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# THE ROCKEFELLER INSTITUTE

# *Quarterly*

FALL • 1961



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THE ROCKEFELLER INSTITUTE • A GRADUATE UNIVERSITY AND RESEARCH CENTER





*The gardens adjacent to Abby Aldrich Rockefeller Hall are verdant in spring, shady in summer, colorful in fall, and a snowy prospect from the Abby in winter-time. Cover from a photograph by Stefan Pischinger.*

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**THE ROCKEFELLER INSTITUTE QUARTERLY**

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# SOME REFLECTIONS ON "THE TWO CULTURES AND THE SCIENTIFIC REVOLUTION"

By Professor Ludwig Edelstein

IT USED TO BE SAID that every man is born either an Aristotelian or a Platonist. In not too different a sense it is now beginning to be said that every man is either a scientist or a humanist. And this dichotomy is taken as the starting point for the diagnosis and consequent proposal for a treatment of the ills besetting our times.

Though both the scientist and the humanist may feel that individual existence is a rather tragic affair, they belong, so the argument goes, to two entirely different cultures. The scientist remains fundamentally optimistic, social-minded and has, so to say, the future in his bones. The humanist is a traditionalist, who looks backward rather than forward. Even in social matters, he wants to preserve rather than to change. Thus modern life is rent asunder, and to heal the break it is thought necessary to bring the members of the two groups closer together. Scientists do not care enough for the humanities. Their lives could be made much fuller by their taking an interest in literature and art. The humanists are ignorant of science. How much richer they would be if they learned to appreciate the beauty of the scientific picture of nature. Furthermore, the members of both cultures know too little about the great scientific revolution taking place in our age, the consistent and constant application of science to industry which is creating an entirely new world. If this revolution were better understood, if we were better prepared to manage it with the help of trained technical experts versed in the handling of the new human situations that have arisen, we should be better able to cope also with what lies ahead of us.<sup>1</sup>

Perhaps it is a matter of personal experience whether one believes that nature has devised such a dichotomy of man and his culture. I, for one, would only be willing to believe that like the Englishman, all men are born "either a little liberal or a little conservative." Yet, granting for the sake of argument that the other cleavage

does exist, that there is a culture of the scientist and a culture of the humanist, granting what is certainly true, that the scientific revolution changes the face of the earth not merely on one or the other continent but everywhere—is the cure advocated sufficient to heal the illness, has the diagnosis determined the whole extent of the disease? This to be sure is the important issue.

Now one might well affirm that a greater mutual understanding between the scientist and the humanist would increase the individual's happiness. It is not the least of the powers of knowledge that it can in itself be a source of happiness, and such a salutary effect of knowledge is to be recommended especially to men who have

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*Ludwig Edelstein was formerly Professor of Greek in the University of California and Professor of Humanistic Studies in The Johns Hopkins University. He became Visiting Professor in the Institute in 1956 and Professor in 1960. His interests, which originated in philosophy and extended to classical languages and literature, now center in Greek philosophy and science.*

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come to feel that they are at the mercy of their knowledge. Moreover, if each culture familiarized itself with the achievements of the other, there would be less danger that scholars of both denominations would be mere specialists. They would learn—to speak in the terms of an up-to-date language—to be universalists or at least not exclusivists, a most important lesson. Finally, neither the scientist nor the humanist should live in seclusion from the world. It is their obligation to find out what is going on, to consider the bearing that their work has on human affairs, and to prepare themselves and others for the future.

However, will the scientist better acquainted with the humanities, and the humanist better acquainted with the sciences be able to decide whether traditionalism or progressivism is superior? Will they have learned what ought to be

saved from the past or what ought to be altered in the future? No matter how much more efficient we might become in distributing the gains of applied science, would we know which course to follow? Improved technical means can relieve poverty and bodily suffering. They also increase the threat of destruction, of war. Whether the scientific revolution will in the end bring salvation or annihilation depends on the aims cherished. Are we sure of our aims? Do we believe in them? Can we defend them?

To these questions hardly anyone will dare to give an answer in the affirmative. For it is characteristic of the present situation—and this seems to be the true illness from which both cultures suffer—that all standards of human action have been called in question. Values have become subjective. They are without any general sanction. Even for doing good, for helping others, men are unable to adduce rational principles. Relativism and scepticism pervade our age to a greater extent than any earlier period in history. Living in a democracy, we say, we are democrats; under a fascist regime, we would probably be fascists, under communist rule, communists, and something can be asserted in favor of each of these forms of government. Wars, whatever the slogans professed, in our opinion, are fought either in the interest of the bankers or for imperialistic ends. The shelter ethics of recent days, with its credo "Shoot thy neighbor", is only the latest and most perverse expression of a common indifference to all values except that of survival. It is, I am afraid, oversanguine to expect that a little bit more science, a little bit more literature, or a few thousand more engineers, even human engineers, would remedy this state of affairs. For much more is involved than an alienation of interests, which must have existed ever since the sciences and the humanities were established as independent areas of research though perhaps never to the degree to which it exists today; much more than an application of knowledge to industry, which again in some form or other must have presented a problem ever since man invented tools and by improving them constantly began to change the conditions of life. The present state of affairs constitutes a critical illness that goes to  
(continued on page two)



the very core of our existence.

That a moral and intellectual crisis was in the offing, that private and subjective concerns would come to prevail, that in the end the foundations of society would be undermined, was clear already to many of the great analysts of the intellectual situation at the turn of the nineteenth century. In the America of the second half of that century, when the scepticism of the house of Adams was rampant—a scepticism for which there were only lines of forces instead of lines of will; for which history was a struggle of fear and greed that, together with economic and geographic necessities, determines in an eternal cycle the sequence of events; for which of all the things without meaning none was more meaningless than man—William James and Josiah Royce spoke most passionately of the threatening anarchy. In Europe the dangers lying ahead were most clearly seen perhaps by Kierkegaard and Nietzsche, Jacob Burckhardt and Wilhelm Dilthey, Lord Acton, Renan, and Dostoevsky, whose parable of *The Grand Inquisitor* gives a stirring and disquieting picture of modern nihilism.

