

MINUTES

ADVISORY COMMITTEE FOR BIOLOGY AND MEDICINE

TWENTY FOURTH MEETING

Held at

ATOMIC ENERGY COMMISSION

Washington, D. C.

November 10-11, 1950

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MINUTES

Advisory Committee for Biology and Medicine

November 10-11, 1950

The twenty-fourth meeting of the Advisory Committee for Biology and Medicine was held on Friday and Saturday, November 10 and 11, 1950 at the Atomic Energy Commission building in Washington, D. C.

Attendance

ATTENDANCE

Members of Committee

Dr. Alan Gregg, Chairman  
Dr. E. W. Goodpasture, Vice-Chr.  
Dr. Detlev W. Bronk  
Dr. E. A. Doisy  
Dr. E. C. Stakman  
Dr. Curt Stern  
Dr. Joseph T. Wearn

Staff of AEC and  
Division of Biology  
and Medicine

Dr. Henry D. Smyth  
Dr. T. Keith Glennan  
\* Mr. Marion W. Boyer \*Dr. Shields Warren  
Brig. Gen. James P. Cooney ✓  
Mr. John A. Derry  
Dr. Walter D. Claus  
Dr. Wm. F. Bale  
Mr. L. Joe Deal  
Dr. Charles L. Dunham  
Dr. George A. Hardie  
Dr. L. W. Tuttle  
Dr. Paul B. Pearson  
Dr. Max R. Zelle  
Dr. N. Edward Tolbert  
Mr. H. L. Bowman  
Mr. Ward Miller, Jr.  
Mr. R. L. Butenhoff  
Mr. Jack C. Greene  
Mr. H. A. Stanwood  
Dr. A. F. Thompson  
Mr. Beverly Thompson  
Dr. Philip N. Powers  
Dr. Merril Eisenbud (NYOO)  
Mr. H. B. Fry (NYOO)  
Mr. R. D. O'Neill  
Mr. O. H. Townsend  
Mrs. Frances R. Montgomery

Visitors

General Wm. H. Powell  
Adm. F. C. Greaves  
Capt. C. F. Behrens  
Capt. H. H. Haight  
Dr. Philip Owens  
Dr. Willard Machle  
Dr. Carl Harris  
Dr. George V. LeRoy

FRIDAY, NOVEMBER 10, 1950

The Chairman convened the meeting at 9:30 a.m.

Minutes of  
Meeting of  
Sept. 8 & 9,  
1950

The first order of business presented to the Committee by the Chairman was a discussion of the minutes of the meeting held at the AEC on September 8 and 9, 1950. The minutes were approved unanimously upon a motion by Dr. Stakman and seconded by Dr. Doisy.

Report on  
Support of  
Research  
Projects

Report on Support of Research Projects

The following projects in biology and medicine and health physics which had been approved by the Division of Biology and Medicine since its meeting in September were discussed.

Medical

- (1) New York University, College of Medicine - Dr. A. Marshak - "Investigation of the Physiology and Biochemistry of Nuclei and Nucleic Acids" - \$17,766

Personnel	\$13,550
Equipment & Supplies	2,550
Overhead	1,316
Other	350
Total	<u>\$17,766</u>

- (2) New York University - Bellevue Medical Center -  
 Dr. Homer W. Smith - "Sodium and Potassium Distribution  
 in Man" - \$5,962

Personnel	\$2,300
Equipment & Supplies	3,220
Overhead	442
Total	<u>\$5,962</u>

- (3) University of Denver - (Contract No. AT(29-1)-Gen-788)  
 Dr. Fred D'Amour - "Physiologic and Pathologic Effects  
 of Radioactive Cobalt" - \$6,280  
 (Approval of Renewal of Contract for Period October 1,  
 1950 to September 30, 1951)

