Program, cited the evidence that had led his administration to the conviction that basic research on problems of health had "paid off." Accordingly he pledged his administration to the goal of an expenditure of \$8 million per year for health research, e.g. one dollar per person in the City of New York.

A BRITISH ANALOGUE

Following the Mayor's address, Sir Harold Himsworth, Secretary of the British Medical Research Council, gave a thoughtful and detailed description of the activities of his organization that are analogous to the activities foreseen for the New York City Health Research Program, though on a larger scale and in a different political and cultural context.

Dr. Walsh McDermott, Professor of Public Health and Preventive Medicine at Cornell University Medical College and Chairman of the Health Research Council, described the Council's aims in broad outline. Among the members of the Council are President Bronk, Dr. Vincent du Vigneaud, Professor of Biochemistry at Cornell University Medical College, and Dr. Robert F. Loeb, Professor of Medicine and Director of Medical Service at Presbyterian Hospital. Dr. du Vigneaud and Dr. Loeb are both Trustees of the Institute. Other members of the Institute's faculty who are members of the Health Research Council are Professor Frank L. Horsfall, Jr., Vice President for Clinical Studies at the Institute, and Professor René J. Dubos.

menten). A few months later the second monograph appeared, consisting of a paper that had been submitted to the *Journal* by W. T. Howard and Oscar T. Schultz, "Studies in the Biology of Tumor Cells." Flexner had been troubled for at least a year and a half about how to publish this significant paper.

In 1921 Peyton Rous, now Member Emeritus, was appointed co-editor, and Dr. Flexner relinquished to him practically the whole burden of editorship. Dr. Rous brought a new enthusiasm in maintaining high standards of scientific excellence as well as typographic perfection. He has been senior editor primarily responsible for the *Journal* during most of the last 37 years. With characteristic effacement, however, Dr. Rous carried Dr. Flexner's name on the *Journal* from his retirement in 1935 until his death in 1946. Dr. O. H. Robertson paid tribute to Dr. Rous' work as editor in an address when presenting to him the Kober Medal of the Association of American Physicians in 1952. "Not least among Dr. Rous' contributions," Dr. Robertson said, "is his editorship of *The Journal of Experimental Medicine*... Ever since its inception this periodical has played an important part in the development of medical science in America. That he gave much time and thought to his editorial duties many of us whose returned manuscripts were covered with innumerable notes in his fine but ultimately decipherable handwriting can testify."

EDITORIAL TRADITION

Herbert Gasser, now Director Emeritus of the Institute, became co-editor in 1935 and served as co-editor until his retirement in 1953. René Dubos became co-editor in 1946, Vincent Dole in 1953, and Frank Horsfall in 1958. These three, all Members and Professors of the Institute, together with Peyton Rous, constitute the editorial board today. The interest and deep concern for *The Journal of Experimental Medicine* shown by Dr. Flexner and Dr. Rous and the high standards they set have been shared by their colleagues on the editorial board as well as by the editors of other Journals published at the Institute.

As a result of high standards and painstaking care *The Journal of Experimental*

Medicine has always been highly regarded, but it is not easy to find objective criteria to judge the true worth of a journal. Dr. Albert E. Casey, a pathologist at the Institute from 1927 to 1934, became interested in the relative influence of various journals on medical progress. In 1942 he published in *The Bulletin of the Medical Library Association* the results of a study of the question. Dr. Casey determined the frequency of citation in 75 leading journals of the medical literature of the United States and Britain during the year 1934. He found *The Journal of Experimental Medicine* among the six most frequently cited and concluded that it was therefore among the journals exerting the most influence on medical progress in the United States and Great Britain. This is statistical evidence to support Dr. Robertson's praise of the *Journal* quoted earlier.

THE STUDIES

An account of the early period of the Institute's publishing program would be incomplete without reference to the "Studies from The Rockefeller Institute," now in Volume 156, begun by Welch in 1904. In a search for young men capable of undertaking research, grants were made to workers in other laboratories before those of the Institute were built. Dr. Rous, incidentally, was one of the last recipients of these grants. Welch wisely believed that scientific reports resulting from them should be presented to his Board of Scientific Directors though it was permitted then, as now, that the reports be published anywhere. Reprints of the page size of *The Journal of Experimental Medicine* were prepared at the expense of the Institute and bound into volumes as "Studies from The Rockefeller Institute." About 90,000 pages of scientific papers have been reprinted from the most varied publications, representing the scientific work of The Rockefeller Institute. Through most of this time only reports of original research carried on at the Institute or under its auspices were included in the *Studies*. Recently the criteria have been changed to include in the *Studies* contributions to scholarship published by members of the Faculty and the Graduate Fellows while they are with the Institute regardless of whether original scientific results are reported.

For a brief period of eleven years, The Rockefeller Institute was publisher of another great American scientific journal, *The Journal of Biological Chemistry*. Dr. Christian A. Herter, first treasurer of The Rockefeller Institute and member of the Board of Scientific Directors for many years, founded *The Journal of Biological Chemistry* in 1905. Stability of publication was one of the aims of the Corporation established by Herter to manage the *Journal*, and in 1914, Dr. Simon Flexner, President of the Board of Directors of the *Journal*, concluded that the *Journal* would be more soundly managed if it were published by a scientific institution. It was only natural that the Institute should have been selected, and from 1914 until 1925 *The Journal of Biological Chemistry* bore the imprint: "Published by The Rockefeller Institute for Medical Research for The Journal of Biological Chemistry, Inc." During that period, Dr. D. D. Van Slyke, now Member Emeritus of the Institute, functioned as chief editor. By 1925 *The Journal of Biological Chemistry* was soundly established and The Rockefeller Institute ceased to function as its publisher.

