DISCUSSION

A WRITER in *Science Progress*[1] some years ago expressed the opinion that the pretense that the man of science is above cash in any form is perhaps the worst form of scientific snobbery. "In science as in other things," said this writer, "the proper and honest procedure is to pay for work done." This form of scientific snobbery, now rapidly and most fortunately disappearing, did not fool the clear-headed among business men. The late E. W. Scripps, one of the founders of the Scripps chain of newspapers and of *Science Service,* regarded scientists who willingly and unnecessarily labored on a miserable stipend as economic imbeciles. A biologist might have said that such scientists were not well adapted to their environment. Adaptation is likely to be the key to survival of scientists as well as other organisms.

It is common knowledge that scientific research in a single century has outstripped the experience of ages. Dr. Cattell is authority for the statement that science has increased wealth fourfold, an assertion very easy to believe. The same leader points out that democracy is dependent on science.

The "fiat currency of honor and position" does not pay the bills, even for personal and official scientific advancement. Peixotto's studies at California indicate that the average expenditure of ninety-six faculty men for professional advancement was only 1.3 per cent. of salary, and twenty-two of them spent less than one half of one per cent. Henderson in a similar study at Yale found that two thirds of the faculty had to supplement their regular university salary by outside work, and that in some instances the professors could not even afford to send their children to a college of the grade in which they themselves were teaching.

It is perhaps unfortunate that the world does not "seek out its benefactors and voluntarily offer them the reward to which they are entitled." Breuer[2] rightly says, "The physician's primary duty is to provide a comfortable existence for himself and his dependents. That comes even before his duty to his fellow man for the simple reason that he can not do his fellow man much real good unless he is properly equipped."

According to Professor Compton there was in 1927 no university in America, land of wealth and opportunity, which was able to offer, dollar for dollar, a salary equal to salaries in universities even in war-ridden Germany.

J. S. Ames, now president of the Johns Hopkins University, asserted,[3] "The scientific men of America have suffered greatly at the hands of the people." The significant statistics presented by Professor Noyes at the symposium on the salary question, arranged by the Committee of One Hundred on Scientific Research of the American Association for the Advancement of Science at Des Moines, Iowa, December 31, 1929, amply substantiate President Ames' statement. To quote Ames further: "The time has come for America to recognize the usefulness of the scholar, the thinker, the investigator of science. All the other countries of the world have done so long since."

SCIENCE[4] quotes the British Committee of the Privy Council for Scientific and Industrial Research to the effect that all the important advances which recent generations have made in industrial science, from wireless telegraphy to synthetic indigo, have been the direct outcome of discoveries made by "pure" science conducting research solely for its own sake. The committee also emphasizes the necessity for a let-up on competition, and for more cooperation, and concludes that "it is not an accident that the firms which have been most conspicuous in the world for their scientific advances—such as the Carl Zeiss firm of Jena—have also been most conspicuous for enlightened and generous conditions of employment."

The importance of science to civilization requires that intellectual ability of the highest order should be recruited, developed and devoted to research—ability certainly equal or superior to that of the foremost captains of industry. The experience and testimony of our leaders indicate unequivocally that there is a high degree of correlation between salaries and standards of performance.

In 1926 Professor William MacDonald said, "We might have had the needed endowments long ago if intellectual workers, recognizing their solidarity, had unitedly asked for them; we can have them now whenever the workers are prepared to use them and ask for them with common voice."

There used to be an idea among some scientists, now happily dissipating, that organization for economic advancement would hamper individuality, would tend to mediocrity of performance. The accumulating experience of actors, physicians, professors, lawyers and engineers unmistakably indicates that this is not the case. On the contrary, organization, by providing the benefits of contact, united effort, more adequate salaries, superior facilities for work and improved status, gives freer play to the expression of individual abilities and tends to strengthen all inventive and investigative efforts.

[1] Quoted in SCIENCE, May 4, 1917, pp. 433–435.
[2] *Medical Economics,* April, 1924, pp. 17–19.
[3] SCIENCE, October 5, 1918, pp. 401–410.
[4] November 3, 1916, pp. 641–642.

