

# Appendix

## NOTICE

The last issue of the daily Congressional Record for the second session of the Eighty-seventh Congress will be published not later than Friday, November 2, 1962. It is requested that copy and proofs of speeches withheld for revision, or extensions of remarks as authorized by either House, be submitted to the Government Printing Office or to the Congressional Record Clerk, Statuary Hall, Capitol, before that date.

By order of the Joint Committee on Printing.

CARL HAYDEN, Chairman.

### An Important Phase of World Medical Research: Let's Compete With U.S.S.R. in Research on Reversibility of Death

#### EXTENSION OF REMARKS OF

#### HON. HUBERT H. HUMPHREY

OF MINNESOTA

IN THE SENATE OF THE UNITED STATES

Saturday, October 13, 1962

Mr. HUMPHREY. Mr. President, the 87th Congress has enacted a number of landmark bills for the strengthening of American and international medical research.

However, at this time, I should like to comment upon one phase of medical research, which has not, unfortunately, received sufficient administrative attention by Federal agencies.

Because the hour is late in this session, I will not presume to take the time of the Senate to describe this subject in great detail.

#### LIFE AND DEATH—THE UNIVERSAL INTEREST

I do, however, want to state that it is one of the most important of all phases of medical research.

Why? Because it concerns the most universal interest of man; namely: the prolongation of human life, the postponement of death, and, yes, perhaps the greatest scientific frontier—the reversibility of death.

In my judgment, on this supreme scientific issue, Federal agencies have, unfortunately, proceeded to date in a relatively unimaginative, uncoordinated, unplanned, and haphazard manner.

Death does not "take a holiday."

But Federal agencies often seem to act as if they could take "all the time in the world" to study death—and in the most casual, "scatter-shot" way.

#### PROFESSOR NEGOVSKI'S INSTITUTE IN MOSCOW

Just 4 years ago, in Moscow, in early December 1958, I visited the Institute of Physical Resuscitation, headed by Prof. V. A. Negovskii.

There, I saw his successful animal experiments on the reversibility of death, that is, on the revival of "clinically dead" animals through massive electric shocks.

When I returned to our country, I reported publicly on his experiments.

Since then, other observers have seen this distinguished Soviet academician's expanding work.

#### SOVIET FANFARE ON THEIR ACHIEVEMENTS

The Soviets are never ones to lose sight of the propaganda value of any advances—medical or otherwise.

All over the world, the Soviet Union has, therefore, told the story of the revival of "dead" hearts.

Yet, it is American scientists who have, I believe, contributed some of the most significant pages of scientific achievement on this subject. Not long ago, I met with one of the great American medical pioneers in this field. I refer to Prof. Claude Beck, professor of cardiovascular surgery, Western Reserve University, Cleveland, Ohio.

I saw a motion picture showing his and his colleagues' scientific work. It was tremendously impressive to me, as a layman, as well as to professionals who were present.

Members of the Department of the Army were on hand, at my invitation. I am delighted to say that Army medical research has demonstrated exemplary interest in this work, particularly on such phases as resuscitation techniques which can be performed in the field.

This is not a task without hazard, but it is one worthy of the most intensive experimentation and evaluation.

#### NIH SUPPORT LACKS COORDINATION

Earlier I had communicated with the National Institutes of Health as regards present NIH support of the study of what might be called the physiology of death.

NIH does support numerous important investigations, both in basic and applied research on death processes.

There is, however, lacking a quality which I, for one, have, in all frankness,

repeatedly found wanting both here and in other areas of NIH support.

I refer to the missing ingredient of coordination, of integration, of evaluation, of systematic pooling of interdisciplinary knowledge under an emerging new category and by strong teams.

#### TRUE MEDICAL LEADERSHIP IS NOT PASSIVE

In all candor, I say that the National Institutes of Health have the idea that they discharge their obligations when they merely hand out money to a variety of good investigators.

If, for example, 20 investigators apply for money, if a study section and a grant council approve 10 or 15 of the studies, if the studies proceed, then NIH tends to rest content.

I, for one, do not feel satisfied with this limited, passive approach.

The giving out of money is not the key to leadership in medical research. By contrast, the launching of a coordinated attack, the establishment of specialized centers, the mobilization of every scrap of available United States and foreign knowledge and its definitive evaluation—these are acts of leadership.

#### ESTABLISH CENTERS FOR STUDY OF DEATH

What do I urge, therefore?