The school of scientific medicine that arose in this country as a result of the energies and character of William Welch gave rise to the need for *The Journal of Experimental Medicine*; a decade or two later a new school of experimental biology was pioneered by Jacques Loeb at the Institute, bringing a need for another journal. Loeb's papers on physico-chemical studies of cellular biology were not truly at home in any of the available places for publication. In 1918, therefore, he and his devoted collaborator W. J. V. Osterhout, now Member Emeritus at the Institute, with the approval and support of The Rockefeller Institute, founded *The Journal of General Physiology*. In some respects the recent Symposium on Elementary Processes in Nerve and Muscle described elsewhere in this issue represents the culmination of a trend in physiology which was revolutionary when Loeb embarked upon it at the turn of the century. Though he was a physician, his deepest interests at first were metaphysical: "Is there such a thing as free will?" and, "What are the instincts?" But as a student of philosophy in Berlin Loeb soon developed a great distaste for metaphysics and it became his

(continued on next page)

life-long aim to reduce mystery to mechanism. As Osterhout has said of him "his courage was often justified by startling success." From philosophy and psychology he turned to the physiology of the brain and in his quest for mechanism began to bring to his work the ideas of the physical chemists of his time. Among his associates in science were Arrhenius, de Vries, Ostwald, and the physicists Boltzmann and Rutherford.

Jacques Loeb's passion for mechanism led him from brain physiology to the discovery of artificial parthenogenesis, and finally to the simplification of our ideas regarding colloid behavior. But as Osterhout says in his beautiful biographical sketch of Loeb, "it was a transition as natural as the progress of Pasteur from crystals to microbes." He saw the need for a *Journal of General Physiology*. The first sentence in the first paper of the new *Journal* "On the dynamics of photosynthesis" (by Osterhout and A. R. C. Haas of Harvard) set the tone: "Although a great deal of attention has been paid to photosynthesis, nothing is known of the dynamics of the process." The paper went on to say "we cannot analyze the dynamics of photosynthesis without securing accurate data." An obvious statement, but indicative in 1918 of the new mode of attack on biological problems.

A NEW VIEW OF BIOLOGY

Loeb's announcement of the new *Journal* stated the matter in no uncertain terms: "the physico-chemical methods of analyzing life phenomena have thus far made little inroad into the domain of zoology and botany. Under these circumstances, it has happened that what might be regarded as the most fundamental of all the biological sciences, namely general physiology, has not come to have a journal of its own." He added "the editors invite contributions relating to the physico-chemical explanation of life phenomena, no matter in what fields of science they originate." No wonder, then, that the September, 1958, issue is thick with oscillograms of action potentials of nerve. Loeb, himself, when near the end of his own researches attempted to bring the new tools of vacuum tube amplifiers to bear on the questions of his earliest pre-occupations: the physiology of the brain. When Dr. Loeb died, in 1924, Dr. Osterhout, wishing



ALBERT LINDSAY NICKERSON, newly elected member of the Board of Trustees of The Rockefeller Institute, is President of the Socony Mobil Oil Company, Inc., and this year was elected Chairman of the

Executive Committee and Chief Executive Officer of the Company.

Mr. Nickerson has been with the Socony Mobil Oil Company since 1933, progressing through the ranks from a service station attendant to Chairman of the Board of Directors of Mobil Oil Company, Ltd., of England in 1946. He has been Director of the Socony Mobil Oil Company, Inc., since 1946 and was Vice-President from 1951 until he became President in 1955.

A native of Dedham, Massachusetts, Mr. Nickerson received a B.S. from Harvard University in 1933. Among his many activities he holds directorships in the Harvard Alumni Association, the American Management Association, The American Petroleum Institute, and the City Bank Farmers Trust Company. He is a trustee of the Rye Country Day School, International House in New York City, the Community Service Society of New York City, and the American Museum of Natural History.

to memorialize his role in establishing the *Journal*, added to its title page: "Founded by Jacques Loeb." His spirit and his aims are alive in the *Journal* today.

After Loeb's death Dr. Osterhout invited W. J. Crozier of Harvard and John H. Northrup, who was then at the Institute, to join him in editing the *Journal*. These three, with Dr. Osterhout as editor-in-chief, managed the *Journal* until 1947, when Wallace O. Fenn, Professor of Physiology at the University of Rochester and the President of the American Physiological Association, was invited to join them. In 1951 L. R. Blinks, Professor of Botany at Stanford University, and Alfred Mirsky, Member of the Institute, joined the editorial board, and Dr. Mirsky succeeded Dr. Osterhout as editor-in-chief. In 1954, after President Bronk came to the Institute he was asked to join the Board and in the following year Frank Brink, Jr., now Member and Professor at the Institute and Dean of Graduate Studies, became a member of the Board.