Previous Allocations: ONR-AEC \$38,830; AEC \$19,000,  
 6/30/49 to 10/1/50

Personnel	\$3,700
Equipment & Supplies	1,100
Overhead	1,480
Total	<u>\$6,280</u>

- (4) University of Utah - Dr. M. M. Wintrobe and Dr. C. E.  
 Cartwright - "Metabolism of Trace Elements in Animals  
 and Men with Special Reference to Their Role in  
 Erythropoiesis" - \$10,800

Personnel	\$3,000
Equipment & Supplies	6,700
Overhead	800
Other	300
Total	<u>\$10,800</u>

- (5) University of Maryland - Dr. Theodore E. Woodward -  
 "Studies on Monkeys Following Exposure to Large Doses  
 of Total Body Irradiation" - \$17,670

Personnel	\$6,500
Equipment & Supplies	7,111
Overhead	1,309
Other	2,750
Total	<u>\$17,670</u>

- (6) U. S. Department of Interior, Bureau of Mines -  
"Inflammability and Explosibility of Metallic Powders  
of Uranium, Thorium, Zirconium, Titanium, Vanadium and  
Beryllium" - \$4,000

(Budget breakdown not available)

- (7) Peter Bent Brigham Hospital (Contract No. AT(30-1)-733)  
Dr. Francis D. Moore - "Study of the Metabolic Aspects  
of Injury and Convalescence"(Approval of Renewal of  
Contract for Period September 15, 1950 to September 14,  
1951) - \$25,812.

Previous Allocation \$18,282 for 9/16/49 to 9/15/50

Personnel	\$12,650
Equipment & Supplies	9,500
Overhead	1,912
Other	1,750
Total	<u>\$25,812</u>

- (8) New York University - Bellevue Medical Center - Dr.  
William S. Tillett - "The Influence of Ionizing  
Radiation on Enzyme Systems" - \$6,267

Personnel	\$2,800
Equipment & Supplies	2,800
Overhead	467
Other	200
Total	<u>\$6,267</u>

- (9) University of Chicago - Dr. Peter P. H. DeBruyn -  
"Radiosensitivity of the Lymphocyte" - \$6,815

Personnel	\$2,400
Equipment & Supplies	3,910
Overhead	505
Total	<u>\$6,815</u>

- (10) Western Reserve University - Dr. L. C. Krampitz -  
"The Effect of Incorporated Radioactivity on the  
Biological Activity of Bacteriophage" - \$8,100

(Budget breakdown not available)

- (11) Western Reserve University - Dr. Harland G. Wood -  
"Intermediary Metabolism of Carbohydrates by Bacteria" -  
\$34,608 - (Approval of Transfer to AEC and renewal of  
ONR Contract NR-130-146 for period 12/1/50 to 11/30/51)

Previous allocations ONR-AEC F.Y. 48 - \$25,000;  
F.Y. 49 - \$69,656

Personnel	\$25,144
Equipment & Supplies	6,500
Overhead	2,564
Other	400

Total \$34,608

- (12) University of Virginia - Dr. Alfred Chanutin - "Effects  
of Ionizing Irradiation on Mammals (Approval of transfer  
to AEC and renewal of ONR Contract NR 124-015 for  
period 12/1/50 to 11/30/51) - \$21,600.

Previous allocations - AEC-ONR FY 48 - \$25,000;  
FY 49 - \$25,000

Personnel	\$15,487
Equipment & Supplies	2,540
Overhead	3,073
Other	500

Total \$21,600

- (13) University of Washington, Seattle - "Studies Related  
to Blood Preservation" - Dr. Clement A. Finch - \$12,528

Personnel	\$6,600
Equipment & Supplies	4,500
Overhead	928
Other	500

Total \$12,528

- (14) University of Washington, School of Medicine -  
Dr. Robert D. Ray - "Mobilization of Radioactive  
Emitters From Bone - \$9,288

Personnel	\$3,600
Equipment & Supplies	4,750
Overhead	688
Other	250
Total	<u>\$9,288</u>