The plot for the tragedy, of which we witness not the first and probably not the last act, was undoubtedly laid by the rise of historical consciousness. Early nineteenth-century historians, foremost among them the members of the so-called Historical School, had learned to appreciate the worth of each of the great civilizations on the globe. The history of Western culture and its antecedents turned into a genuine history of the world, and in this history all countries and all periods of their development had their own wisdom and their own justification. In the eyes of the historian they were equally near to God. No other lesson could be drawn from history. Human insight is relative to space and time; partial views alone appear to be open to man, real knowledge is beyond his reach. And this historical relativism invaded even the interpretation of philosophical systems. Metaphysics, the rational answer to the riddle of the world, became a dream, a simile or metaphor expressing wishes and feelings; ideas became ideologies or mythologies. Thus man was set free to give to every experience its due, to surrender to it as if there were no knowledge or standard that could bind him; he was liberated from the last chain that

seemed to fetter him in his quest for freedom.<sup>2</sup>

Such a subjective point of view, on the other hand, was corroborated by the naturalism resulting from the unprecedented advance of the natural sciences, which began around the middle of the nineteenth century. For to this naturalism the world is a realm of brute facts, in which intelligibility and even human reason are but a kind of cosmic accident. And once visible phenomena are interpreted to be irrational, the natural laws which the human mind observes and formulates no longer are a wonder, exciting admiration or valued, as was true of Newtonian science, chiefly as the true foundation for natural religion and moral philosophy. Rather, the lawfulness of nature is a miracle defying understanding. The application of mathematics to physics—of old considered the greatest triumph of reason—is mathematics' "unreasonable effectiveness in the natural sciences." Consequently, as man is approaching the mastery over nature for which earlier generations hoped, he is in danger of becoming a "materialistic magician", a "man not using, but veritably worshipping what he vaguely calls forces, while denying the existence of spirits."<sup>3</sup>

Ever since human history ceased to have moral implications, since reason despaired of its adequacy to the task with which it had been occupied, since nature ceased to tell a story from which one could learn, other ways of establishing standards were explored. At first the hope was that science, which had so greatly contributed to the downfall of traditional values, would itself provide new ones. It was thought to constitute by its very nature a liberal education. The judgment of truth based not on books, not on tradition or revelation, not on philosophy, but on scientific research, was to ensure human dignity. Even in the first decades of the twentieth century advocates of the creed of scientific humanism have not been missing. However it is fair to maintain that their belief is a belief in the impossible. Modern science is not concerned with human purposes. Its knowledge of ascertained natural facts never represents the whole of human experience. It cries out for insight derived from other sources.<sup>4</sup>

The humanism expected to come from scientific knowledge and esthetic experience fared no better. Its watchword was

Darwin's admission that his preoccupation with science, his loss of other tastes, was a loss of happiness, possibly injurious to the intellectual and more probably to the moral character, for it enfeebles the emotional part of our nature. A combination of the forces of the head and of the heart then seemed advisable.<sup>5</sup> But the solution proved to be a failure, and for good reason. The literature of the past may be able to strengthen the convictions still ingrained in man by tradition or education, though lying dormant or recognized only vaguely; it can reveal models of life to him who seeks for them. It cannot instill values in those who are sure that no values exist. They may find it relaxing for some time to live in the world of fantasy; the truth for them remains something different. And is not their truth more and more confirmed by contemporaneous literature? For literature has itself succumbed to the stark naturalism of the common philosophy; its authors no longer speak with that insight once given to poetical imagination to disclose, even in the dark traits of human nature, a law transcending human arbitrariness.

Nor could the prescribed selective reading of literature, which is still recommend-

## Quotation

SIR WILLIAM OSLER ON "THE OLD HUMANITIES AND THE NEW SCIENCE"

"Two things are clear: there must be a very different civilization or there will be no civilization at all; and the other is that neither the old religion combined with the old learning, nor both with the new science, suffice to save a nation bent on self-destruction . . . The salvation of science lies in a recognition of a new philosophy—the *scientia scientiarum* of which Plato speaks. After discussing the various forms of government, Plato concludes that 'States are as the men are, they grow out of human characters,' and then, as the dream-republic approached completion, he realized that after all the true State is within, of which each one of us is the founder, and patterned on an ideal the existence of which matters not a whit. Is not the need of that reconstruction the Greek message to modern democracy?"

*Presidential Address before the Classical Association, University of Oxford, May 16, 1919*



ed in our own day, stem the tide. Be the writers the Greeks' dramatists and their other poets, as the more traditional humanism advocates, be they Homer, Sophocles, Plato, Aristotle, Virgil, Confucius, Shakespeare, Milton and Goethe, as the more catholic disciples of Irving Babbitt suggest, they do not impose upon the *élan vital* the needed inner restraint because the concept of a classical literature, like all other concepts of absolute standards, has lost its meaning. The teaching of the authors who are set up as examples therefore appears to be mere preaching. And they I think are right who foresee that in the end there will be nothing left for the literary humanist except an almost arbitrary choice between the existing authorities, Catholicism and Communism.<sup>6</sup>

Quite recently some have proposed to found humanism on the study of the history of science.<sup>7</sup> Science, they hold, implies unity of knowledge and unity of mankind. Its motives are curiosity and idealism; it creates objectivity and fights superstition; it demonstrates the fact of constant progress. Reflecting on what has been done in former ages, man will learn respect for their achievements and go forward without fear. The more knowledge of history he acquires, it is argued, the sounder will be his ideas. But an unbiased analysis of the record does not bear out the claim that science has played the same benign role in all periods of its development. The search for truth has not been the only motive for seeking knowledge; the "fruits of science" also have induced man to seek further. Scientists have often fallen victims to superstition. They have not always envisaged greater or infinite progress. In short, the belief in a scientific man, endowed with eternal and absolute ideals, is as unwarranted as the eighteenth-century belief in a natural man whose instinct safely leads him toward the truth. The history of the natural sciences as well as that of the humanities is but a kaleidoscope of opinions, and no analysis of facts produces an "ought." To overlook this is as much a fallacy in history as in ethics.

Only one thing can indeed be learned from the past, as Bacon saw. He rightly conceived of a history of all learning—for there can be no true history of human knowledge which does not include both the sciences and the humanities—

and he wanted it to represent "the antiquities and originals of knowledges and their sects, their inventions . . . their flourishings, their oppositions, decays, depressions, oblivions, removes, with the causes and occasions of them." The "use and end" of such a history he designed "not so much for curiosity or satisfaction of those that are the lovers of learning, but chiefly for a more serious and grave purpose, which is this in few words, that it will make learned men wise in the use and administration of learning."<sup>8</sup> Such a history was wanting in Bacon's day and still is a desideratum. But the little we do know tells us much about the possibilities of human nature and the ways of the world. It could free us from the narrowness of our views and make us more critical of ourselves. It could make us humble and therefore wise. But humility, though the beginning of wisdom, is not yet wisdom itself.