To bring still more breadth to the Editorial Board of *The Journal of General Physiology* it has been decided this year that in addition to the Board of permanent members, a few younger members should be added on a rotating basis, each group

serving for three years. The first group includes Vincent Allfrey, and C. M. Connelly of the faculty of the Institute, A. K. Solomon, Associate Professor at Harvard Medical School, Roger M. Herriott, Professor of Biochemistry at The Johns Hopkins University, W. D. McElroy, Director of the McCollum-Pratt Institute, and Jean Brachet, Professor of Anatomy in the School of Medicine of the Université Libre in Brussels.

A few years ago a need for a special journal began to be felt by students of cell biology and especially cell fine structures. Accordingly, under the inspiration of Dr. Keith R. Porter, Member and Professor at the Institute, and President Bronk, The Rockefeller Institute undertook to establish its third journal: *The Journal of Biophysical and Biochemical Cytology*, designed to provide a common medium for the publication of morphological, biophysical, and biochemical investigations on cells, their components, and their products. Such an aim, simply stated, includes a vast area, but the new journal, as stated in its note to contributors gives "special attention to reports on cellular organization at the colloidal and molecular levels and to studies integrating cytological information derived from various technical approaches."

Chief responsibility for editing the *Journal* lies with Dr. Porter and his associate Dr. George E. Palade, also Member and Professor at the Institute. The editorial board also includes Richard S. Bear, Dean, Division of Science at Iowa State College, H. Stanley Bennett, Professor of Anatomy at the University of Washington, A. L. Lehninger, Professor of Physiological Chemistry at The Johns Hopkins Medical School, Francis O. Schmitt, Head of the Department of Biology at the Massachusetts Institute of Technology, Franz Schrader, Professor of Zoology at Columbia University, and Arnold M. Seligman, Associate Professor of Surgery at The Sinai Hospital of Baltimore. As this article goes to press, two additional scientists have accepted nomination to the board of editors; Paul M. Doty, Professor of Chemistry at Harvard University, and Daniel Mazia, Professor of Biology at the University of California.

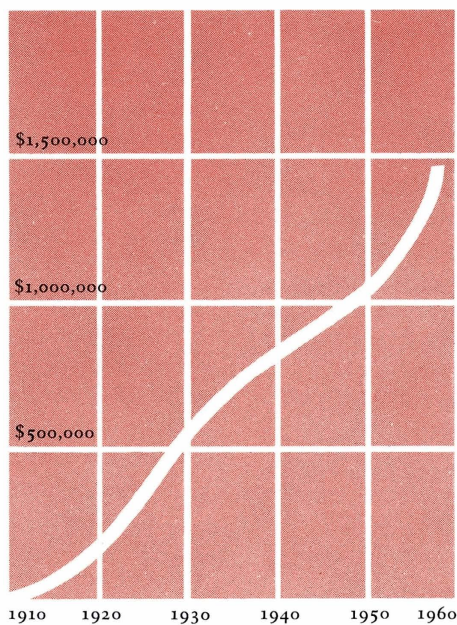
The first issue of *The Journal of Biophysical and Biochemical Cytology* appeared in January, 1955, and after six months more than 400 subscribers were taking it. During the next year nearly 1000 pages were published plus 200 plates, and the number of subscribers increased to just under 1000. Depending heavily, as the cytologists do, on pictorial evidence of their observations, the editors of *The Journal of Biophysical and Biochemical Cytology* have devoted exacting care to the quality of the half-tone engravings published in the *Journal*. In pursuit of excellence they have taken their engraving problems to England and various other places where painstaking craftsmanship is traditional. No less important than the engraver is the printer. The Waverly Press in Baltimore, where the Institute's journals have been published for more than forty years, has thus far succeeded in meeting satisfactorily the difficult printing problems in the new *Journal*.

GROWING CIRCULATION

The Journal of Biophysical and Biochemical Cytology has grown so rapidly in size that had no change in format been made, the number of pages published this year would have approached 2000, but beginning with Volume 4 in January of this year a different and more economical format has been adopted. Currently the number of subscribers is about 1400. It is

our expectation that the *Journal* will grow in size and in circulation as it performs a function of increasing significance in the scientific community.

With the aim of making its journals as readily available to the individual scientist as possible, subscription prices have always been kept low. The average cost per page to the subscriber is a little more than one cent, far below that of most other scientific journals. Inevitably, therefore, if the quality of the publication is to be high the wide gap between income and expenses must be filled. Few who are not intimately engaged in publishing scientific material would be able to guess how wide this gap is. Currently the Institute is contributing about half the total cost of its journals, and it has always underwritten a substantial part. We thought it would be interesting to see how this heavy financial respon-



Cumulative Investment in Publications

sibility for disseminating scientific information has been borne by the Institute over the years. The graph we have prepared shows how the Institute's net investment in its publications has increased over the past fifty years to a cumulative total today of over \$1,400,000.

Needless to say, behind these decades of publication and thousands of pages of scientific papers there lies an efficient but anonymous host of technical assistants who have looked after the many details of getting edited manuscripts through the press and into the hands of scientists. In the beginning this somewhat tedious and

exacting work was done by Dr. Flexner's secretary, Miss Editha C. Campbell. A letter from Flexner in 1909 to Opie regarding the possibility of issuing *The Journal of Experimental Medicine* monthly shows his growing dependence on her. He wrote: "Of course this will involve some increase in editorial work, but I think the increase will not be great in view of the fact that Miss Campbell is on the whole so very competent." In 1910 a separate office, the Publication Service, was established at the Institute with Miss Campbell as its head.