I urge establishment under NIH support of specialized centers or institutes on the physiology of death, on resuscitation and on related topics.

I urge that the United States compete with the U.S.S.R. in bold research toward at least partial conquest of death.

Already our scientists and Russian scientists are cooperating in categorical studies of heart ailments, cancer and other diseases.

Now, let us recognize that a "new" category has emerged—the oldest category in the world—but one which commands our newest efforts—the category of death, itself.

Death of the heart, death of the lungs, death of the brain—death of other vital organs—the timing, the sequence, the interrelationships—these are the subjects worthy of the greatest scientific examination in history.

Perfectly good hearts do die. Why? What can be done to revive the good hearts and restore precious years of life? This is not an academic question. It is already being done—has long been done by Professor Beck and others.

No man can now foresee what a greatly enlarged scientific drive could achieve if we were to launch it. Death will remain the universal lot of man. But a decade or two from now, we may look back to present-day attitudes toward death as "primitive" and "medieval," in the same way we now look back upon a once-dreaded killer like tuberculosis.

A7837

WORDS TO BE REPRINTED IN THE RECORD

I have selected certain items which illustrate, I believe, the challenge confronting mankind.

One is an introduction to an article in the August 25, 1962, issue of Saturday Review, as written by John Lear, science editor.

The article itself comprised quotations from Professor Negovskii's latest book.

The second item is the preface to Professor Negovskii's book, as written by Professor Beck. Mr. Lear's brief introduction to Professor Beck's comments is also included.

The third item consists of a supplementary memorandum which I had invited from Professor Beck on this subject.

I ask unanimous consent that the items be printed at this point in the Record.

There being no objection, the items were ordered to be printed in the Record as follows:

THE REVERSAL OF DEATH

NEW FRONTIER IN SOVIET SCIENCE?

(EDITOR'S NOTE.—Almost unknown to the American people, there has been taking place in recent years, in various parts of the world, including this country, a revolutionary shift in the approach to the study of death. To the old and established ways of preventing death has been added the possibility of reversing death, and windows have been opened onto understanding of the infinite metaphysics involved in the process of dying. Although some of the very first steps in this fundamental innovation were taken in the United States, medical researchers of the Soviet Union have dominated this rapidly expanding frontier. Their work is known to American specialists who have visited modern Russia and to those who can read the Russian experimental literature in the original. But few physicians and even fewer laymen in this country have had any access to information about this historic development. At least, during this month of August 1962, there is scheduled for publication here in English, a summary report of Russian research and accomplishment in resuscitation of animals and humans. Written by a distinguished member of the Academy of Medical Sciences of the U.S.S.R., Prof. V. A. Negovskii, the manuscript will appear in book form under the colophon of Plenum Press, Inc. Its title: "Resuscitation and Artificial Hypothermia." The gist of Professor Negovskii's message is that knowledge about the heart and lungs has now reached the point where a stopped heart can be restarted almost at will. The remaining problem in reversal of death is simply that the cerebral cortex, the familiar "gray matter" of the brain, the ultimate control of man's behavior as a civilized being, can survive anoxia—deprivation of energy-giving oxygen—only 5 to 8 minutes. That brief period the Soviet experimenters call clinical death. Once it has passed, biological death and gradual decomposition of the body occur. In his laboratory in Moscow, Professor Negovskii has applied hypothermia to the task of reversing death. Hypothermia is the process of cooling the body into a state of quiescent animation, either by immersion in cracked ice or in a blanket of refrigerated air, or by direct lowering of the temperature of the circulating blood. In the manner the 5- to 8-minute interval between clinical death and biological death of room temperature can be extended indefinitely. Professor Negovskii has, in fact, extended the crucial time period to a full hour in experimental animals. The question now is how far treatment which induces hypothermia can stretch the sur-

vival time of a threatened brain in man. It should be borne in mind, in reading the text below, that the subject here is sudden death such as occurs in violent accidents entailing massive loss of blood, in complex surgical operations, in childbirth, or in heart attacks. The assumption is that the individual victims of conventional death are still capable of constructive and happy contribution to society. Although an ultimate effect may be to lengthen the span of the statically average lifetime, the main purpose is not to extend an already socially spent existence.)