Where then is a solution of our problems to be found? Royce, who in the 1880's had talked of "The Decay of Earnestness", who had tried to determine "Why we lost what we had", could say in 1906 in his "Lectures on Idealism": "Even those who condemn idealism possess in the concrete the spirit of idealism. They simply lack self-consciousness as to what their position is. And this lack is after all very much their own affair."<sup>9</sup> Faced with the world as it now is we can hardly afford to be that generous with regard to others or with regard to ourselves. Otherwise we shall be merely the obedient servants of events, not their masters. We may create better living conditions, we will hardly create a better life. And although we may do in underdeveloped countries what the Russians would do if we failed, it may also happen that together with the machines we export, relativism and subjectivism will reach the farthest corners of the earth, and that the threatening destruction of the values of civilization—the "Abolition of Man"—will become universal. For with modern relativism and subjectivism goes modern activism inherited from the French Revolution, the conviction not only that man can and should change social conditions, but that he can change them without regard for the experience of past ages.

Now the world view common today in the opinion of those who hold it is a mere

statement of facts. In truth it is a philosophy. For facts stated are facts interpreted. Even what is called common sense is a certain interpretation of the data and, like all universal interpretations, is the expression of a mode of thinking. Moreover, as happens in every age, so in ours the common world view is a matter of unreasoned faith, a dogma blindly accepted. Few are willing to find out whether anything new has been discovered by the philosophers whose business it is in the social fabric to be concerned with such matters. Yet it is not only the sciences and the humanities that progress, philosophy too progresses. And however one may judge the present state of the debate and its outcome, one thing is clear: the naturalism and subjectivism popularly held are challenged to an ever increasing degree.

To illustrate this contention by a few examples, the contemporaneous naturalist philosopher does not necessarily hold that reason is something alien to the universe, that mind is a by-product of nature.<sup>10</sup> For him therefore the relationship between mathematics and physics is no longer unreasonable or miraculous. Metaphysical problems, though their solutions have varied in the course of history, are again considered real problems even with regard to a world of brute facts. Thus one of the authors of the *Principia Mathematica* has ventured to assert that the world of brute facts would be illusory without "a principle of limitation," and that this "ultimate limitation" is God whose "existence is the ultimate irrationality;" he has written of "Mathematics and the Good."<sup>11</sup> If in the nineteenth century it was asserted that philosophical knowledge must be scientific in order to have value, it is now more often admitted that there is also valid evidence of another sort. Philosophy is not simply one of the sciences. As for theories of knowledge, epistemological dualism, a dyslogistic term for decades, is a phrase one can now use without raising eyebrows. In fact in a keen study of the scientific and philosophical development of the past fifty years Professor Lovejoy has claimed that the "*Revolt against Dualism*" has failed. And the analysis of words is giving way before a new interpretation of meaning.

In ethical matters, the theory that all morality is an expression of the resent-

(continued on page four)



ment of the weak against the strong has hardly any defenders any more. The multiplicity of moral concepts, of ethical opinions, is thought to be not incompatible with the existence of a moral law. One discusses "*Reason and Ethics*" and insists that the problem of a normative ethics is central.<sup>12</sup> Even existentialism, in its beginnings the most outspoken defender of relativism and subjectivism, seeks an absolute. Admitting the historical relativity of man's thought one rediscovers the unity of reason.

Finally, philosophy tries to break through the walls that the last century had erected around it, and to reconquer lost territories. The metaphysical foundations of the sciences and of the humanities are debated. It is recognized that the problem of mechanism and teleology is a legitimate philosophical problem; that the question whether economic forces are the main factors in history is not to be decided only by sociologists and economists. And a reinterpretation of the history of philosophy reads off from its "experience-tables" the considerations brought forward in favor of the one or of the other of the fundamental philosophical positions, making sure that no argument is overlooked, that the search is not restricted by the limitations of an individual's insight.<sup>13</sup> What would one say of a scientist who made but one experiment or studied only one specimen of the object he is investigating? A true philosophical dialogue is possible only when the past and present thinkers form a community. It was in this spirit that Darwin, after reading Aristotle's philosophical interpretation of biological phenomena, said that compared to him, Linnaeus and Cuvier, "his two gods though in very different ways", were "mere school boys."

I need not go any further into the present debate. My intention is not to advocate any special philosophical solution. The only point I wish to make is that philosophy is changing. As was true of all periods of its history, the very changes in the sciences and in the humanities, the changes in man's attitudes, hopes and fears, the inner momentum of philosophical thought have enforced reconsideration of the insight that had been won. So far no generally accepted view has emerged. Not even an agreement on fundamentals similar to that which existed in the Middle Ages, in the Renaissance, or in the

eighteenth century has as yet been reached. But it is surely necessary to be aware of the new possibilities. The ethos of the scientist and of the humanist demands that he constantly question his assumptions, that he ask whether they are sound or whether better ones can be detected. If of anyone, it may be said of the scholar that the "unexamined life is not worth living."

Shelley in "A Defence of Poetry" wrote: "The cultivation of those sciences which have enlarged the limits of the empire of man over the external world, has, for want of the poetical faculty, proportionally circumscribed those of the internal world; and man, having enslaved the elements, remains himself a slave. To what but a cultivation of the mechanical arts in a degree disproportionate to the presence of the creative faculty, which is the basis of all knowledge, is to be attributed the abuse of all inventions for abridging and combining labour, to the exasperation of the inequality of mankind? From what other cause has it arisen that the discoveries which should have lightened, have added a weight to the curse imposed upon Adam?" Poetry, which Shelley extolled as the saving remedy, has failed to cure the shortcomings of the time, "when, from an excess of the selfish and calculating principle, the accumulation of the materials of external life exceeds the quantity of the power of assimilating them to the internal laws of human nature", when "the body has become too unwieldy for that which animates it."<sup>14</sup> Perhaps philosophy will succeed in working out another, a better solution. It has always been on the basis of the hypothesis that the world can be understood by reason, that the world became understandable. In all intellectual crises it has been the belief in the possibility of a solution that made the solution possible.

But if no new answer to the old riddle is forthcoming, then, to say it once more, no rapprochement between the sciences and the humanities, no form of humanism, conventional or unconventional, will be of avail. And it will be more honest for us to resign ourselves to what we think is reality, to "hang our sensibilities" and to stop talking about improving the world. Even in that event, I suppose, we would still have convictions to die for if an emergency should arise, for real emergencies have

their own way of creating convictions. (The Oxford Debating Society, in 1938, voted against fighting for His Majesty's Government, but in 1939, its members fought and died valiantly to save their king and their country.) Yet we shall hardly have convictions to live for. And duty and devotion to our task, be it a task of acting or of understanding, will become weaker and rarer—unless, of course, guidance is sought in a metaphysics that we cannot reconcile with our historical and scientific views, or in a religion which we cannot reconcile with the work we are carrying on in the light of day.