SERVICE TO PUBLICATION

The Publication Service grew rapidly as the journals grew and, in 1916, Miss Florence Stewart, who became head of the service when Miss Campbell retired in 1940, joined the staff as editorial assistant and proofreader for *The Journal of Experimental Medicine*. Miss Stewart remains responsible today for supervision of the production of the Institute's journals and the *Studies*. With the creation of The Rockefeller Institute Press her Service has been designated the Journals Department of the Press and she has become head of the Journals Department. Her efficient staff of nine assure that the attention of our editors can be devoted to the intellectual content of their journals, not dissipated on the thousand essential details of production.

The spirit of solicitude and pride in the journals, which originated with Dr. Welch and Dr. Flexner and is with the editors today, has been caught by the copy editors, the proofreaders, and the subscription clerks, who see our journals through the final phases of publication today. They, too, regard the journals not merely as a job to be done but as a labor of love.

As we review more than fifty years of scientific publications by the Institute it is evident that what has gone before has set high standards of intellectual excellence coupled with generous financial support and competent technical service. We stand today in the midst of an intense and growing need for the diffusion of knowledge on a scale surpassing any we have contemplated. Our task will be to meet the new and large demands with imagination, skill, and flexibility and without sacrificing (and indeed, if possible, by raising) the high standards set by what has gone before.

FACULTY ACTIVITIES

Academic Appointments

CLAYTON RICH

Physician to Out-patients, New York Hospital.

ROBERT L. SCHOENFELD

Associate Professor of Electrical Engineering, Polytechnic Institute of Brooklyn.

Lecturers, Conferences and Symposia

DIETHELM BÖHME

Paper on "The Influence of Killed Mycobacterium Tuberculosis (BCG) and its Constituents upon the Reticuloendothelial System, Internal Organs, and Percentage Distribution of Leucocytes in Normal Albino Mice," 3rd International Symposium for the Reticuloendothelial System, Rapallo, Italy.

ARMIN C. BRAUN

Paper on "Pathogen Factors in the Physiology of Disease—Toxins and Other Metabolites," Symposium on Physiology of Parasitism, American Phytopathological Society Golden Jubilee Program, AIBS Meetings, Bloomington, Indiana.

DETLEV W. BRONK

Address of Welcome, First International Congress of Radiation Research.

Address of Welcome, XII General Assembly, International Council of Scientific Unions.

MERRILL W. CHASE

Lecture on "Tuberculin Testing and Delayed-Type Allergies," Clinical Conference, Bureau of Tuberculosis, New York City Department of Health.

CLARENCE M. CONNELLY

Lecture, "Recovery Processes and Metabolism of Nerve," Study Program in Biophysical Science of the National Institutes of Health, Boulder, Colorado.

GEORGE W. CORNER

Representative of American Association for the History of Medicine at the 16th International Congress of the History of Medicine, Montpellier, France. Paper on "The History of the Hospital of The Rockefeller Institute."

FURIO D'ABRAMO

Paper on "Active Sulfate and the Synthesis of Chondroitin Sulfate," with Phillips W. Robbins, Gordon Research Conference on the Chemistry, Physiology and Structure of Bones and Teeth, Meriden, New Hampshire.

Paper on "Biosynthesis of Chondroitin Sulfate in Beef Embryo Cartilage Extracts," with Fritz Lipmann, International Congress for Biochemistry, Vienna.

HOWARD G. DAVIES

Lectures, "Studies of the Chemical Composition of Single Cells by Microspectrophotometry: I. Techniques, II. Biological Results," Medical School, University of Washington.

RENÉ J. DUBOS

President, Medical and Veterinary Section, 7th International Congress for Microbiology, Stockholm.
Chairman, Symposium on Standardization of BCG Vaccine, International Children's Center, Paris.

D. DZIEWIATKOWSKI

General Chairman, Gordon Research Conference on Chemistry, Physiology and Structure of Bones and Teeth, Meriden, New Hampshire.

Paper on "The Effect of Irradiation with X-Rays on the Uptake of S³⁵-Sulfate by the Epiphyseal Cartilage of Mice," with Helen Q. Woodard, Conference on Autoradiography, American Cancer Society, Inc., and the National Cancer Institute, Rye, New York.

WALTHER F. GOEBEL

Lecturer, The Pasteur Institute.

Lecturer, The University of Freiburg.

Participant, 4th International Congress of Biochemistry, Vienna.

THOMAS D. C. GRACE

Lecture, "A Review of Insect Tissue Culture," Tissue Culture Summer School Course, Denver, Colorado.

Lecture, "A Review of Insect Tissue Culture and Its Application to Various Problems in Entomology," Cold Spring Harbor Tissue Culture Course, Cold Spring Harbor, New York.

SAM GRANICK

Participant, Conference of the Biology Visiting Committee, Brookhaven National Laboratory.

FRANCIS O. HOLMES

Participant, Symposium on the Multiplication of Plant Viruses, Fiftieth Anniversary Meeting, American Phytopathological Society, Bloomington, Indiana.

FRANK L. HORSEFALL, JR.

Participant, Physiology Seminars, Marine Biological Laboratory, Woods Hole.

ROLLIN D. HOTCHKISS

Invited Lecturer, Friday evening series, Marine Biological Laboratory, Woods Hole, "The Dissemination of Genetic Substance by Bacterial Transformation."

