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"NEW HORIZONS IN MEDICAL SCIENCE"

ADDRESS

BY

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On the white walls of the Riverside Church in New York there are carved the figures of famous saints, philosophers, kings, scientists and other great men of the ages. On one panel the genius of science over a span of about 2,500 years is enshrined. It contains fourteen figures starting with Hippocrates who died about 370 B. C. and ending with Albert Einstein who died in 1955.

It is not surprising that this notable tribute was paid to Albert Einstein. Years ago, when the church was being built, Dr. Harry Emerson Fosdick invited leading scientists of the nation to select fourteen outstanding scientific leaders. As you might expect, there was a great disparity in the selections. But the name of Albert Einstein was not missing on anyone's list. His was a unanimous choice.

Yet when Einstein first published his conceptions of time and space they were attacked as the fantasies of a dreamer. For Einstein severely shook theories of scientists and philosophers which had prevailed for 2,000 years. As a result, his critics promptly claimed that he had merely torn a page out of Jules Verne or H. G. Wells. Moreover, his startling theory of relativity was lightly dismissed by the man on the street as pure theory unrelated to the realities of life. But Einstein was a practical realist. It was upon his urging that our Government was stirred to action in developing the atomic bomb which helped end the war of aggression started by the Nazis.

As any man of sensitive feeling and conscience, Einstein had intense inner conflicts which often tortured him. He was always apprehensive that the tools which he had fashioned for the good of

humanity might some day, when placed in irresponsible hands, destroy it. And so, to save civilization from this fate, he devoted the last years of his full life searching for ways by which man's knowledge of the atom could be dedicated to peace and to the betterment of the human race.

Einstein well knew that peace could not be secured merely through pious protestations against war. As an enlightened scientist he had a keen understanding and appreciation for an orderly society. He realized that it is only when liberty is regulated by law, that the liberty of society is preserved for all the people; and this was true not only within a country but equally well among nations. As he said: "Mankind can be saved only if a supranational system, based on law, would be created to eliminate for good the methods of brute force."

When we assess his worth, it is not so much what Einstein has done for others that counts today, but rather what others have done because of him and the power of his example. Out of his life radiated a unique spirit that inspired the world of science to reap greater glory. Yet he knew that the scholar must not live for science alone--but for all humanity. His integrity and his wisdom reached people throughout the world who sought to identify themselves with his deep yearning to end all war, to uplift the spirit and dignity of the individual and to establish justice for all people.

It was his firm belief, based on bitter experience under the Nazis, that if freedom is to survive it must be primary in our hearts, in our minds, and in our conduct; and that it can not run second best

to hate, intolerance, fear or hysteria. He was ever-ready to champion the rights of the weak, the defenseless, the poor--to raise his voice against oppression. His was a faith that there is no better time to defend liberty than the present--that to put off the defense of it to the future would be too late.

He was also possessed of rich wit and humor. Those of us who have seen Einstein in his pullover sweater, baggy slacks and knitted stocking hat know how unconcerned he was with clothes. Speaking of them he would say: "It would be a sad situation if the bag was better than the meat wrapped in it."

Once asked by his secretary to explain his theory of relativity in simple language so she in turn could explain it to interviewers, he said:

> "When you sit with a nice girl for two hours you think it's only a minute. But when you sit on a hot stove for a minute you think it's two hours. That's relativity."

Still another anecdote explaining relativity was told by him by way of a parable.

> "I was once walking in the country on a hot day with a blind friend and I said I could do with a drink of milk.
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> "'Milk?'" said my blind friend. "Drink I know, but what is milk?
>
> "'A white liquid,' I replied.
>
> "'Liquid, I know,' said the blind man, 'but what is white?'

"'The color of a Swan's feathers.'

"'Feathers I know,' said the man, 'What is a Swan?

"'A bird with a crooked neck.'

"'Neck, I know--what, what is crooked?'"