Most, if not all of these reflections on the topic of "The Two Cultures and the Scientific Revolution" are, I am afraid, truisms. My only excuse for putting them down is that there are moments at which one feels the need to express the truisms which are in everyone's mind so as to recall for oneself and for others what we still have in common, all differences of opinion notwithstanding.

#### FOOTNOTES

- 1 C. P. SNOW, *The Two Cultures and the Scientific Revolution*, 1959.
- 2 W. DILTHEY, *Gesammelte Schriften*, V, 1924, p. 9.
- 3 C. S. LEWIS, *The Screwtape Letters*, VII. For mathematics and physics, see E. P. Wigner, "The Unreasonable Effectiveness of Mathematics in the Natural Sciences", *Communications of Pure and Applied Mathematics*, XIII, 1960, pp. 1 ff.
- 4 cf. W. C. DAMPIER, *A History of Science*, 1944<sup>3</sup>, pp. 444 ff., especially 476.
- 5 L. EDELSTEIN, "William Osler's Philosophy", *Bulletin of the History of Medicine*, XX, 1946, pp. 278 f.
- 6 T. S. ELIOT, "Humanism of Irving Babbitt" in *Selected Essays*, 1932, pp. 390 f.
- 7 G. SARTON, *The History of Science and the New Humanism, The History of Science and the Problems of Today*, 1936.
- 8 *Advancement of Learning*, Book II, I, 2.
- 9 J. ROYCE, *Lectures on Modern Idealism*, 1919, p. 240.
- 10 J. H. RANDALL, JR., *Nature and Historical Experience*, 1958.
- 11 A. N. WHITEHEAD, *Essays in Science and Philosophy*, 1947, pp. 97 f. The sentences quoted are from *Science and the Modern World*, 1945, pp. 256 f.
- 12 S. TOULMIN, *Reason and Ethics*, 1950.
- 13 A. O. LOVEJOY, "On Some Conditions of Progress in Philosophical Inquiry", *The Philosophical Review*, XXVI, 1917, pp. 123-163, especially 146, 150 ff.
- 14 *English Critical Essays* (nineteenth century), ed. by E. D. JONES, *The World's Classics*, 1916, pp. 154 f.



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## Portrait Gallery

T. MITCHELL PRUDDEN

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THE PORTRAIT of T. Mitchell Prudden by Thomas W. Corner, which hangs in the Dining Room of Welch Hall, suggests far more than a superficial likeness of this remarkable man who was Vice President of the Institute from its founding until his death in 1924. The books at his elbow are the classic textbook of pathology by Delafield and Prudden and "The Story of Bacteria," which Simon Flexner had read as a medical student and as a result determined to go into research. The Indian bowl suggests his fondness for the American southwest.

In 1892 he was appointed to the newly created Chair of Pathology in Columbia University, and was for the first time free of financial worry. Dr. Alfred E. Cohn, one of Prudden's students, and later Member of the Institute, said that Prudden was the only teacher in the College of Physicians and Surgeons at that time whose lectures gave any idea that medical science could be advanced by research. He was also deeply interested in the cause of public health, frequently appearing before the United States Senate or the Legislature in Albany to offer formal protest against the passage of some bill inimical to public health.

When the plan for The Rockefeller Institute began to take form toward the end of the 1890's it was natural that Prudden should have been among those first involved. In 1901 he was elected a member of the National Academy of Sciences, having been sponsored by Dr. William Welch, and when the Institute's Board was created in that same year, Dr. Prudden was one of its five Directors. He was first Vice President of the Board and first Chairman of its Executive Committee, offices which he held until his death. After his retirement from Columbia in 1909 Prudden came to the Institute daily. He was a good administrator, and during the first World War he carried on the duties of Business Manager after Mr. Henry James, Jr., enlisted. Many of the staff recalled him as "the best friend the workers at the Institute had." When Dr.

Prudden died, Mr. John D. Rockefeller, Jr., wrote: "No one on the Board . . . has given more careful, constant, thoughtful, brooding attention to the interests of the Institute, large and small, than he. His associates and the Trustees have long relied upon him in a peculiar way, and at the same time have always leaned with confidence upon his judgment."

Parallel with Prudden's devotion to teaching and to science was a love of the

ican Plateau." Prudden's geological, anthropological and archaeological interests infected his packer, Clayton Weatherill, who with his brother continued explorations suggested or begun by Dr. Prudden. Two of the Weatherill brothers went on to discover the great cliff dwellings at what is now Mesa Verde National Park.

Prudden's vigor was never very great in spite of his fortitude, and could not sustain his western travels long after 1914.



land and lore of the Southwest that resulted in his name being associated in American archaeology with significant discoveries about pueblo architecture. In 1892 Prudden visited the Great American Plateau embracing the corners of Colorado, Utah, Arizona and New Mexico, which held his heart forever after. He came to be at home there, gaining the respect of the frontiersmen and Indians alike. His accounts of "wanderings among canyons and buttes, in the land of the cliff-dweller, and the Indian of today" were collected into a volume published in 1906 by Putnam as "On the Great Amer-

He continued an active life of public service, however, becoming a charter member of the Public Health Council of the State of New York in 1914. In 1921 he was made a member of the International Health Board of the Rockefeller Foundation.

The end came quickly and quietly in 1924 after he had spent a morning at the Institute, an afternoon of writing, and an evening of reading. His heart, which had been weak during the last ten years, failed. His funeral service was held at The Rockefeller Institute, a fitting honor for one who had served it so well.



## MISCELLANY

### *Birthday Greetings to Dr. W.J.V. Osterhout*

Hundreds of individuals and organizations from all parts of the world acknowledged their affection and high regard for Dr. Winthrop J. V. Osterhout, Member Emeritus of The Rockefeller Institute, on the occasion of his ninetieth birthday on August 2, 1961.

### *Faculty and Students Attend International Congresses*

An International Biophysics Congress was held in Stockholm from July 31 to August 4. Among the 1000 from 33 countries who attended were President Bronk, together with other members of the faculty and students of the Institute. Papers were presented by Alexander Mauro, Murray Rosenberg, Alexandre Rothen, and Theodore Shedlovsky of the faculty. Gertrude Perlmann attended the Congress as did Allen Edmundson, who received the Ph.D. degree at the Institute last spring, A. Tybjaerg Hansen, Sophie Fricke Fellow of The Royal Danish Academy of Sciences and Letters in the Institute last year, Peter Satir, 1961 graduate, and Lee D. Peachey, 1960 graduate.