THE RESEARCH FRONTIER

(To a point where a surgeon unfamiliar with the techniques for reversing death will not be welcome near a hospital operating room? The famous Russian medical research pioneer, Professor V. A. Negovskii, conveys that suggestion in the book excerpted in the preceding pages. In his introduction he attributes original authorship of that conclusion to Dr. Claude S. Beck, professor of cardiovascular surgery at Western Reserve University Medical School in Cleveland, Ohio.

(Noted for daring with artificial hearts and lungs, Dr. Beck has done hundreds of animal experiments in search of ways and means of abolishing the heart attack as a major cause of death in man. Below are passages from the preface he wrote to the American edition of "Resuscitation and Artificial Hypothermia," which was translated from the Russian by Consultants Bureau, Inc.)

WHERE IS SCIENCE TAKING US?

(By Claude S. Beck, M.D., Western Reserve University)

Professor Negovskii's book should be in every medical library. Almost every research worker in this area will want it. Clinicians, cardiologists, surgeons, and medical students will find important information in it.

Published in the Soviet Union in 1961, it contains 49 illustrations and 336 references to Soviet literature (110 of which were published before 1950 and 226 since) and some 530 references to the non-Soviet literature.

Professor Negovskii is director of the institute in Moscow where investigations on this subject are carried out. The building is one of a row of typical four-story Moscow residences. In this old and poorly equipped building are some 20 full-time scientists working with great devotion under the direction of Negovskii. The institute has laboratories for physiology, metabolic studies, histology; a soundproof room for conditioned reflexes; and an area for the development of apparatus for defibrillation and other electrical equipment. A liaison exists between this institute and the hospitals of the Soviet Union.

Negovskii concludes his introduction to the book thus:

"Because of the vast scale of research on hypothermia in the Soviet Union and elsewhere, we deemed it imperative to study this problem with particular reference to its bearing on the use of artificial cooling in the treatment of terminal states. At the present time in the study of the pathophysiology and in the treatment of states of agony and clinical death, increasing use is being made of the fact that hypothermia, when properly applied, prolongs the period during which the brain and other tissue can survive general anoxia. The need has arisen to summarize the more important findings obtained during research into resuscitation in recent years, and it was this that led the author to write this monograph. If the material it contains proves helpful to those working in the fields of the pathophysiology and treatment of terminal states, the author will consider his objective fulfilled."

In his conclusion, Professor Negovskii states that: "The successful solution

of resuscitation is bound up with training. We can now state with pride that the ranks of the many experimental researchers concerned with resuscitation for several years are being swelled by groups of young scientific workers. . . . A practical problem is to make the use of resuscitation more widespread."

In our [Western Reserve University Medical School] laboratory, machine life has been provided in dogs fibrillating for 120 minutes. Such machine maintenance of life will allow the victim to be transported to a medical center where the heart can be defibrillated and the heartbeat restored. A new medical specialty—resuscitology—is thus being born.

It is obvious that the Soviet Union is placing resuscitation in a showcase for the world to look at. It is obvious also that the world is going to have to look at it. The Soviet scientists have earned an important place in the development of this subject. They have the forward thinking to recognize that a new medical specialty has been created, and they have centralized authority to put their ideas across.

Where are we in the United States of America?

We take satisfaction in our individualism. We can be static in our attitudes without being criticized. Indeed the American M.D. does not have to learn. He can walk away from the death scene instead of running to it.

We scarcely know that the fatal heart attack can be erased and never recur. We scarcely know that over one-half of the coronary victims could be revived if conditions were right at the moment of death.

The first defibrillation of a human heart was achieved in America, the first reversal of a fatal heart attack was accomplished in America, the first application of resuscitation beyond the confines of the hospital took place in this country. Mouth-to-mouth breathing and closed chest pumping of the heart (Crile 1912) were developed in this country. But it is fair to say that America has not yet awakened to the new future.

Our medical scientists seem to be conditioned by the belief that physiological manifestations are necessarily related to morbid disease, which is the basis of the electrocardiogram. Thus the fatal heart attack is produced by injury to muscle and injury current. Our leaders in cardiology are quoted as saying in substance (CONGRESSORIAL RECORD, Mar. 5, 1959, p. A1807) that they do not know "the cause of death after a clean bill of health," i.e., death in a good heart.

A discussion of coronary artery disease appears in "Modern Concepts of Cardiovascular Disease," January 1962. In this article a medical cardiologist refers to anticoagulants and states that "in a word, preventive is to be the battle cry of the future," as though there is nothing else of importance concerning this disease.