- (15) Duke University, School of Medicine - Dr. R. W.  
Rundles - "Metabolism of Human Bone Marrow - \$12,042

Personnel	\$5,900
Equipment & Supplies	4,950
Overhead	892
Other	300
Total	<u>\$12,042</u>

Biological

- (1) University of Arkansas - Part I: Dr. J. M. Siegel -  
"Intermediary Metabolism of the Photosynthetic  
Bacteria" - Part II: Dr. I. Mescham and Dr. E. Kerekos -  
"Basic Studies in the Utilization of Cobalt 60 as a  
Radium Substitute - \$11,800

Personnel	\$4,400
Equipment & Supplies	7,000
Other	400
Total	<u>\$11,800</u>

- (2) University of Illinois - Dr. H. H. Mitchell and Dr. O. F.  
Kampmeier - "The Content in Human Tissues of Eleven Trace  
Minerals" - \$8,500

Personnel	\$4,000
Equipment & Supplies	2,380
Overhead	1,660
Other	460
Total	<u>\$8,500</u>

- (3) University of Wisconsin (Contract No. AT(11-1)-64-I)  
 Dr. R. H. Burris, Dr. M. J. Johnson and Dr. P. W.  
 Wilson - "Metabolism of Organic Acids in Higher Plants  
 and Microorganisms" (Approval of renewal of contract  
 for period 1/1/51 to 12/31/51) - \$6,750

Previous allocation - \$6,500 for 1/1/50 to 12/31/50

Personnel	\$3,850
Supplies	2,400
Overhead	500
Total	<u>\$6,750</u>

- (4) University of Wisconsin (Contract No. AT(11-1)-64-II)  
 Dr. R. H. Burris and Dr. R. W. Wilson - "Studies of  
 Biological Nitrogen Fixation with Isotopic Tracers" -  
 (Approval of renewal of contract for period 1/1/51 to  
 12/31/51) Previous allocation: \$5,000 for 1/1/50 to  
 12/31/50) - \$5,400

Personnel	\$3,000
Supplies	2,000
Overhead	400
Total	<u>\$5,400</u>

- (5) Louisiana State University - Dr. H. E. Wheeler -  
 "Investigations of the Physiology, Genetics and Host-  
 Parasite Relationships of Plant Pathogenic Fungi by  
 Use of Radioisotopes for Tagging Fungous Mycelium" -  
 \$3,400

Personnel	\$2,400
Equipment & Supplies	300
Other	700
Total	<u>\$3,400</u>

- (6) University of North Carolina (Contract No. AT(40-1)-  
 299-I) - Dr. D. P. Costello - "Radiation Effects on  
 Salamander" (Approval of renewal of contract for period  
 12/12/50 to 7/1/52) - \$7,938 - (Cont'd on next page)



(6) University of North Carolina (Cont'd)

Previous allocation \$5,547 for 12/12/49 to 12/11/50

Personnel	\$4,600
Equipment & Supplies	1,400
Overhead	588
Other	1,350
Total	<u>\$7,938</u>

In connection with the discussion on the distribution or apportionment of projects throughout the country to universities and installations, Dr. Warren explained the operations that are involved, including budgets, clearance, overhead problems, maintenance and guards, and a wide variety of fixed charges before a contract may be consummated.

The individual members of the Committee expressed their views on the general scope of research activities that should be explored. It was brought out that the AEC might be interested in furthering studies on blood preservation. The Committee agreed that research in the preservation of red cells should be strengthened as it is a problem of vast magnitude and will be of primary importance in civilian defense.

Proposals Declined

Proposals Declined

- (1) Hackley Hospital, Muskegon, Michigan - Dr. Leland E. Holly - "Isotope Diagnostic and Therapy Program"
- (2) University of Illinois - Dr. Henry Quastler - "Pathogenesis of Radiation Death in Mice" - \$9,017.
- (3) Johns Hopkins University - Dr. Thomas G. Ward - "Use of Radioactive Phosphorus for Studying a Common Cold Virus in the Chick Embryo" - \$26,162.