Congress Proceedings will be published in the United States by The Rockefeller Institute Press as a supplement to the *Biophysical Journal*. They will also be published in Russian in the Soviet journal *Biofizika* and in Japanese in the journal *Progress of Theoretical Physics*.

Twelve members of the faculty and one of the 1961 graduates from the Institute participated in the Vth International Congress of Biochemistry held in Moscow, August 10-16, 1961. Miss Elena Ottolenghi, who received the degree of Doctor of Philosophy from the Institute in June, presented a paper which she had prepared in collaboration with Professor Rollin D. Hotchkiss. Members of the faculty who attended were: Vincent G. Allfrey, William H. Konigsberg, Fritz A. Lipmann, David C. Mauzerall, Alfred Mirsky, who served as Chairman of a symposium on the functional biochemistry of cell structures,

Stanford Moore, Edward Reich, Philip Siekevitz, William H. Stein, John M. Stewart, Edward L. Tatum, and Curtis A. Williams, Jr.

An invitation from the United States to hold the VIth International Congress of Biochemistry in New York City in the summer of 1964 was accepted at the Congress and later Dr. Stanford Moore was appointed Chairman of the Organizing Committee and Secretary General.

President Bronk was Honorary President of the Tenth Pacific Science Congress held in Hawaii from August 21 to September 6.

Nearly 3000 attended from 40 countries to participate in scientific sessions, to inspect visiting research vessels from several countries, and to join field trips to places of scientific interest in the Hawaiian Islands. President and Mrs. Bronk were hosts at a reception for the delegates to the Congress given by the National Academy of Sciences in the Honolulu Academy of Arts on September 1.

The National Science Board, of which Dr. Bronk is Chairman, also met in Honolulu during the Congress, and Dr. Bronk and Dr. Alan Waterman officiated at ground-breaking ceremonies for the Institute of Geophysics of the University of Hawaii, financed in part by the National Science Foundation.

### *Scientific American Articles from the Institute*

Members of the faculty and students at the Institute are frequent contributors to the *Scientific American*, which has come to be an important means by which specialists can retain some contact with investigations in fields remote from their own. Earlier this year articles were contributed by Professor William H. Stein and Professor Stanford Moore on the structure of proteins, and by two graduates of the Institute, Dr. Howard Rasmussen on the parathyroid hormone and Dr. Peter Satir on cilia.

Ten of the fourteen authors who contributed to the September issue on "The Living Cell" are variously associated with

The Rockefeller Institute. Seven are members of the faculty, including Alfred Mirsky, Vincent Allfrey, William Miller, Floyd Ratliff, H. Keffer Hartline, and two visiting professors, Jean Brachet at the Pasteur Institute and Michail Fischberg at the University of Oxford. A. A. Moscona, now at the University of Chicago, was on the faculty of the Institute in 1956 and 1957. Two others, A. L. Lehninger at the Johns Hopkins University and Daniel Mazia at the University of California, are members of the Editorial Board of the Institute's *Journal of Biophysical and Biochemical Cytology*. Illustrations in the special issue included electron micrographs by Keith Porter, George Palade, and Maria A. Rudzinska of the faculty and a full-page color reproduction of a micrograph from the Ph.D. thesis written by Suydam Osterhout, a graduate student. The November issue will contain an article on chromosomes and disease by Alexander Bearn and James L. German, III.

### *New Administrative Appointments*

Effective with the beginning of the 1961-1962 academic year new titles and changes in responsibilities of certain members of the administration were announced. Douglas M. Whitaker was named Vice President for Academic Administration and Waldo R. Flinn, Director of the Budget and Special Services. Mrs. Mabel H. Bright, formerly Administrative Assistant to the President and Assistant Secretary to the Corporation, was designated Executive Assistant to the President while retaining her office with the Corporation. Mr. Charles Petrzela, Bursar, has been named Deputy Assistant Treasurer as well as Bursar.

### *New Edition of MacInnes's Electrochemistry*

A paperbound edition of "The Principles of Electrochemistry" by Dr. Duncan A. MacInnes has been published by Dover Publications, Inc. Because of the demand for this classic, first published in 1939 by Reinhold and now out of print, Dr. MacInnes has approved the publication of a revised and corrected inexpensive edition. This is really but an interim report, Dr. MacInnes says, for he is now at work on a thoroughly revised edition.



## *Summer Biology Course for High School Students*

For the third successive season the graduate fellows planned and taught a summer course in biology for selected high school students who would be seniors or would enter college in the fall. This year two dozen were chosen by the graduate students from among more than eighty students nominated by the public, private and parochial high schools in the New York metropolitan area.

The purpose of the course is threefold: first to give the graduate students a taste of the rich satisfaction of teaching that comes from assuming full responsibility for this rewarding activity; secondly, to inspire the high school students with the adventure of research by bringing them into close contact with young scientists who are enjoying the excitement of their beginning research careers. Finally, it is hoped that as a result of their summer studies the students will find themselves better prepared to absorb more advanced courses when they enter college.

A dozen of the Institute's graduate students participated in planning and giving the course this year. An ambitious but well-integrated curriculum was planned which covered topics in chemistry, biochemistry, immunology, enzymology, genetics, general physiology, plant physiology, developmental biology, and neurophysiology. The laboratory work introduced the students to a variety of simple techniques and procedures, but it also included intricate experiments from modern biological research. For example, under the direction of Stephen Cooper and Leonard Mindich the students prepared DNA from bacteria resistant to sulfa drugs. This DNA was then used to transform other drug-sensitive bacteria into resistant strains. The significance of this critical experiment, which was first performed at The Rockefeller Institute, was the subject of an article in the *Quarterly* (Spring, 1958). Other experiments included assay of the DNA content of isolated cell nuclei, recording of the electrical activity of single nerve fibers from the eye of the horseshoe crab, isolation of gamma globulin from whole blood serum, and mating and sexuality of bacteria, a topic unknown to biology fifteen years ago. The success of the laboratory experiments depended

largely on the skill of the graduate students in planning and preparing them, but the availability of the new and enlarged student laboratories in the South Laboratory Building was of very material assistance.

The students were given library privileges at the Institute to begin reading in advance of this course, which was given from July 5th to August 18th.

At the close of the course the students were given an opportunity to judge their comprehension of the material they had studied by completing a written examination. The sophistication of the course can be judged from typical questions. One presented the experimental data recently obtained in an effort to discover which of the proposed models for 'duplication of the DNA molecule is correct and asked: "What are the three models of DNA duplication and what do they say about a) the molecular mechanism of DNA duplication and b) the results of the Meselson-Stahl experiment? What model did the experimental results suggest?" Another question invited discussion in the light of modern ideas about developmental biology of a quotation from Aristotle on the role of the gametes in development.