Paper on "Evidences for Genetic Alteration of Enzymes in Pneumococci Resistant to Sulfonamides," with Audrey Evans, American Chemical Society National Meeting, Chicago, Illinois.

MARGERIS A. JESAITIS

Participant, 2nd International Colloquium on Bacteriophage at Abbaye de Royaumont, France.

Participant, 7th International Congress for Microbiology, Stockholm.

Seminar on "Inheritance of Nucleic Acid Markers in Crosses of Bacterial Viruses," Max Planck Institute for Virus Research, Tübingen, Germany.

Seminar in Laboratory of Biophysics, University of Geneva, Switzerland.

FRITZ LIPMANN

Participant, CIBA Foundation Symposium on Regulation of Cell Metabolism, London.

Chairman of Session on Photophosphorylation, International Congress for Microbiology, Stockholm.

Participant, Special Session on Proteins, Tiselius Institute, Stockholm.

Chairman of Session on Protein Synthesis, International Congress for Biochemistry, Vienna.

Paper on "Transfer of Phosphate from Yolk Phosphoprotein to ADP," with Murray Rabinowitz, International Congress for Biochemistry, Vienna.

Paper on "Biosynthesis of Chondroitin Sulfate in Beef Embryo Cartilage Extracts," with Furio D'Abramo, International Congress for Biochemistry, Vienna.

DAVID P. C. LLOYD

Paper on "Impedance Change in Relation to Duct Filling and Emptying in Sweat Glands of the Central Foot-Pad of the Cat," before The Physiological Society, Cambridge, England.

KARL MARAMOROSCH

Paper on "New Techniques, Submerged Plant and Insect Cell Culture, in the Study of Arthropod-borne Plant Viruses," XVth International Congress of Zoology, London.

Lecture on "Leafhoppers as Transmitters of Plant Viruses," Institute of Virology, Bratislava, Czechoslovakia.

Lecture on "Multiplication of Plant Viruses in Arthropods," Polish Academy of Sciences, Warsaw.

Paper on "Latent Virus Infections in Arthropods," Symposium on Virus Latency, 7th International Congress for Microbiology, Stockholm; and paper on "Beneficial Effects of Yellows Asters on Corn Leafhoppers," at Session on Biological Transmission of Viruses.

Paper on "Cell Separation in the Study of Arthropod-borne Plant Viruses," Society for Study of Development and Growth, AIBS Meetings, Bloomington, Indiana.

DAVID MAUZERALL

Participant, 4th International Congress for Biochemistry, Vienna.

DAN H. MOORE

Participant, 7th International Cancer Congress, London.

Paper before the Medizinische Akademie, Düsseldorf, Germany.

Paper before the Electron Microscope Society of America, Santa Monica, California.

MONTROSE J. MOSES

Paper on "Patterns of Organization and the Fine Structure of Chromosomes," Symposium on the Cell Nucleus, Chromosomes, and Centrosome, 4th International Conference on Electron Microscopy, Berlin.

Exhibition: "Electron Microscopy and Genetic Structure," 10th International Congress of Genetics, Montreal.

MARJORIE M. NEMES

Paper on "Kinetic and Biochemical Aspects of Poliomyelitis Virus Multiplication," 7th International Congress for Microbiology.

MAN-CHIANG NIU

Lecture on "Thymus Ribonucleic Acid and Embryonic Differentiation," Marine Biological Laboratory, Woods Hole.

Participant, Joint Symposium of the American Society of Zoologists and The Growth Society, AIBS Meetings, Bloomington, Indiana.

S. W. PELLETIER

Paper on "The Carbocyclic Bridged System in Atisine," before the American Chemical Society, Chicago.

GERTRUDE E. PERLMANN

Participant, Protein Symposium, 4th International Congress for Biochemistry, Vienna.

KEITH R. PORTER

Chairman of Symposium on The Cell Nucleus, and paper on "A Review of Progress in The Study of Nuclear Fine Structure," 4th International Conference on Electron Microscopy, Berlin.

ROSS B. PRINGLE

Paper on "Toxins and Other Metabolites as Pathogen Factors in Wilt Diseases," Panama Disease Conference, Purdue.

MURRAY RABINOWITZ

Paper on "Transfer of Phosphate from Yolk Phosphoprotein to ADP," with Fritz Lipmann, International Congress for Biochemistry, Vienna.

HOWARD RASMUSSEN

Paper on "Physiologic Effects of Purified Parathyroid Hormones in Humans," with Clayton Rich, M. Horwith and D. Thompson, Gordon Research Conference on the Chemistry, Physiology, and Structure of Bones and Teeth, Meriden, New Hampshire.

CLAYTON RICH

Paper on "Physiologic Effects of Purified Parathyroid Hormones in Humans," Gordon Research Conference on the Chemistry, Physiology, and Structure of Bones and Teeth, Meriden, New Hampshire.

PHILLIPS W. ROBBINS

Paper on "Active Sulfate and the Synthesis of Chondroitin Sulfate," with Clayton Rich, M. Horwith, and D. Thompson, Gordon Research Conference on the Chemistry, Physiology, and Structure of Bones and Teeth, Meriden, New Hampshire.

ALEXANDRE ROTHEN

Paper on "Studies of Enzymatic Reactions at a Liquid-Solid Interphase, Gordon Research Conference on Chemistry at Interphases.

Paper on "Enzymatic Reactions at Interphases," 4th International Congress for Biochemistry, Vienna.