- (4) Illinois Institute of Technology - Armour Research Foundation - Dr. R. F. Humphreys - "Spectrographic Determination of Cobalt in Human Blood" - \$7,000
- (5) University of Illinois - Dr. Henry Quastler - "The Growth of Plant Seedlings as Affected by Irradiation" \$8,938.
- (6) Hope College, Holland, Michigan - Dr. Teunis Vergeer - "Study of the Effects of Neutron and Gamma Radiation on the Metabolism, Reproduction and Heredity of Plants" \$24,850.
- (7) University of Cincinnati - Kettering Laboratory - Dr. Robert A. Kehoe - "Penetration and Absorption Through the Skin" - \$21,900.

The Committee was of the opinion that when proposals are declined a brief reason for the declination should be stated on the agenda and a statement made to the investigator that reconsideration could be given to this proposal at a later date.

Genetics  
Program

Genetics Program

Dr. Zelle explained the overall picture of the genetics program stating that there are roughly 20 contracts in this field. He summarized the work being undertaken by each investigator. It was brought out that Dr. Lauren Donaldson at the University of Washington, Seattle, has a program in marine genetics, using both trout and salmon. In this connection, Dr. Zelle and Dr. Curt Stern are planning to visit this project after the Committee meets at Hanford Operations Office in January 1951.

Dr. Zelle raised the question of whether work on human genetics should be allowed to develop by its own resources or should the AEC enter into this area of activity by supporting certain well-qualified investigators. It was generally agreed that the knowledge of human mutation rates is extremely important and the question of AEC support for human genetics research will be discussed further at the meeting to be held in January, 1951.

Reports and  
Visits to  
Projects

Reports and Visits to Projects

Considerable discussion ensued regarding written reports received from investigators of projects as well as of the necessity of the staff visiting the project. The Committee was of the opinion that a short concise report was more advantageous than a lengthy one. It was brought out that it was infinitely more effective to make personal contacts with investigators even though it would involve a great deal of travel for the staff of the Division and also travel requires an adequate allocation of funds for this purpose.

In connection with the discussion in the Biophysics Program it was stated that the overall activities can be divided into two categories, the first of which is a determination of tolerances and permissible doses by a human being and the calculation of maximum permissible isotopes in air and water.

Dr. Claus stated that within the next two weeks there will be issued the official figures for the permissible dose for the human being through external radiation and through radioactive isotopes.

The Committee was gratified to learn that during the past two years there has not been a single case of radiation injury due to the activities of the AEC.

At the conclusion of the discussion on the research programs Dr. Warren read the following letter from Mr. Dean which reiterated his views on the continuance of the research program:

"Thank you for your note of October 23rd and the enclosed correspondence with and from the Department of Agriculture and the National Institutes of Health. I think this is useful documentation for Bureau of the Budget purposes and for any attempts by the Appropriations Committees to eliminate such programs.

"You will be interested to know that in our conference with the President this week he was in full agreement with the Commission that it would be a great mistake for us to retrench in our research programs. He was quite positive about this and I was happy to be reassured."

It was the belief of the Committee that research should include projects of an exploratory nature with new ideas and new investigators within the limits of the atomic energy field and not be restricted to specific categories and applications.

The morning session ended at 12:30 p.m.

FRIDAY AFTERNOON-- November 10, 1950 - 1:30 p.m.

Current  
Program in  
Protection

Current Program in Protection of Personnel

Representatives of the medical branches of the Armed Services, which included General Wm. H. Powell, Admiral F. C. Greaves, Capt. H. H. Haight, Capt. C. F. Behrens and Brig. Gen. James P. Cooney participated in discussions regarding their current programs for the protection of their personnel against acute injury from atomic radiation.