Einstein took his blind friend's arm and straightened it. "That's straight," he said. Then he bent it at the elbows, "and that is crooked." "'Ah,' cried the blind man, 'now I know what you mean by milk!'"

Self-denial and humility marked his simple life. When it was first suggested that he come to the Institute of Advanced Study, the question of salary came up. Although offered an attractive sum, Einstein felt that $3,000 a year was enough, and even inquired if he could "live on less." To him it was compensation enough to be engaged in work he enjoyed which could be of service to society. "The bitter and the sweet" he said, "come from the outside, the hard from within from one's own efforts. For the most part I do the thing which my own nature drives me to. It is embarrassing to earn so much respect and love for it." And it was with this humble feeling, not of accepting happiness as a matter of course, but of giving something in exchange for it, that Einstein donated all the proceeds of his Nobel Prize to charity.

His abiding belief in the brotherhood of man was expressed by his teaching that one should try not to become "a man of success but rather try to become a man of value." For the successful man today "gets more out of life than he puts in," while "the man of value will give more than he receives."

Thus you see that through its many facets, Albert Einstein's way of life is a lesson for all of us to follow in our quest for intellectual insight and moral and spiritual improvement.

In this new medical school, named after Albert Einstein, a worthy memorial is being built which is fully in keeping with his fine character and noble purpose in life. Its faculty will be recruited from leading scholars and teachers in universities, medical schools and hospitals throughout the nation. It will serve both local residents and those from other states. Its doors will be open to those students who meet highest scholastic requirements from all parts of the country, regardless of race, creed or nationality. With this single standard, it will be administered in the loftiest spirit possible in a free nation. It cannot help but fulfill the fondest hopes of its founders for the far-reaching aims of medicine and the ever-increasing needs of the people.

From this cathedral of medical learning will rise men and women who will walk the path that Koch, Lister, Pasteur, Jenner, Reed, Salk and other great medical scientists have taken in aid of humanity. As students of a dynamic science such as medicine, they will be conditioned to accept new ideas; reject old convictions; shun hardened and rigid traditions; and be of service to their fellowmen.

Many will experience their share of failure and utter discouragement as we all do in life. Many will be met with criticism, skeptism and hostility as they seek new solutions for baffling, frustrating and frightening disease. But when they recall the

many apparent failures of the past which turned into glorious medical history, they will be filled with renewed hope and faith. Even if they fall short of their mark of full success, they will have the inner satisfaction of knowing that their minute contribution may someday furnish the missing link that will be forged by others who follow. This has been the history and experience of all medical science. Many are the unsung, unheralded and unknown medical scientists whose patient toil made possible the achievements that we hail and enjoy today. If we are to survive as a strong nation, we must never permit this chain of well qualified medical scientists to be broken either by lack of medical schools or untrained teachers or inadequate equipment or unqualified students.

The Albert Einstein College of Medicine of Yeshiva University is also a monument to our way of life--of free enterprise and private initiative. It has been established and will be maintained through the vision and generosity of many public spirited citizens--some with ample means, but mainly by those of modest means. All mankind will benefit from this unselfish and widespread support by people to whom the spirit and ideals of free and unhampered medical science mean so much.

How reassuring it is that through united efforts of private and public resources, medical science may soon reach new heights; conquer new fields; pave the way for new frontiers of health not only in this country but everywhere in the world--and how much it will mean that each of you will have shared in bringing to fruition the great miracles of mankind.

In addition to physicians and surgeons, through the University's

portals will also step pathologists, biochemists, physiologists, bacteriologists, and others whose combined services are indispensable today for effective medical treatment. The story of penicillin and other antibiotic agents that are so destructive of bacterial life; the discovery of atabrine when our sources of quinine were cut off during World War II; the process by which the Red Cross blood banks are safely kept to save lives; the use of radiosotopes for treating thyroid disorders and locating blood clots; and most recently the Salk vaccine, are merely a few examples of many which illustrate how well coordinated medical science must be in order to cope with every emergency involving our health--and what great promise it holds for our future.