Paper on "Enzymatic Reactions across Thin Membranes," Swiss Chemical Society, Glarus, Switzerland.

MARIA A. RUDZINSKA

Paper on the Fine Structure of the Contractile Vacuole in *Tokophyra infusioformis*, Symposium on the Fine Structure of Protozoa, XVth International Congress of Zoology, London.

Demonstrations at Refresher Course on Protozoology, arranged by the American Society of Zoologists and the Society of Protozoologists at the AIBS Meetings in Bloomington.

Participant, 6th International Congress of Tropical Medicine and Malaria, Lisbon.

HOWARD A. SCHNEIDER

Paper on "Proteins and Resistance—Susceptibility to Infection," Symposium on Amino Acid and Protein Metabolism, University of Wisconsin.

RICHARD E. SHOPE

Paper on "An Infectious Fibroma of Deer," with Keith R. Dumbrell, 7th International Cancer Congress, London.

Paper on "Latent Virus Infections in Animals," 7th International Congress for Microbiology, Stockholm.

Paper on "The Natural History of Hog Cholera," before the Metropolitan Branch of the Animal Care Panel, Berg Institute, New York.

Paper on "The Epidemiology of Hog Cholera," Biology Group Seminar, Rutgers University.

FACULTY ACTIVITIES

(continued from page eleven)

PHILIP SIEKEVITZ

Paper on "The Meaning of Intracellular Structure for Metabolic Regulation," CIBA Foundation Symposium on Regulations of Cell Metabolism, London.

IRA SINGER

Participant, 6th International Congress on Tropical Medicine and Malariology, Lisbon.

NORMAN R. STOLL

Vice-Chairman, Colloquium on Zoological Nomenclature, London.

Participant, XVth International Congress of Zoology, London.
Participant, Annual Meeting, American Society of Parasitologists.

TOM STONIER

Papers on "The Release of Radioisotopes by Labeled Crown-Gall Bacteria" and "Further Evidence for the Widespread Occurrence of Lysogenicity in the Crown-Gall Organism," Botanical Society of America, AIBS Meetings, Bloomington.

IGOR TAMM

Paper on "Kinetic and Biochemical Aspects of Poliomyelitis Virus Multiplication" with Marjorie Nemes, 7th International Congress for Microbiology, Stockholm.

WILLIAM TRAGER

Participant and Co-rapporteur, 6th International Congress on Tropical Medicine and Malariology, Lisbon.

PAUL A. WEISS

Participant, Study Program in Biophysical Sciences of the National Institutes of Health, Boulder, Colorado.

Lecture on "Recent Experiments on Cell Behavior in Culture," before the Tissue Culture Association, Denver, Colorado.

"The Cell in Development," Introductory Lecture, Conference on Chemical Organization of Cells, National Institutes of Health, University of Wisconsin.

Lecture on "Nature, Science, and Art," before the Graham Foundation for Advanced Studies in Fine Arts, Chicago.

Society Elections

DIETHELM BÖHME

Member, The Harvey Society.

Member, The Society of American Bacteriologists.

Member, The Society for the Reticuloendothelial System.

WILLIAM H. STEIN

Chairman, Editorial Committee, American Society of Biological Chemists, Inc.

Other Appointments and Distinctions

DETLEV W. BRONK

Member, National Science Board.

Member, National Aeronautics and Space Council.

Member, Committee on Graduate Education of the Council of Higher Educational Institutions in New York City.

MERRILL W. CHASE

Associate Member, Commission on Cutaneous Diseases, Armed Forces Epidemiological Board.

FRANK L. HORSFALL, JR.

Member, Board of Scientific Directors, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine.

Member, Health Research Council of the City of New York.
Member, Executive Committee, Health Research Council of the City of New York.

Member, Board of Editors, The American Public Health Association.

Member, Editorial Advisory Board, World-Wide Abstracts of General Medicine.

ROLLIN D. HOTCHKISS

Member, Scientific Advisory Board, Roswell Park Memorial Institute, Buffalo, New York.

DAVID P. C. LLOYD

Member, Advisory Committee on Research, United Cerebral Palsy Research and Educational Foundation.

KARL MARAMOROSCH

Member, Committee on History of Plant Pathology, American Phytopathological Society.

DAN H. MOORE

Member, Virology and Rickettsiology Study Section, National Institutes of Health.

THOMAS M. RIVERS

Appointed Vice-President in Charge of Medical Affairs, The National Foundation.

NORMAN R. STOLL

Member, International Trust for Zoological Nomenclature, nominated by the International Commission on Zoological Nomenclature.

PAUL A. WEISS

Member, Science Advisory Board, World Science and Pan-Pacific Exposition, Seattle, Washington.

Member, Committee on Tissue Transplantation, National Academy of Sciences—National Research Council.

DOUGLAS WHITAKER

Member, Harvard Visiting Committee of the Board of Overseers to visit the Department of Biology and Related Research Facilities.

INSTITUTE MENTION

New Appointments to the Faculty

DR. HANS G. BOMAN of the Biochemical Institute of the University of Uppsala, Sweden, has been appointed Research Associate in the Laboratory of Dr. Perlmann, effective October 1, 1958.

DR. CLAUDE A. BOUVIER of the Department of Public Health and Preventive Medicine at Cornell University, will be a Guest Investigator in the Laboratory of Dr. René Dubos for six months, beginning July 1, 1958.