As is evident from questions such as these, the high school students in their work with the Graduate Fellows this summer were introduced not only to techniques and concepts, but to the mode of independent thought characteristic of science.

## *International Council of Scientific Unions*

An international biological program comparable to the International Geophysical Year in intent and scope, though on a minor scale, was among the matters discussed at the IXth General Assembly of the International Council of Scientific Unions (ICSU) in London, September 25th to 28th, 1961. Professor Paul Weiss served as Chairman of the United States delegation, President Bronk was Honorary Chairman of the delegation, and Dr. Robert F. Loeb, Trustee of the Institute, was a member.

ICSU was created after World War I with fundamental responsibilities for furthering international cooperation in science. It is comprised of fourteen Interna-

tional Unions which are concerned with many fields, from astronomy, crystallography, and scientific radio, to the physiological sciences, biochemistry, and the history and philosophy of science. Some fifty nations also adhere to the International Council of Scientific Unions through their respective national academies of science or research councils. Thus it was that the Royal Society was host to the General Assembly in London.

One of the chief items on the agenda of the IXth General Assembly was a proposal initiated by the United States for the reorganization of the future structure of ICSU, looking toward enlargement of the Bureau, major executive body of ICSU, with improved representation of adhering national members. A Committee was created to draw up a proposed structure, having regard for promoting the interests of science as a whole, preventing its fragmentation, and encouraging interdisciplinary activities. United States member of the Committee is President Bronk.

The International Biological Program was prepared by the International Union of Biological Sciences and adopted for recommendation to ICSU at the Union's Fourteenth General Assembly in Amsterdam in July at which Professor Weiss was also Chairman of the U.S. delegation. The Biological Program as accepted by ICSU will center around the theme "The Biological Basis of Man's Welfare," concentrating on purely scientific problems that can be attacked only through international cooperation. Major questions will be the effect on living communities of changes in the natural environment (induced somatic and genetic variations in man and other organisms at the individual and population levels and means for preserving biotic communities in danger of destruction or transformation) and basic research on conservation of natural resources.

## *Animal House Supervisor Honored*

Mr. George Collins, Supervisor of the Institute's Animal House, was honored for his leadership in animal care at the 12th Annual Meeting of the Animal Care Panel held in Boston on September 29, 1961. The citation was by WARDS, an organization devoted to the Welfare of Animals Used for Research in Drugs and Surgery.



LOUIS E. SILTZBACH

Panel Participant, Sixteenth International Conference on Tuberculosis, Toronto.

NORMAN R. STOLL

WHO Participant, CCTA/WHO African Conference on Ancylostomiasis, Brazzaville.

EDWARD L. TATUM

Introductory Lecturer, Symposium on Evolutionary Biochemistry, Fifth International Congress of Biochemistry, Moscow. Chairman's Address, Symposium on Microbial and Biochemical Genetics, Rome.

WILLIAM TRAGER

Introductory Lecturer, First International Conference on Protozoology, Prague.

PAUL WEISS

Chairman, Conference on Renewable Resources, National Academy of Sciences Committee on Natural Resources, Woods Hole.

Lecturer, National Institutes of Health Lecture Series in Developmental Biology, Brevard College, North Carolina.

Lecturer, International Biological Program in Cell Biology, Amsterdam.

Invitational Lecture at the International Embryology Conference, London.

Lecturer, 300th Anniversary Celebration of the birth of Antonio Vallisneri, University and Academy of Padua, Italy.

MAX A. WOODBURY

Participant, International Conference on Medical Electronics, New York.

Participant, Symposium on Applications of Computers in Biology and Medicine, Ohio State University.

Participant, Conference on Computers in Electrocardiography, Washington.

Participant, Meeting of Advisory Committee on Computers in Research, National Institutes of Health, Bethesda.

VLADIMIR K. ZWORYKIN

Participant, Fourth International Conference on Medical Electronics, New York.

### *Society Elections*

GEORGE E. PALADE

Member, National Academy of Sciences.

PHILIP SIEKEVITZ

Member, Board of Editors, *Journal of Cellular and Comparative Physiology*.

### *Other Elections and Appointments*

DETLEV W. BRONK

Trustee, Marine Biological Laboratory, Woods Hole, Mass.

JAMES G. HIRSCH

Member-at-Large and Member of Executive Committee, Division of Medical Science, National Academy of Sciences-National Research Council.

HOWARD A. SCHNEIDER

Member, Laboratory Animal Panel, Advisors to Director of National Cancer Institute.

ROBERT L. SCHOENFELD

Conference Committee, 1961 International Conference on Medical Electronics.

RICHARD E. SHOPE

Consultant, Executive Office of the President—Special Projects. Chairman, Research Advisory Council, American Cancer Society.

NORMAN R. STOLL

Consultant, WHO West African Survey of Ancylostomiasis.

EDWARD L. TATUM

Board of Scientific Directors, Roscoe B. Jackson Memorial Laboratory.

PAUL WEISS

Member, International Advisory Council on the Naples Zoological Station.

Chairman, U.S. Delegation to General Assembly of International Union of Biological Sciences, Amsterdam.

Chairman, U.S. Delegation to IXth General Assembly, International Council of Scientific Unions, London.

VLADIMIR K. ZWORYKIN

Founder President, International Federation for Medical Electronics.

### *New Appointments to the Faculty*

JORGE E. ALLENDE, Research Associate with Professor Lipmann. On leave from Instituto de Quimica Fisiologica, Escuela de Medicina, Universidad de Chile, Santiago, where he is Laboratory Group Chief.

PIERRE BIRON, Research Associate and Assistant Physician with Professor Archibald. Formerly Medical Research Fellow of the Medical Research Council of Canada.

ROMAINE R. BRUNS, Guest Investigator with Professor Palade. U. S. Public Health Service Special Research Fellow, from the University of Rochester.

LUCIEN G. CARO, Research Associate with Professor Palade. Formerly a National Science Foundation Fellow and Guest Investigator with Dr. Palade.

HAROLD C. CONKLIN, Lecturer. Associate Professor of Anthropology, Columbia University.

RICHARD L. COSTELLO, Guest Investigator with Professor Dubos. U. S. Public Health Service Postdoctoral Fellow, from the University of Kansas.

PHILIP A. D'ALESSANDRO, Assistant Professor with Associate Professor Trager. Formerly a U. S. Public Health Service Fellow and Guest Investigator with Dr. Trager.

SIWO REL DE KLOET, Research Associate with Professor Mirsky. On leave from the Van't Hoff Laboratory, University of Utrecht.