Scientific men are working together increasingly along economic lines, not to control anything or anybody, but to secure that status which will enable research men to do their best for society.

The Committee of One Hundred on Scientific Research of the American Association for the Advancement of Science is doing a notable service to all scientific men and to the community. Special credit is due to President Millikan, and to Messrs. Cattell, Kellogg, Pupin, Livingston and True, members of the Executive Committee of the Committee of One Hundred. The efforts of the council and the Executive Committee of the association in supporting the work of this committee also deserve appreciation. Most of the work of the Committee of One Hundred has fallen on Dr. Rodney H. True, head of the department of botany and director of the Botanic Garden at the University of Pennsylvania, whose tireless efforts as secretary of the committee are well known to those who have worked close to him.

The work of the Committee of One Hundred has been done in the spirit of a statement made by Sir John Russell referring to research in agriculture:

> The past has been rich in the joys and thrills of discovery; but it has taught this lesson: that discoveries in applied science inevitably follow advances in pure science. If we would improve our agriculture the surest way is to increase knowledge of the soil, the plant and the animal. Empirical methods, it is true, have often given advances in the past, but they are slow, hesitant and uncertain; dependent on accident. Exact knowledge is the only sure basis for improvements; encourage, therefore, those among you who are striving to win it.

WALTER P. TAYLOR
NATIONAL FEDERATION OF FEDERAL EMPLOYEES

OBITUARY

RECENT DEATHS

DR. WILLIAM E. STORY, professor of mathematics at Clark University from its foundation in 1889 to 1921, and since then professor emeritus, died on April 11. He would have been eighty years old on April 29.

DR. FRANK HAIMBACH, assistant curator of entomology at the Academy of Natural Sciences, Philadelphia, has died at the age of seventy years.

DR. FRANZ C. WALDECKER, director of chemical research at the Winthrop Chemical Company, Inc., and the H. A. Metz Laboratories, Inc., died recently in London. He was forty-eight years old.

PROFESSOR JOHN OLIVER ARNOLD, F.R.S., emeritus professor of metallurgy in the University of Sheffield, died on March 27 in his seventy-third year. He was a pioneer in work on vanadium and molybdenum.

THE death at the age of sixty-four years is announced of Professor R. Zsigmondy, holder of the Nobel prize for 1926, professor of chemistry at the University of Göttingen.

THE death is announced of Dr. Hermann von Ihering, professor of zoology in the University of Giessen.

DR. KATSUSABURO YAMAGIWA, professor of pathology at the Tokyo Imperial University, Japan, died on March 2. He specialized in the experimental study of cancer. The production of tar cancer in rabbits was one of his outstanding accomplishments.

MEMORIALS

A TABLET in memory of Bashford Dean was unveiled on April 14 in the hall of armor at the Metropolitan Museum of Art. The tablet is the gift of the sculptor Daniel Chester French. Dr. Dean was at the time of his death honorary curator of arms and armor at the Metropolitan Museum as well as honorary curator in the American Museum of Natural History and professor of zoology at Columbia University.

THE *Journal* of the American Medical Association reports that the physicians at Fukushima, the native place of the late Dr. Hideyo Noguchi, have erected in his honor a stone monument in the garden of his old house on Lake Inawashiro, and the house has been bought to be kept forever in his memory. A library will be established near the house.

The British Medical Journal writes editorially: "Jean Baptiste Lamarck, soldier, biologist and philosopher, was born in Picardy in 1744, and died in 1829. His remains lie buried in an anonymous grave in Montparnasse cemetery, Paris, but until 1914 his native country had a memorial of him in the house where he was born, the home of his ancestors at Bazentin, a small village of the Somme, not far from Albert. During the war years Bazentin lay within the war zone, and now what was Lamarck's house is but a heap of ruins. The Société Linnéenne du Nord de la France has resolved to raise a fund to be used for the purpose of erecting on the site of the old house a memorial worthy of Lamarck's greatness. This memorial will stand in the middle of a garden in which the plants grown will be the botanical species specially studied by Lamarck, or named after him by other botanists. Lamarck belongs not only to his own province and country, but to all countries whose cul-