- DR. M. PRINCE BRIGHAM of the Department of Surgery, Temple University School of Medicine, has been appointed Guest Investigator in the Laboratory of Drs. Moore and Stein, beginning July 15, 1958.
- MISS DOROTHY CONWAY, who has been a technician at the Institute, has been appointed Research Associate to work with Dr. Arpad Csapo in the Laboratory of the Physiology of Reproduction.
- DR. AXEL DELBRUECK, formerly of the Department of Physiological Chemistry of the University of Marburg in Germany, has been appointed Research Associate, beginning October 1, 1958, to work in Dr. Fritz Lipmann's Laboratory.
- DR. ROY S. DOMBRO, formerly in the Department of Biochemistry of the University of Wisconsin, has been appointed Research Associate, beginning September 1, 1958, to work in Dr. Woolley's Laboratory.
- DR. C. D. DUKES of the Department of Microbiology of Baylor University College of Medicine has been appointed Guest Investigator to work with Dr. Merrill W. Chase, beginning August 1, 1958.
- DR. MARILYN G. FARQUHAR, formerly Research Pathologist in the Department of Pathology, University of California School of Medicine, has been appointed Guest Investigator and Fellow in Dr. Palade's Laboratory, beginning October 1, 1958.
- DR. FRANK E. FRIEDL, who is receiving his Ph.D. degree in Zoology from the University of Minnesota, has been appointed Guest Investigator to work in Dr. Stoll's Laboratory, beginning October 1, 1958.
- DR. JAMES L. GERMAN, formerly at the National Institute of Allergy and Infectious Diseases, has been appointed Research Associate and Assistant Physician to the Hospital, effective September 1, 1958, to work with Dr. Bearn in Dr. Kunkel's Laboratory.
- DR. GUIDO HARTMANN, from the Max Planck Institute for Cytochemistry in Munich, was appointed Research Associate to work in Dr. Lipmann's Laboratory, beginning October 1, 1958.
- DR. DANIEL KOSHLAND of the Chemistry Department of Brookhaven National Laboratory, was appointed Lecturer at The Rockefeller Institute for a term of three years, beginning October 1, 1958, to conduct a seminar in theoretical organic chemistry.
- DR. ELEANOR R. LAPPANO, formerly of the New York University Post-Graduate Medical School, has been appointed Research Associate, beginning October 1, 1958, to work in the Laboratory of Dr. Paul Weiss.
- DR. SOLOMON LEVINSON, who was in the Chemistry Department of New York University, has been appointed Research Associate, beginning September 1, 1958, to work in Dr. Theodore Shedlovsky's Laboratory.
- DR. NATHAN LEWIN, formerly in the Department of Chemistry of Birkbeck College, University of London, has been appointed Research Associate, beginning September 24, 1958, to work with Dr. Pelletier in Dr. Craig's Laboratory.
- DR. RAUL D. MACHADO of the Instituto de Oleos in Rio de Janeiro, has been appointed Guest Investigator, beginning October 1, 1958, to work in Dr. Porter's Laboratory.
- DR. GUIDO MAJNO, Assistant Professor of Pathology at the Harvard Medical School, has been appointed Guest Investigator, beginning September 1, 1958, to work in the Laboratory of Dr. Palade.
- DR. HIROSHI MATSUSHITA, formerly of the Department of Physiology of the Wakayama Medical School in Japan, has been appointed Research Associate, beginning September 1, 1958, to work in Dr. Walther Goebel's Laboratory.
- DR. JEAN-PAUL MEYER of Basel, Switzerland, has been appointed Guest Investigator to work with Dr. Weiss, beginning October 1, 1958.
- MR. NORBERT P. NEUMANN, formerly in the Department of Agriculture and Biochemistry, University of Wisconsin, was appointed Research Associate to work with Dr. Stanford Moore, beginning September 1, 1958.
- DR. LORRIN A. RIGGS, Professor of Psychology at Brown University, was appointed Guest Investigator in Dr. Hartline's Laboratory, beginning October 1, 1958.
- DR. SEIYO SANO of Kyoto University in Japan, was appointed Guest Investigator in the Laboratory of Dr. Sam Granick, beginning September 1, 1958.
- DR. ALAN J. SOLO, formerly of the Department of Chemistry at Columbia University, has been appointed Research Associate, beginning September 15, 1958, to work with Dr. Pelletier in Dr. Craig's Laboratory.
- DR. NORMAN SUTIN of the Department of Chemistry of Brookhaven National Laboratory, has been appointed Lecturer in Physical Chemistry, beginning September 1, 1958.
- DR. EICHI YAMADA, formerly of the School of Medicine of Kurume University in Japan, has been appointed Research Associate, beginning September 1, 1958, to work in Dr. Porter's Laboratory.
- DR. DAVID A. YPHANTIS, formerly with the Biological and Medical Research Division of Argonne National Laboratory, has been appointed Assistant Professor, beginning September 1, 1958, to work with Dr. Lyman Craig.