It seems that our attitudes must be revolutionized, because the experiment is far beyond the clinician. This revolution would be facilitated if we had in this country an institute for the study of the environment of death. One such institute (comparable to our many cancer institutes) would focus attention on the prevention of death, the reversal of death, and the complex biological problems of the dying process. There is scarcely any more pressing medical problem. Strange, indeed, that America needs this nudge from Russia—and fortunate that we have had it.

MEMORANDUM ON THE ENVIRONMENT OF DEATH

I. DEFINITION

The subject concerns the process of dying and the complex changes associated with death—before it occurs, at the moment of, and after it occurs. These alterations concern circulation of the blood, oxygenation of the blood, metabolism, anatomical

changes that occur in the body tissues and factors that modify these alterations, prevent them, and reverse them. Of special importance to society is death that is preventable and reversible as in the fatal heart attack occurring in hearts too good to die. The subject matter might include manmade methods of death as in war and has relationship to the Armed Forces.

## 2. THE UNITED STATES OF AMERICA VERSUS RUSSIA

The Russians have an institute in Moscow where this subject is being investigated. They have centralized authority to put their ideas across. They have the forward thinking to realize that a new medical specialty has been created concerning prevention and reversal of death in many victims. Their contributions are no more important than those from the free world and especially from the United States of America but their institute gives them unity of purpose and this has propaganda value. A recent book on this subject places their work on resuscitation in a showcase for the world to look at. It is obvious also that the world is going to have to look at their work.

### 3. WHY THIS INSTITUTE?

An institute on death would identify research on death in the same way as a cancer institute identifies research on cancer. At the present time investigations are carried out in our various institutions by solitary workers who are alone in their field. The projects under investigation are often unrelated. Often they are not given proper position as to importance. An institute would provide research facilities and research staff. The work under institute guidance would have design and purpose. The building blocks that are missing would be identified as such and new discovery would be made. A scientist can bring order out of chaos, can separate the important from the unimportant. The need for organization and leadership in this area is pressing. At present we are floundering around, satisfied and complacent and no one seems to understand or care about our position in science. This statement applies to the American M.D. who scarcely knows that the majority of fatal heart attack victims could be made to live again with the same heart. He scarcely knows that death can be erased and never recur.

### 4. ASSOCIATION AND TRAINING

Society should be trained to reverse death when the body is good enough to sustain life. This involves a training program. Rescue workers, firemen, and others should be given courses of technical training. A formal and complete medical training is not a requirement to learn the technique. In the area of the fatal heart attack there are thousands of lives that could be saved every year in this country. Almost every fatal heart attack victim in the thirties, forties, and fifties could be made to live again. Everyone including the Congress has a personal interest in this subject.

CLAUDE S. BUCK, M.D.,

Professor of Cardiovascular Surgery,  
Western Reserve University, Cleve-  
land, Ohio.

## Mark Twain Talks to Rachel Carson

### EXTENSION OF REMARKS

OF

## HON. WAYNE MORSE

OF OREGON

IN THE SENATE OF THE UNITED STATES

Saturday, October 13, 1962

Mr. MORSE. Mr. President, Dr. Duncan Howlett, of All Souls Unitarian

Church in Washington, D.C., recently delivered a sermon that deserves to be read by all Americans. It holds out many provocative thoughts, and I ask that it be printed in the Appendix of the Record.

There being no objection, the sermon was ordered to be printed in the Record, as follows:

MARK TWAIN TALKS TO RACHEL CARSON  
(By Dr. Duncan Howlett, All Souls Church,  
Washington, D.C.)

Like millions of other Americans, I was enchanted with Rachel Carson's "The Sea Around Us" when it was published more than 10 years ago. The scope of her imagination—coupled with the scientific accuracy of her data—all of it expressed in lyrical prose, quite carried me away. Before I was through, I had read not only "The Sea Around Us," word for word, all the way through, but also "Under the Sea Wind," and subsequently, "The Edge of the Sea," when it was published.

It was natural, then, to begin her series of articles on poison sprays, which appeared in the New Yorker last summer. But it proved a disappointing experience. Here was a new Rachel Carson. The poetry was gone. The imaginative scope of her writing had vanished. The gentle, almost tender mood, had departed. The interest that caught and held you, and the clarity of concept and detail that enabled you to remember what you had read—all these, which Carson readers had learned to expect, were strangely lacking.

