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IN HONOR OF PROFESSOR EINSTEIN[1]

GREETING ON BEHALF OF AMERICAN SCIENTISTS BY DR. KARL T. COMPTON, PRESIDENT OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

IT is a pleasure for me to have the privilege of greeting Professor Einstein on behalf of American scientists. There is first the pleasure of renewing a personal contact made with Professor Einstein on the occasion of his first visit to America shortly after the war, when he delivered a series of lectures on relativity at Princeton University. Going farther back, there is a second personal connection which Professor Einstein knows nothing about, but which I venture to say has been duplicated by many of my fellow American scientists in some such way as the following.

Some years ago, when my fiancée was debating with herself as to whether she was doing wisely in joining me in the great adventure, we were being entertained in the home of her most admired and respected friend, the pastor of her Methodist church. After dinner this man, who was by nature a poet rather than a scientist, asked me to explain to him in simple language Einstein's theory of relativity, and listened with apparently absorbed interest to my efforts to present this in non-technical language. The next morning he said to my fiancée, "I approve of your young man in all but one respect: he has no sense of humor. I asked him to explain to me Einstein's theory of relativity and he really tried to do it. You are taking a long chance in marrying a man who has no sense of humor." So I suspect every American physicist or mathematician has at one time or another been in a quandary as to whether he should engage upon the hopeless task of an attempted explanation, or whether he should find wisdom in cowardice by stating that he

[1] Address at a dinner under the auspices of the American Friends of the Hebrew University in Palestine, given at the Hotel Commodore, New York City, on March 15. Besides Professor Einstein, Dr. Compton and Dr. Shapley, the speakers included Dr. O. C. Kiep, German consul general; Dr. Solomon Lowenstein, executive director of the Federation for the Support of Jewish Philanthropic Societies in New York City; James Marshall, a vice-president of the American Friends of the Hebrew University in Palestine, and Dr. Nathan Ratnoff, director of Beth Israel Hospital, in New York City. Sol M. Stroock, chairman of the board of the Jewish Theological Seminary, presided. Professor Einstein spoke in German, his address being translated at its close.

did not understand the theory himself, which was very likely to be true.

The third reason for personal gratification lies in the fact that my first real research work in physics, which was my doctor's thesis at Princeton, constituted, I believe, the first reasonably conclusive experimental proof of the famous Einstein photoelectric equation and through it the correlation of the frequency of light, the contact potential characteristic of any metal illuminated by the light, and the kinetic energy of electrons ejected from the metal under the influence of the light. It was this work which was refined in certain particulars by Millikan four years later to give the most accurate experimental determination of that famous constant of modern physics known as "Planck's constant."

Professor Einstein's interpretation of the rôle of Planck's constant in phenomena which involve the interaction of radiation and matter has been the real foundation of all the marvelous development in spectroscopy and atomic structure, which is the outstanding achievement of physical science in the past twenty years—perhaps because big things are more spectacular than little things, or perhaps because people like to talk and to hear about things which they sense vaguely but do not understand, or perhaps for some other reason which I can not analyze, the public fancy has been taken much more with Professor Einstein's contributions to the theory of relativity than with his contributions to atomic physics and radiation. While the former contributions have been far more extensive, I believe that public opinion should not lose sight of the fact that Professor Einstein's basic contributions to the development of the quantum theory have probably been of even greater influence in effecting the development of the physical sciences than his great general theory of relativity.

Perhaps any attempt to estimate the relative importance of these two great contributions which Professor Einstein has made to twentieth century science is futile because the estimate may be different if gaged on the minute scale of the instantaneous condition of an atom or by the enormous scale of the universe as it is extending through all the ages. This contrast, however, will at least serve to emphasize the great range of interest and of application of the work of Professor Einstein.

It is needless for me to say that all American scientists are delighted with the new arrangement under which Professor Einstein will be regularly one of us. We are delighted not only because of the prestige which his presence will give to our institutions, but also because of the interest and stimulation which his presence will arouse in our young American scientists, who will see in him an ideal which unconsciously beckons them to "go thou and do likewise." Finally, we are delighted with the new arrangement because those of us who have had the privilege of coming to know Professor Einstein personally appreciate him as a person and are glad on personal grounds to have him as an associate. In this welcome we include also the most effective of all his colleagues, Frau Einstein.

ADDRESS ON "THE COSMIC PARADE" BY DR. HARLOW SHAPLEY, DIRECTOR OF THE HARVARD COLLEGE OBSERVATORY

I AM requested to describe the universe of which our guest of honor is a part and concerning which he busies himself at times. I am asked to tell the story of a world that contains electrons, galaxies, space, comets, politics, slush and after-dinner speakers. I am to describe a universe that spreads throughout more than a million, trillion, trillion, cubic light years, that has existed for some thousands or millions of millions of years—and I have for this descriptive job ten minutes, minus the time taken by the introducer. You should pardon me if here and there I am rather brief with minor details. Indeed, I shall consider chiefly the grosser cosmos and not bother much with the intricacies of the atom or the private life of electrons.

As interpreters of the world we do not know how good we are, nor how bad. We must leave to future generations to say just where we went wrong. I suspect that if any attention whatever is paid to the science and scientists of the first third of the twentieth century it will be to the fundamental deductions and to the pioneer observations (crude as they are). I suspect that we are too near the front in this battle of nature's secrets against test-tubes, spectroscopes and mathematical analysis to realize how much we pursue current fads, how enthusiastically we over-interpret fragmentary observations of fragments. But even at this close range we can see the oncoming mortality of practically all current theories, both of the microcosmos and of the macrocosmos. There is an over-population of hypotheses; they crowd and cancel one another. New observations add to the slaughter. Within the past year, almost accidentally, we stumble upon fundamentals like the neutron and the positron, entities that had not been explicitly included in the atomic models and pictures of the preceding years. But brave hypotheses are necessary to guide, transiently; the observations stand for a while; the good measures, in fact, are essentially permanent; and the enthusiasm back of it all, the will to know and the willingness to fumble as we learn to know—they are eternal.

Leaving the fascinating though uncertain world of the atom and the molecule, let us accept matter as