Faculty Terminations

- DR. ROGER D. COLE, a Research Associate in the Laboratory of Drs. Moore and Stein, left the Institute August 1, 1958, to work in the Chemistry Department of the Virus Laboratory at the University of California, Berkeley.
- DR. FURIO D'ABRAMO, a Research Associate in Dr. Lipmann's Laboratory, left the Institute July 1, 1958, to return to the Institute for the Study and Cure of Tumors in Naples.
- MR. MARTIN GELFAND, a Guest Investigator in Dr. Woolley's Laboratory, left the Institute August 19, 1958, to return to The Johns Hopkins University Medical School.
- DR. MASAYOSI GOTO, a Guest Investigator working with Dr. Csapo, returned to Japan on September 3, 1958, where he is Professor of Physiology at the University of Kagoshima.
- DR. WILLIAM INSULL, JR., a Research Associate in Dr. Ahrens' Laboratory, left the Institute August 20, 1958, to work at the National Institute for Medical Research, Mill Hill, London.
- DR. NORMAN E. KEMP, a Guest Investigator in Dr. Weiss' Laboratory, returned on August 15, 1958, to the University of Michigan where he is Associate Professor of Zoology.

INSTITUTE MENTION

(continued from page thirteen)

- DR. JEAN-GABRIEL LAFONTAINE, a Research Associate in Dr. Porter's Laboratory, left the Institute on July 31, 1958, to work in the Cancer Institute of Notre Dame Hospital in Montreal.
- MR. MOSES LIEBERMAN, a Guest Investigator working with Dr. Zinder, left the Institute on August 29, 1958, to return as a medical student to New York University Bellevue Medical Center.
- DR. HARRY D. PECK, a Guest Investigator in Dr. Lipmann's Laboratory, left the Institute September 1, 1958, to join the staff of the Oak Ridge National Laboratory.
- DR. MURRAY RABINOWITZ, a Guest Investigator in Dr. Lipmann's Laboratory, left the Institute July 1, 1958, to become Director of the Cardiopulmonary Laboratory and Assistant Professor of Biochemistry and Medicine at the University of Chicago School of Medicine.
- DR. IRVING L. SCHWARTZ, Assistant Professor in Dr. Dole's Laboratory, left the Institute on August 31, 1958, to become Senior Scientist at the Brookhaven National Laboratory and Attending Physician in the Hospital of the Medical Research Center there.
- DR. FRIEDERICH SEILERN-ASPANG, a Research Associate in Dr. Weiss' Laboratory, left the Institute on August 1, 1958, to return to the University of Innsbruck where he is Assistant Professor in the Zoological Institute.
- DR. J. ROBERTO SOTELO, who has been working as a Guest of the Institute with Dr. Porter, returned on August 1 to the Instituto de Investigacion de Ciencias Biologicas in Montevideo, Uruguay.
- DR. SAMUEL WEISS, an Assistant Professor in Dr. Lipmann's Laboratory, left the Institute on July 1 to become Assistant Professor of Biochemistry at the Argonne National Laboratory.
- DR. STEVEN L. WISSIG, a Guest Investigator in the Laboratory of Cytology, left the Institute on August 29, 1958, to join the faculty of the University of California School of Medicine in San Francisco.
- DR. HANS ZACHAU, a Research Associate in Dr. Lipmann's Laboratory, returned to the Max Planck Institute in Munich, on August 1, 1958.
- DR. DONALD B. ZILVERSMIT, a Guest Investigator in Dr. Ahrens' Laboratory, returned on September 2, 1958, to the University of Tennessee where he is Professor of Physiology.

Visiting Professors in Residence

- DR. SAMUEL A. GOUDSMIT, Chairman, Department of Physics, Brookhaven National Laboratory, September 15-19, 1958.
- DR. JOHN G. KIRKWOOD, Sterling Professor of Chemistry, Yale University, September 22-26, 1958.

Guest Speaker

C. H. WADDINGTON, Professor of Animal Genetics, University of Edinburgh, Scotland, September 15, 1958.

New Grants and Contracts

From the United States Public Health Service for the following work:

For studies of the structure of malaria parasites and host cells by Dr. William Trager \$2,427

For the first year of a 5-year Training Program in the Anatomical Sciences under Drs. Keith R. Porter and Dan H. Moore \$32,076

For studies of human chyle flow and chylomicron protein by Drs. M. L. Peterson and E. H. Ahrens \$2,116

For the first year of a two-year study by Dr. Clara J. Lynch of the genetics of susceptibility of mice to experimental tuberculosis \$17,894

For a study by Dr. Maclyn McCarty on the cell surface of group A streptococci \$10,465

For the first year of a 5-year study by Dr. Lyman Craig to correlate data on membrane diffusion with sedimentation data \$45,111

For the first year of a 5-year study by Dr. Vincent P. Dole of the metabolic activity of non-esterified fatty acids \$24,494

For the first year of a two-year study by Dr. Gertrude Y. Gottschall of proteolytic enzymes from human white blood cells \$8,625

For the first year of a 5-year study by Dr. Gertrude E. Perlmann of the relation of protein structure to biological function \$14,416

From the Helen Hay Whitney Foundation for studies by Dr. Maclyn McCarty pertaining to rheumatic fever, connective tissue, and certain of its diseases \$5,000

From the American Cancer Society for a study by Dr. John D. Gregory of the enzymes and mechanisms of sulfate activation and transfer \$6,535

From the American Cancer Society for a study by Dr. Jules Hirsch on the diagnostic significance and histogenesis of ciliocytophthoria in exfoliated tracheobronchial cells \$7,498

From the National Science Foundation for a two-year study by Dr. Keith R. Porter of membrane-limited systems in the cells of the vertebrate eye \$22,000

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