NOEL DE TERRA, Research Associate with Professor Tatum. Formerly a U. S. Public Health Service Postdoctoral Fellow and Guest Investigator with Dr. Tatum.

J. ROBERT DORFMAN, Research Associate with Professor Berlin. From The Johns Hopkins University.

JACK GOLDSTEIN, Research Associate with Professor Craig. Formerly a U. S. Public Health Service Postdoctoral Fellow and Guest Investigator with Dr. Craig.



JOSIAH B. GOULD, JR., Research Associate with Professor Edelstein. On leave from The American University, Washington, D. C., where he is an Assistant Professor in the Department of Philosophy.

FORREST C. GRIMM, Research Associate with Professor Goebel. Formerly Research Associate, Biology Division, Oak Ridge National Laboratory.

ELIZABETH J. HARFENIST, Research Associate with Professor Craig. Formerly Research Associate at The Rockefeller Institute (1949-1953).

PER CHRISTIAN HEMMER, Research Associate with Professor Kac. Formerly Research Fellow, Technical University of Norway.

JAMES S. HENDERSON, formerly a Research Associate with Dr. Rous, Member Emeritus of the Institute, has been made an Assistant Professor.

SAUL KADIN, Research Associate with Professor Woolley. From the University of Wisconsin.

BRUCE W. KNIGHT, Affiliate in Mathematics. From Cornell University.

HENRY E. KYBURG, JR., Research Associate with Professor Edelstein. Formerly Assistant Professor at Wesleyan University.

TEH-YUNG LIU, Research Associate with Professor Stein. From the University of Pittsburgh.

MICHAEL J. LYONS, Guest Investigator with Associate Professor Dan Moore. Formerly Research Associate, Section of Epidemiology, Division of Preventive Medicine, Sloan-Kettering Institute for Cancer Research.

YOSHITAKE MANO, Research Associate with Professor Lipmann. Formerly a Rockefeller Foundation Fellow and Guest Investigator with Dr. Lipmann.

MAKOTO MATSUMOTO, Research Associate with Professor Lorente de Nó. On leave from the Institute for Infectious Diseases of the University of Tokyo, where he is an Instructor.

GURSARAN W. NOTANI, Research Associate with Associate Professor Zinder. Formerly Guest Worker in the Biochemistry Division, National Chemical Laboratory, Poona, India.

P. C. PARTHASARATHY, Research Associate with Associate Professor Pelletier. Formerly Senior Research Scholar, Presidency College, Madras.

JOHN PHILIP, Research Associate and Assistant Physician with Associate Professor Bearn. Formerly with the Institute of Medical Physiology, University of Copenhagen.

COLIN S. PITTENDRIGH, Visiting Professor. Professor of Biology, Princeton University.

GEORGE POLYA, Visiting Professor. Emeritus Professor of Mathematics, Stanford University.

ELIZABETH M. PRESS, Research Associate with Associate Professor Perlmann. Lecturer, St. Mary's Hospital Medical School, London.

DAVID SABATINI, Guest Investigator with Professor Palade. Rockefeller Foundation Fellow; Research Associate, Instituto de Anatomia General y Embriologia, University of Buenos Aires.

ZULEMA J. SABATINI, Guest Investigator with Associate Professor Bearn. Formerly a Guest in the Department of Anthropology, Yale University.

LABE C. SCHEINBERG, Guest Investigator with Associate Professor Chase. Sister Elizabeth Kenny Scholar; Associate Professor, Albert Einstein College of Medicine.

PHILIPPE SENDEL, Sophie Fricke Fellow of the French Academy of Sciences. Deputy Director of the Laboratoire d'Embryologie Experimentale, Collège de France.

ALBERT L. SHEFFER, Guest Investigator with Associate Professor Chase. Postdoctoral Fellow of the U.S. Public Health Service, formerly Research Fellow of the Heart Association of Southeastern Pennsylvania.

YUTAKA TASHIRO, Guest Investigator with Professor Palade. Rockefeller Foundation Fellow, on leave from the Medical Faculty of Kyoto University where he is Assistant Professor.

BEVERLY WOLF, Research Associate with Professor Hotchkiss. Formerly a National Science Foundation Fellow and Guest Investigator with Dr. Hotchkiss.

MAX A. WOODBURY, Guest Investigator with Dr. Zworykin, Affiliate in the Institute. Research Professor of Mathematics and Research Coordinator, Research Division, College of Engineering, New York University.

### *Departures from the Faculty*

CARL BERKLEY, Research Associate with Dr. Zworykin, Affiliate in the Institute, left at the end of August.

CARLOS E. BIRO, Guest Investigator and Assistant Physician with Professor Kunkel, left in August to return to Mexico.

FILIPPO CAVALLERO, Research Associate with Professor Northrop, returned at the beginning of July to the Institute of Microbiology of the University of Genoa.

EDWARD DE MAEYER, Research Associate with Dr. Rous, Member Emeritus, left at the end of August to return to Belgium, where he will be associated with The Rega Institute in Louvain.

GÜNTER VON EHRENSTEIN, Guest Investigator with Professor Lipmann, left at the end of September to become Assistant Professor in The Johns Hopkins Medical School.

ERELA ELIZUR, Research Associate with Professor Hotchkiss, left during the summer to move to Rangoon, where her husband is with the Israeli Embassy.

STUART D. ELLIOTT, Guest Investigator with Professor Lancefield, left at the end of September to return to the University of Cambridge, where he is Assistant Director of Research in the Department of Animal Pathology.

JACK C. GEER, Guest Investigator with Associate Professor Dan Moore, left in July to join the Department of Pathology at the Louisiana State University School of Medicine in New Orleans.