As the discussions became more provocative, the Committee became aware that the big problem, becoming more acute each day and for which there has not been found an answer, is the physical reaction which a commanding officer might expect from troops who have been exposed to heavy doses of ionizing radiation. Whether these troops will be fit for further combat duty is a complex and serious problem, and the subject will again be considered by a group of outstanding medical men and scientists at a meeting to be held on December 8, 1950.

Status of  
Radiation  
Instruments  
Branch

Status of Radiation Instruments Branch

Mr. Butenhoff, Chief of the Radiation Instruments Branch explained the general status of the program, and displayed radiological instruments which are designed for field use by the Department of Defense and those designed for civil defense radiological monitoring by the AEC.

Greenhouse

Greenhouse

General Cooney and Dr. Tolbert oriented the Committee on the biological aspects of "Greenhouse." The Committee was gratified to learn that General Cooney is acting as an advisor to General Quesada on the Task Force as well as in charge of Dr. Alvin Graves' radiological safety group. This involves the protection of all of the task force at the time of detonation.

Plutonium  
Permissible  
Dose Level

Plutonium Permissible Dose Level

Dr. Claus reviewed the work that has been done on the Plutonium Permissible Dose Level. He stated that the National Bureau of Standards Sub-committee on Internal Dose has taken a hand in the problem and has re-surveyed the various data which were available.

Dr. L. Marinelli and Dr. Robley D. Evans are working on the problem. The Committee is hopeful that through these combined studies there will be a possibility of tying down the permissible dose of radium that can be taken by a human being.

European  
Biological  
and Medical  
Sciences

European Biological and Medical Sciences

Dr. Gregg gave the Committee an interesting portrayal of his recent trip to Europe, giving his general impressions of the present state of the work now going on in biological and medical fields. Scientifically it was his belief that the picture is very spotty with

Sweden, Switzerland and to a certain extent Britain trying to resume scientific research.

SATURDAY, NOVEMBER 11, 1950

Budget  
Estimates

Budget Estimates

Mr. Derry and Mr. Stanwood opened the meeting by presenting a review of the present and proposed budget estimates which included construction needs and personnel. Budget charts prepared for exhibition to the Budget Bureau were displayed and it was brought out "one picture is worth a 1000 words." This presentation was followed by the Chief of each Branch discussing his respective program. It was recognized that real advances had been made in compiling budget information for presentation since the inception of the Division.

ABCC

ABCC

Dr. Philip Owen, Dr. Carl Harris and Dr. Willard Machle of the NRC joined the discussions regarding the problems emanating from the ABCC in Japan. The Committee was in agreement that in view of disturbed situation in Japan it would be well to have a representative of the NRC and the AEC, preferably a member of the ACBM go to Japan to study the problems. In connection with these discussions, it was the sense of the Committee that the genetics program should be continued for ten years. A recommendation for the continuance of the medical program

will be based upon the report of Dr. Machle of the NRC and Dr. Goodpasture who have agreed to go to Japan for this survey.

The statement which was prepared by the Committee at their September meeting and modified at this meeting concerning the recommendation that a rapid screening be made of a larger number of the population in Japan has been forwarded by Dr. Warren to the President of the National Academy of Sciences.

It reads as follows:

"The Advisory Committee for Biology and Medicine of the Atomic Energy Commission, having heard the reports of the Atomic Bomb Casualty Commission, notes with satisfaction the progress made in the various aspects of the study including the work in genetics, medicine, and in the organization of the staff.

"The Advisory Committee for Biology and Medicine notes, however, that little progress has been made in screening larger groups of the population. While recognizing the importance of complete physical examinations and the various laboratory studies, the Committee feels that it should re-emphasize its original desire for the screening of larger numbers of the population with a view to discovering early changes in the hematopoietic and other systems. It is hoped that the screening of larger numbers of the population can be accomplished without further delay, and it should be emphasized that this should be done within the present budget and structure and not as an added activity.