There are still endless, exciting horizons to follow, explore, and track down in the fields of medicine, surgery and public health. There is much to be done in combatting the common cold, cancer, heart disorders, disease of the nervous system, skin disease. There is even more to be done in helping retarded and crippled children; in furnishing humane treatment for the insane and narcotic addicts--and these are merely a few of the many problems which still stump medical science. The more we learn about every aspect of our lives, the more easily and longer will we postpone long-suffering illness and death itself. Who of us will not take a raincheck on these? Yet it can only be accomplished through planned, integrated and fundamental research such as is carried on today in any well administered medical university.

The federal government is doing its share in many ways. The Public Health Service of the United States is constantly engaged

in many projects which are helping to break the barrier that stands between disease, and good health and a happy life for our people. During the last year, for example, its research grant programs alone totaled about 38 million dollars and covered projects dealing with cancer, mental health, heart, dental care, arthritis, neurological diseases, blindness and microbiology. The grants were passed on by impartial experts in the field of medical science. They were made to research centers throughout the country free from geographical or other bias with this primary object--to improve the nation's health through the acquisition of new knowledge in all sciences related to health. Consistent with life in a free nation, those scientists who engaged in these programs enjoyed relatively complete freedom to experiment without direction or interference. They were free to publish as they saw fit and to revise their research if they discovered new and more promising leads. These unrestricted and unregimented procedures, as experience has taught, are conducive to maximum progress in the field of medical science.

By supplementing local support of medical research, the Public Health Service has also increased the usefulness of existing manpower and facilities; has helped to enlarge the reservoir of trained scientists; has stimulated research in neglected fields, particularly in chronic diseases; and has provided research opportunities for many individuals who would otherwise have been denied the chance to serve humanity.

Hundreds of research projects conducted by private institutions in medicine and biochemistry are also being backed by the Atomic Energy Commission. Many more are being handled under careful

security safeguards in laboratories under the direct supervision of the Atomic Energy Commission.

One of the principal problems medical science faces today is the crying shortage of men and women equipped with adequate medical training. It has been noted that presently we are graduating only one new physician for each 30,000 people. This means that unless we enlarge our training facilities, by 1960 this country will critically require 30,000 more physicians. This shortage will deprive many of our citizens of adequate medical care on a normal basis; it may be fatal both for civilians and those in the armed service in event of contagious epidemics.

We must therefore lose no time in giving every encouragement to competent young men and women, through scholarships and other means, to engage in the practice of medicine. We must keep on building additional medical schools particularly in areas where they do not suffice to meet the need. We must try to provide greater opportunity for post-graduate study and work so that our physicians are fully trained before they engage in private or public practice. We must find ways of attracting medical doctors to rural and other communities where there is a marked shortage of them. We must do everything possible to promote and maintain highest ethical standards of medical and surgical practice so that public confidence in the medical profession is never impaired. By these means we will furnish every incentive by which to promote the science of medicine everywhere in the nation.

The Einstein College of Medicine in New York City and its adjacent state and city hospitals point the way for private citizens and other cities and states to follow in achieving these aims.

We in the legal profession have a special concern in the further development of medical science--in addition to the fact that on occasion we turn out to be patients. Mr. Justice Cardozo once said, medicine and the law are "united in a common quest, the quest for the rule of order, the rule of health and of disease, to which for individuals as for society we give the name of law."

Our courts constantly rely on medical and other scientists in a great variety of cases where the core of the problem is a question of scientific fact. There are few negligence cases involving injury to the person which do not call for expert testimony from the medical profession. The same is true in other cases such as homicide, commitment of persons who are insane, or controversies for insurance policies based on death--and even where the question is when a beverage is intoxicating or a person intoxicated.

It is in the field of criminology particularly that scientific and medical knowledge are playing a more important role each year.