- GABRIEL C. GODMAN, Guest Investigator with Professor Palade, left at the end of August to join the faculty of Columbia University College of Physicians and Surgeons.
- EIICHI HASEGAWA, Research Associate with Professor Lipmann, left during August to return to Japan, where he is associated with the Biochemical Institute of the Kyoto Prefectural University School of Medicine.
- KENNETH M. JONES, Research Associate with Professor Woolley, left at the end of August to join the faculty of the University of Leicester, where he is a Lecturer in Biochemistry.
- PETER J. LACHMANN, Guest Investigator and Assistant Physician with Professor Kunkel, left at the end of August to return to the Department of Pathology of the University of Cambridge.
- FRANCIS L. LAMBERT, Jacques Loeb Associate in Marine Biology, returned at the end of August to Union College, where he is Assistant Professor of Biology.
- MYRON C. LEDBETTER, Research Associate with Professor Porter, left at the end of September to join the Biological Laboratories at Harvard University.
- MARNY ANN LLOYD-JACOB, Research Associate with Associate Professor Csapo, left at the end of September to return to London, where she will be a Research Scholar at the Royal Free Hospital School of Medicine.
- THEODORE F. MEDREK, Research Associate with Professor McCarty, left during July to join the Microbiology Experimental Station of the University of Massachusetts as a postdoctoral fellow.
- RACHELE MAGGIO, Research Associate and formerly Guest Investigator with Professor Palade, left in September to return to Sicily, where she is Assistant Professor in the Comparative Anatomy Institute of Palermo University.
- JAMES H. MATHEWSON, Guest Investigator with Associate Professor Granick, left during the summer and has gone to the University of California at Berkeley as a Research Fellow.
- GIUSEPPE MILLONIG, Research Associate with Professor Porter, left in the middle of September to join the Biological Laboratories at Harvard University.
- YOSHIHISA MIZUNO, Research Associate with Professor Lorente de Nó, resigned at the end of July to return to Japan and resume his duties as Professor of Pharmacy in the University of Hokkaido.
- NORBERT P. NEUMANN, Research Associate with Professor Stanford Moore and Professor Stein, resigned at the end of August to join the Institute of Microbiology at Rutgers University.
- C. R. PAYLING WRIGHT, Guest Investigator with Associate Professor Bearn, returned to University College Hospital Medical School in London after spending the summer at the Institute.
- C. LENNART PHILIPSON, Sophie Fricke Fellow of The Royal Swedish Academy of Science in The Rockefeller Institute, returned to the Institute of Biology of Uppsala University.
- ANGEL O. POGO, Guest Investigator with Professor Mirsky, left during September to return to Instituto de Biología Celular, Universidad Nacional de Córdoba, Argentina.
- BEATRIZ POGO, Guest Investigator with Professor Mirsky, left during September to return to Instituto de Biología Celular, Universidad Nacional de Córdoba, Argentina.
- KEITH R. PORTER, Professor and Member, resigned to join the faculty of Harvard University.
- P. RAJAGOPALAN, Research Associate with Associate Professor Pelletier, left in September to go to Basle, Switzerland, where he is working with Ciba, A.G.
- JOHN J. REYNOLDS, Research Associate with Associate Professor Pelletier, left in September and is working in the Department of Biology at Massachusetts Institute of Technology.
- THOMAS E. SHOCKLEY, Guest Investigator with Professor Tatum, returned during September to Meharry Medical College in Nashville.
- ATUHIRO SIBATANI, Research Associate with Professor Mirsky, returned in September to Japan, where he is associated with the Cytochemistry Laboratory of Yamaguti Medical School in Ube.
- DAVID S. SMITH, Research Associate with Professor Palade, resigned during September to return to the University of Cambridge, where he has been elected to a Research Fellowship in St. Catharine's College.
- P. SZAFRANSKI, Research Associate with Professor Lipmann, returned during the summer to the Polish Academy of Sciences in Warsaw, where he is associated with the Institute of Biochemistry and Biophysics.
- ROGER E. THIES, Guest Investigator with Associate Professor Brooks, left at the end of August to join the Department of Physiology of Washington University School of Medicine in St. Louis.
- GEOFFREY ZUBAY, Research Associate with Professor Lipmann, resigned at the end of August to accept a position as Assistant Biochemist at the Brookhaven National Laboratory.

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## A L U M N I

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- WILLIAM F. ARNDT, JR., PH.D., 1959. Research Associate, Department of Bacteriology, Georgetown University Medical School.
- MARY A. BONNEVILLE, PH.D., 1961. Postdoctoral Fellow, Assistant in the Anatomy Department, Columbia University College of Physicians and Surgeons.
- JOHN J. CEBRA, PH.D., 1960. Instructor, Department of Microbiology, The University of Florida Medical School.
- ROBERT D. DEVOE, PH.D., 1961. Instructor, Department of Physiology, The Johns Hopkins University School of Medicine.
- GERALD M. EDELMAN, PH.D., 1960. Assistant Professor and Assistant Dean of Graduate Studies, The Rockefeller Institute.



- ALLEN B. EDMUNDSON, PH.D., 1961. Fellow, Medical Research Council Unit, Cavendish Laboratories, University of Cambridge.
- CHANDLER M. FULTON, PH.D., 1960. Instructor, Department of Biology, Brandeis University.
- IRVING H. GOLDBERG, PH.D., 1960. Assistant Professor, Department of Medicine and Biochemistry, University of Chicago.
- JOHNS W. HOPKINS III, PH.D., 1960. Assistant Professor, Department of Biology, Harvard University.
- JACK F. KIRSCH, PH.D., 1961. Postdoctoral Fellow, Department of Biochemistry, Brandeis University.
- SANFORD A. LACKS, PH.D., 1960. Assistant Geneticist, Biology Division, Brookhaven National Laboratory.
- STEPHEN I. MORSE, PH.D., 1960. Assistant Professor and Associate Physician, The Rockefeller Institute.
- SUYDAM OSTERHOUT, PH.D., 1959. Associate, Department of Medicine, and Instructor, Department of Microbiology, Duke University School of Medicine.
- ELENA I. R. OTTOLENGHI, PH.D., 1961. Research Fellow, Department of Medicine, New York University College of Medicine.
- LEE D. PEACHEY, PH.D., 1960. Assistant Professor, Department of Zoology, Columbia University.
- MALCOLM L. PETERSON, PH.D., 1960. Assistant Professor of Medicine, Washington University Medical School.
- HOWARD RASMUSSEN, PH.D., 1959. Associate Professor of Biochemistry, University of Wisconsin.
- MARTIN A. RIZACK, PH.D., 1960. Assistant Professor and Associate Physician, The Rockefeller Institute.
- PETER G. SATIR, PH.D., 1961. Instructor in Biology and Research Associate in Zoology, University of Chicago.
- AARON J. SHATKIN, PH.D., 1961. Commissioned Corps, U.S. Public Health Service, with Laboratory of Cellular Biology, National Institute of Allergies and Infectious Diseases.
- HAROLD J. SIMON, PH.D., 1959. Assistant Professor of Medicine and Medical Microbiology, Stanford University School of Medicine.
- ROGER E. THIES, PH.D., 1961. Instructor, Department of Physiology, Washington University School of Medicine.
- BRUCE R. VOELLER, PH.D., 1961. Research Associate, The Rockefeller Institute.
- E. FREDERICK WHEELOCK, PH.D., 1961. Assistant Professor, Department of Preventive Medicine, Western Reserve Medical School.