In their place, over the same author's signature, was piled fact upon fact, proof upon proof, detail upon detail, in such bewildering array, you couldn't keep it all straight. I took to underlining the articles in an attempt to grasp their meaning, and to sort out their distractions. On top of it all, there ran through the writing, a kind of foreboding, a new denunciatory prophetic tone, wholly unexpected in the author of "The Sea Around Us" and "Under the Sea Wind."

The New Yorker articles have now appeared in book form under the title "Silent Spring." Some reviews have said her book is an expansion of the articles. I understand, from her, that it is the other way around. The articles were a condensation of the book, which had been written first. If you are an admirer of Rachel Carson, you should get hold of a copy. You will find yourself at home again with an author you have learned to delight in. The beauty of language you have come to expect is there, the clarity of concept, the development of ideas, the progression from one point to the next. And you know what you have read when you are through.

And yet there is a difference, and it is marked. Here is a Rachel Carson you had not known. Here is a Jeremiah, in the marketplace of her time, denouncing, in poetic language, as did the ancient prophets of Israel in their time, the evils of a corrupt self-seeking and thoughtless society, and pronouncing doom upon the people if they do not mend their ways.

You remember your Jeremiah—"Thus saith the Lord," he cried in a typical passage:

"Your ways and your doings  
Have brought this [suffering] upon you.  
This is your doom and it is bitter.

I write in pain.

I cannot keep silent.

The whole land is laid waste.

My people are foolish.

They have no understanding.

I looked on the earth and lo, it was waste

and void.

I looked and lo there was no man

And all the birds of the air had fled."

Footnotes at end of speech.

Now hear the modern Jeremiah—the gentle Rachel Carson: I shall read from the first few paragraphs of "Silent Spring": She begins with characteristic poetic imagery.

"There was once a town in the heart of America where all life seemed to live in harmony with its surroundings. The town lay in the midst of a checkerboard of prosperous farms, with fields of grain and hill-sides of orchards where, in spring, white clouds of bloom drifted above the green fields. In autumn, oak and maple and birch set up a blaze of color that flamed and flickered across a backdrop of pines. Birds sang in the trees, foxes barked in the hills and deer silently crossed the fields, half hidden in the mists of the fall mornings.

"Then a strange blight crept over the area and everything began to change. Some evil spell had settled on the community; mysterious maladies swept the flocks of chickens; the cattle and sheep sickened and died. Everywhere was a shadow of death. The farmers spoke of much illness among their families. There had been several sudden and unexplained deaths, not only among adults but even among children, who would be stricken suddenly while at play and die within a few hours.

"Over all these lay an unfamiliar stillness. The birds, for example—where had they gone? The feeding stations in the backyard were deserted. The few birds seen anywhere were moribund; they trembled violently and could not fly. It was a silent spring—without voices."

"No witchcraft, no enemy action had alienated the rebirth of new life in this stricken world. The people had done it themselves."

"The fathers have eaten some grapes," she might have added, "and the children's teeth are set on edge," or in modern terms, the fathers have sprayed their grapes and the bodies of their children have taken in the poison.

I shall not attempt to reconstruct any of the details by which Rachel Carson explains how we are endangering human life and all life on this planet by the sudden and very widespread use of chemicals designed to do away with unwanted vegetable and animal life. There is no need. She herself has done it as well as anyone could wish. But I shall ask the question that she asks, and that Jeremiah asked before him: "Are we such fools?"

Will our civilization succumb—as have all those that preceded it—to the greed, and the thoughtlessness of men? Have we learned nothing since Jeremiah's time? There rises before us today the appalling spectacle of American commercial interests that appear to exercise little or no self-control on behalf of the individual rights of men, at least as far as the manufacture and sale of their products is concerned.

In the face of mounting evidence to the contrary, the tobacco producers go on advertising the protective quality of filters, and the joy of smoking generally. They also insist that the relationship between smoking and cancer has not been proved. Perhaps it hasn't, in the strict sense, but surely there is enough medical evidence before us now of the probable relationship between cancer and smoking to make us wonder whether the manufacture and sale of tobacco is any longer a legitimate way to make a living. I wonder about this in particular when I learn that the tobacco industry is counting on our young people to sustain the ebbing market for its wares in the adult population.

In the face of the staggering figures on alcoholism in the United States—we have some 5 million cases in the United States today, according to the National Institute of Mental Health—the liquor industry spends an estimated \$191 million advertising the joys and the special qualities of its several wares; and these figures do not include store-