"At a joint meeting of committees from the Division of Biology and Medicine of the Atomic Energy Commission and the National Research Council on February 4, 1950 it was agreed that more emphasis should be placed upon the screening operation to have abnormalities."

Dr. Hardie reported that the administration of the ABCC contract with the NRC will be transferred from the



AEC in Washington to the NYOO effective December 1, 1950 in order for the contract to follow the general pattern of all AEC contracts. The Committee was pleased to learn that the contract had been made unclassified under GM-93 which will greatly facilitate its administration.

Fellowships

Fellowships

Dr. Bronk and Dr. Pearson reviewed the recent developments and changes in the Fellowship Programs. The Committee looked with favor upon the entire program being retained under the auspices of the ORINS. In this connection the following excerpt from a letter written by the General Manager to Dr. Pollard of the ORINS was placed in the record:

"The Commission is informed by the President of the National Academy of Sciences that the National Science Council is prepared to assist, including several ways, including the evaluation of all applicants on a nationwide basis. It is our understanding that the Oak Ridge Institute of Nuclear Studies will use the service and establish the order of selection of candidates, and this procedure meets with the approval of the Commission. In addition, the Oak Ridge Institute may require an additional panel of not exceeding 7 or 9 scientists, drawn from over the country, to make the final review and appointment of fellows in establishing a total number of fellows to be appointed in each category, and by applying the special criteria of paragraphs 3 and 8 of this memorandum."

Industrial  
Medicine  
Fellowships

Industrial Medicine Fellowships

Dr. Hardie stated that two industrial medicine fellows had been selected, that clearances were now in process, and that it was expected they would begin their

studies at the University of Rochester on November 27. Four fellowships are to be offered next year and six will be offered if qualifications are about equal.

Civil  
Defense

Civil Defense

Mr. Bowman briefed the Committee on the recent developments in the civil defense program. Copies of the current releases concerning civil defense were given to each member of the Committee. He stated that the AEC had entered into an agreement with the Army Corps of Engineers whereby for \$10,000 the Corps of Engineers is making a study of the flood hazard in the Columbia River and that study is to be concluded within the next six months.

It was brought out that in connection with the radiological monitoring training, the emergency teams of the AEC have been furnished maps of all of the cities of over 50,000 population so that they would be prepared to go in and mark out on these maps any contaminated areas if necessary.

Reservists  
and Draft

Reservists and Draft

Dr. Powers and Dr. Tuttle provided the Committee with a summary on the draft status of AEC personnel and of reservists. They were pleased to learn that procedures are being placed in motion wherein essential scientific and technical personnel are receiving every consideration for deferred classifications.

Publication  
Resolution

Publication Resolution

Dr. Alberto Thompson spoke on the dissemination of scientific information and the usefulness of the nuclear science abstracts to schools and medical libraries throughout the United States. The Committee have expressed themselves previously as being in favor of a wide distribution of scientific material. The Committee approved unanimously the following motion:

"We recommend the payment of publication charges for material emanating from research sponsored by the Division of Biology and Medicine when this is the normal policy of the periodical in which publication is made and that, whenever possible, and with the expenses of additional publication over and above the normal sequence of issues in order to bring sooner to publication accumulated material."

Radiation  
Tolerance  
Levels

Radiation Tolerance Levels

Dr. Claus opened a discussion as to whether the average exposure of individuals in plants ought to be kept substantially less than the maximum permissible radiation dose or whether the permissible dose included so many safety factors that there was no further merit in reducing radiation exposures of individuals below this point. There was a wide diversity of opinions among members of the Committee and staff on the moral and economic aspects of the question. The problem is receiving study by the Biophysics Branch.

Mr. Derry

Mr. Derry

Dr. Warren announced that Mr. Derry was leaving the Division of Biology and Medicine to take up a new assignment in the Division of Research. The Committee expressed regrets on learning of Mr. Derry's resignation.