It is of essential importance at the threshold of the case--in the investigation of the crime and in determining the criminal responsibility of the accused. Use of scientific laboratories has again and again proven to be of invaluable aid in the detection of persons guilty of crime and in saving innocent persons who are wrongfully accused. The Department of Justice has a most efficient laboratory service under the supervision of the Federal Bureau of Investigation. Through its specialized staff of experts, analysis

of blood or a single human hair or the thread of a fabric or a footprint has often turned out to be the decisive factor in bringing to justice a criminal who might otherwise have continued to prey on society. There are other highly competent laboratories in various parts of the country, including New York, Chicago, St. Louis and Los Angeles, which are demonstrating every day how to combat crime with scientific minds.

Medical science is of equal importance during the trial of the case--and we read every day how much weight our courts now give to medical opinion in passing sentence after judgment.

Another vital area where law and medicine meet on common ground is in the field of public health enforcement. And it is in this field that we are reminded once again that our liberties under the Constitution are not absolute.

For example, upon a physician's recommendation the Federal Government may protect against the spread of disease by quarantine of a person on a ship although he may appear to be free of disease himself. Reasonable restrictions are imposed on manufacturers and sellers, scientific tests made to insure purity or safety, and property confiscated or condemned in order to protect the public from contaminated foods and harmful drugs. It is a valid exercise of police power for a state to require compulsory vaccination during an epidemic.

In these cases, the age-old conflict arises between the right of a community in self-defense to protect itself against disease which threatens the safety of all its members, and the right of the individual to do what he thinks best for his own

self-interest. In sustaining a state law for compulsory vaccination of school children, the Supreme Court said: "The liberty secured by the Consitution" does not confer "the absolute right in each person to be, at all times and in all circumstances, wholly freed from restraint". Pointing out that there are manifold restraints to which each person is necessarily subject for the common good, the Court declared that "On any other basis organized society could not exist with safety to its members. Society based on the rule that each one is a law unto himself would soon be confronted with disorder and anarchy." And anarchy, we know, is not law but its destruction.

What was said in this case applies as well to the possession and enjoyment of all rights. They are subject to reasonable conditions which governmental authority deems "essential to the safety, health, peace, good order and morals of the community."

Incidentally, before I close I should perhaps point out that both professions suffer also from a common frailty--the knack of being obtuse and unintelligible. Only too often do we forget that language was intended to communicate ideas not only between ourselves but to everyone. For government lawyers, particularly there is still much room for improvement in writing regulations and rules in simple language--yes, so that even judges and lawyers can understand them. Indeed, it is a commonplace expression when one cannot understand something, to say "Stop talking like a lawyer." But the medical profession runs neck and neck with us in this respect. One example will suffice:

A physician testified at a trial as to the physical condition of the plaintiff in an assault and battery case. He stated that his patient "was suffering from a severe contusion of the infracrbital integuments with marked extravasation of blood and ecchymosis of the surrounding cuticular tissue which was in a highly tumefied state." Completely bewildered the judge asked if the doctor could explain what he said in simple terms so that it would be clear to everyone.

"Yes", your honor, the witness replied without hesitation: "What I just said means a 'black eye'".

Finally, lawyers, medical doctors and scientists have a common responsibility to society above and beyond their particular calling.

First, as members of honored professions which are so concerned with the fate of the individual, each one of us has the obligation of safeguarding the citadel of his liberty. Any breach in it anywhere imperils the liberty of everyone everywhere. Thus we may often be required to serve a man, regardless of the popularity or unpopularity of the cause, and regardless of public clamor or passion.

Second, we must be willing to give of ourselves, our time and attention to the affairs of local self-government. By thus sharpening our own sense of responsibility, we assure more efficient and responsive administration of public affairs by our representatives at state and national levels.

Third, by our continued interest and vigilance in government affairs and by speaking out against oppression or wrong, we act as self-insurers against tyranny and abuse in public office wherever it may exist.

And finally, as free men in a free country, all of us must rise to every opportunity to serve our community, our state, our nation, and the distressed peoples of other countries. By our just deeds and generous acts, we will preserve our great traditions, our precious liberty and our lofty ideals for the benefit of all mankind.