Next Meeting

Next Meeting

The next meeting of the ACBM will be held at the Hanford Operations Office in Richland, Washington on January 12 and 13, 1951.

ADDENDUM

November 30, 1950

Mr. Gordon Dean, Chairman  
U. S. Atomic Energy Commission  
1901 Constitution Avenue, N.W.  
Washington 25, D.C.

Dear Mr. Dean:

The Advisory Committee for Biology and Medicine held their twenty-fourth meeting with all of the members present at the Atomic Energy Commission on Friday and Saturday, November 10 and 11, 1950.

We were concerned on Friday morning with the biological, medical and health physics research programs as sponsored by the Division of Biology and Medicine, and a broad discussion followed.

We responded to the request from Dr. Warren that the Committee give their individual views on the general scope of research activities that should be explored.

Dr. Wearn brought out that the AEC might be interested in furthering studies on blood preservation. The Committee agreed that research in the preservation of red cells should be strengthened as it is a problem of vast magnitude and will be of primary importance in civilian defense. We shall continue to keep on the lookout for investigators who may be interested and willing to undertake work in this field.

Considerable time was devoted to the question of whether the AEC should partake of a study on human genetics. The subject was tabled for further study and it will be discussed at the meeting to be held at the Hanford Operation Office in January.

Considerable discussion ensued regarding written reports received from investigators of projects as well as of the necessity of the staff visiting the project from time to time.

The Committee was of the opinion that a short concise report was more advantageous than a lengthy one. It was brought out that it was infinitely more effective to make personal contacts with investigators even though this would involve a great deal of travel for the staff of the Division and also require adequate allocation of funds for this purpose.

I am sure you will be interested in the views of the Committee that it is their belief that research should include projects of an exploratory nature with new ideas and new men within the limits of the atomic energy field and not be restricted to specific categories and applications.

In reviewing the research program of the Biophysics Branch it was gratifying to learn that during the past two years there has not been a single case of radiation injury to plant personnel.

The afternoon session was most provocative. Dr. Warren had asked representatives of the medical branches of the Armed Forces, which included General William H. Powell, Admiral F. C. Greaves and General J. P. Cooney to present current programs regarding the protection of their personnel against a acute injury from atomic radiation. A lengthy discussion took place in which all members of the Committee as well as the staff of the Division participated.

As the discussions progressed we became aware that one big problem, becoming more acute each day and for which we do not have an answer, is the physical reaction which a commanding officer might expect from troops who have been exposed to heavy doses of ionizing radiation. Will they be fit for further combat duty? This is a complex and serious problem. In this connection, Dr. Warren has called a meeting on December 8 of a number of outstanding medical men and scientists in the field of radiology, with a view to forecasting, for military use, the immediate effects of heavy, but not necessarily lethal, doses of penetrating radiation on physical fitness.

The Chief of the Instruments Branch oriented us on the general status of their program, displaying several dosimeters and radiation survey meters which were of much interest to the Committee.

The biological aspects of "Greenhouse" were presented by General Cooney and Dr. Tolbert. I shall not attempt to comment on this presentation except to say that the Committee was vitally interested and I personally feel that we are indeed fortunate in having General Cooney as an advisor to General Quesada on the Task Force and in charge of Dr. Greaves' radiological safety group.

Dr. Warren had asked me to give my general impressions concerning my recent trip to Europe, touching on the highlights of biological and medical science. Scientifically, I believe it to be a very spotty picture, but I will not reiterate those remarks.

The countries that are trying to resume scientific research and be somewhat as they used to be are Sweden, Switzerland and, to a certain extent, Britain.

Poverty in France at this time is overwhelming. The most important thing in the field of government is to try and stop inflation. The misery of the older people in Europe because of inflation is something that simply cannot be overdrawn and this problem is uppermost in the minds of thinking men.

The meeting on Saturday was opened with Mr. Derry and Mr. Stanwood presenting a review of the present and proposed budget estimates which included construction needs and personnel. Budget charts prepared for exhibition to the Budget Bureau were displayed and as it was stated at the meeting, "one picture is worth a thousand words." This presentation was followed by the Chief of each Branch discussing his respective program. It was recognized that real advances had been made in the budgetary presentation and the managerial side of the work of the Division of Biology and Medicine since its inception, due in most part to Mr. Derry's splendid efforts.

Dr. Philip Owen, Dr. Carl Harris and Dr. Willard Machle of the National Research Council joined the meeting to partake in the discussions regarding the problems of the Atomic Bomb Casualty Commission in Japan. We are in agreement with Dr. Winternitz that it would be helpful in the light of the events and the current disturbed situation in Japan incident to the Korean problem, to have a representative of the NRC and the AEC, preferably a member of the Advisory Committee to go to Japan to study the problems confronting the ABCC. In connection with these discussions, the general sense of the Committee was that the genetics program should be continued, probably for ten years. However, there is some doubt as to the value of the medical program and the recommendation for its continuance will be based upon the report of Dr. Machle and Dr. Goodpasture, who have consented to go to Japan for this survey.

The statement prepared by the Committee at their September meeting and modified at this meeting concerning the recommendation that a rapid screening be made of a larger number of the population in Japan with a view to discovering early and acute changes in the hematopoietic and other systems has been forwarded by Dr. Warren to the President of the National Academy of Sciences.

Upon the return of Dr. Machle and Dr. Goodpasture from Japan we will be in a better position to appraise the work of the ABCC.

Dr. Bronk and Dr. Pearson reviewed the recent developments and changes in the Fellowship programs. It will be of interest to you to learn that the Committee was favorably inclined to the entire program being retained under the auspices of the Oak Ridge Institute for Nuclear Studies.

We are always eager to learn of progress in civil defense and Mr. Bowman's statement reviewing recent events leads us to believe that other government agencies are "at long last" awaking to the seriousness of the problem.

Dr. Philip Powers and Dr. Tuttle provided the meeting with a summary on the draft status of AEC personnel. We were pleased to learn that procedures are being placed in motion wherein essential scientific and technical personnel will receive every consideration for deferred classifications.

Dr. Alberto Thompson spoke on the dissemination of scientific information and the usefulness of the nuclear science abstracts to schools and medical libraries throughout the United States. We have always felt that there should be a wide distribution of scientific material. The proposal that the Commission adopt a positive policy of paying a fair page cost for publication of articles originating with the AEC projects has received the unanimous approval of the Committee.

The motion read as follows: "We recommend the payment of publication charges for material emanating from research sponsored by the Division of Biology and Medicine when this is the normal policy of the periodical in which publication is made and that, whenever possible, aid with the expenses of additional publication over and above the normal sequence of issues in order to bring sooner to publication accumulated material."

Dr. Claus opened a discussion as to whether the average exposure of individuals in plants ought to be kept substantially less than the maximum permissible radiation dose or whether the permissible dose included so many safety factors that there was no further merit in reducing radiation exposures of individuals below this point. There was a wide diversity of opinions among members of the Committee and staff on the moral and economic aspects of the question. We understand that the problem is currently under further study by the Biophysics Branch.

Mr. Derry's leaving the Division of Biology and Medicine will be a great handicap, and we feel that we must increase our efforts in assisting Dr. Warren to help compensate him for Mr. Derry's loss.

We were pleased to meet Dr. Keith Glennan and Mr. Marion Boyer and to have them join with us at our meeting and it is always good seeing Dr. Smyth.

The next meeting of the Advisory Committee for Biology and Medicine will be held at the Hanford Operations Office on January 12 and 13, 1951.

Sincerely yours,

/s/ Alan Gregg  
Alan Gregg, Chairman  
Advisory Committee for Biology and Medicine