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JURUARY, 1953

Research Projects Approved During January, 1953

H 125 following projects perorde for negotiation or renewal during

Biology Biophysics Medical

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Biology

Investigators: Title: "A Stu University "A Study of of Idaho 7 Heal thy Absorption 25° 75° Mestern milie Bughan Sec 1 10. Fire Mineral Elements -Radiosotive Tuber.

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HE invostigator: Utah State sounts slightle Sitt. Agricultural College Clyds Riddulph **Hadioisctopes** Tenenal) Ħ Contract F Study 30-(1-11)-PC 2, Reproduction"

DETERMINATION [CIRCLE NUMBER(S)]

1. CLASSIFICATION RETAINED

2. CLASSIFICATION CHANGED TO:

3. CONTAINS NO DOE CLASSIFIED INFO

4. COORDINATE WITH:

5. CLASSIFICATION CANCELLED

6. CLASSIFIED INFO BRACKETED

7. OTHER (SPECIFY): State in the Investigator: Title: "The S College Struct of Rashington Dr. of X-rays - \$3521 (1 year) - \$7992 upon the Optical Specificity

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State College

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1977 investigators: Tion of the Zine Pr. C. Matrition 1 O. Stanberry of Plants 5 Calcarsons 72.01 30111

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Title Louisiana State Investigators The 7 University ef Biotin egaller H & A bone Christman and n on Asetate." \$2590 (1 year)

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REVIEWER (ADD):

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Michigan State College - \$6,308 (1 year) Investigators: Drs. R. U. Byerrum and C. D. Ball Title: "Transmethylation in Plants"

Biephysics

Idaho State College, Pocatello, Idaho - \$14,198 (1 year)
Investigators: Drs. Carl W. McIntosh and A. H. Taylor
Title: "Determination of Quantities of Gertain Radioactive Waterial in Ground Water and Soil of Areas in and Adjacent to the Reactor Testing Station."

Medicine

Harvard University Medical School - Massachusetts General Mospital Investigator: Dr. William H. Sweet. Assunt: \$30,150 (1 year) Title: "The Use of Thermal and Epithermal Moutrons in the Treatment of Neoplasms."

Northwestern University - Gontrast AT(11-1)-9k - \$10,000(1 year renewal) Investigators: Drs. John A. D. Gooper and Howard L. Alt. Title: "The Diagnostic and Therapsutic Use of Radioisotopes in Experimental Medicine: Radiobiology Training Program."

University of Georgia - Contract AT(LO-1)-232 - \$7567 (1 year renewal) Investigator: Dr. S. A. Singel Title: "Effect of Mutritional Deficiencies on the Synthesis of Mucleo-protein and Phospholipid."

University of Minneseta - Contract AT(11-1)-108 - \$23,792 (1 year renewal) plus \$3,186 for last period of present contract.

Investigator: Dr. Samuel Schwarts

Title: "Synthesis of Hemaglobin in Home Marrow and Multiplication of Blood Colls. Studies in Chamical Hematology."

Harvard University - Contract AT(30-1)-609 - \$83,65) (1 year renewel)
Part I - Investigators: Drs. A. K. Selomon and S. J. Gray.
Title: "Isotope Technique Research; Use of Isotopes on Medical Problems."
Part II - Investigator: Dr. A. Baird Hastings - \$15,177 (1 yr. renewal)
Title: "Use of Isotopes to Study the Metabelism of Organic Substances in
Hammalian Tissues."
Part IV - Investigator: Dr. J. C. Aub - \$23,563 (1 year renewal)
Title: "Study of Hetabelis Activities of Living Organisms by Means of
Suitable Isotopes."

Georgetown University - Contract AT(30-1)-838 - \$8,000 (1 year renewal) Investigators Dr. Charles F. Geschickter
Title: "Study of the Distribution of Bivalent Metallic Ions as Infludaced by Chelating Compounds."

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Extered University, Medical School, News School of Ophthalmology Investigator: Dr. David G. Segan - \$16,48% (1 year) Title: "Stare-ophetography of Anterior Segment of Nye with Sportal Mediarence to Syystalline Lane".

Advisory Countities for Biology and Medicine

James 12 and 13, The ACHE held their 25th secting at the MOO in Michland, Washington on Mry 12 and 13, 1951.

Dr. Ernset Goodpasture, a member of the Genedities, and Dr. Millard Machle, of the MMI, reported on their trip to Japan and the study new in progress by the Atomic Bank Castally Commission of the effect upon the population of Mirochian and Magnesia of radiation emanating from the empleations of studies beamed in 1945. As a result of the important made by Dr. Scotpasture and Dr. Machle and due to the unsettled intermediated attraction and the difficulty in obtaining qualified personnel, it was the same of the Semmister that the approach, it was the same of the Semmister that the

Molect Branch

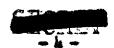
Estad of Reduction on North Capacity

The staff of the Mology Branch has held several emaferences on proposed experiments on the effects of radiation on mark especity. Units some information is svaliable on the rat, the convent diseaseions have been competed with the studies on the dog. The groups participating in the planning include representatives of the MEYA Committee, the Many and the University of California. The project is being set up to give information on both work especity and longerity. The sinisma level of exposure will be 200 y and the maximum 300 y. The exposures will be both single and intermitient deems varying both in the number of y per exposure parted and the period between empowers. The especity to perform physical work this beautient of the second of

Applied Fisheries laboratory - University of Taskinches

Reacet, Special January 13 and 16 visiting the Applied Richardes Laboratory the University of Kashington in Seattle. Hhile the whole research program of the Laboratory was reviewed, particular emphasis was placed upon the pushing program. The quantitative aspects of the program was placed upon the pushing reliminary cytological studies evaluated. It was fall that the rainbow trust program has encommended in its initial objective of demonstrating general shapes in twent following radiation exposure. However, the quantitative relation between radiation decays and generate changes will be difficult to determine. From and Dr. Jolle are proparing recommendations for future work in this field.

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Medical Branch

University of Ruchester Research

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Pilot studies on the therapy of soute radiation injury are in progress at the University of Rochester Atomic Energy Project. A large scale definitive therapeutic program will be underway by April 1 with joint support by the AEC and the Armed Forces Special Wespons Project. It is expected that within 12 to 16 months the program will yield data upon which reliable recommendations for the treatment of human radiation essualties may be based.

Biophysics Branch

Participation in the Sevada Tests

A member of the Biophysics Branch (together with representatives of the Medical Branch and Military Applications Division/ visited the Los Alence Scientific Laboratory, and toured the Mevada test site and adjoining greas, for the purpose of consulting on questions of radiological health hazards, monitoring plans, etc. in connection with the forthcoming muclear tests. The consultation resulted in general approval of the plans from a health viewpoint, and statements of the approval were presented to the Joint Congressional Committee and to the press.

In connection with the Nevada tests, arrangements were made with the Herford, argonne, Brookhaven and Oak Ridge laboratories to set up air monitoring stations in fifteen different locations, covering the entire United States. Those studies were made in addition to the Los Alamos studies which were confined to a 500-mile radius from the site, and to Air Force studies made from planes. A summary of the results will appear after the tests.

Two members of the Biephysics Branch attended the Nevada tests, for the purpose of observing the operations and to study the results of the monitoring operations. These studies have given first-hand information on the behavior of radioactive products from the explosions, and contribute to our ability to estimate health hazards from such burste. The experience has much value in considering future tests and in Civil Defense planning.

Arrangements were made through the Branch for the participation in the monitoring activities, of a representative from each of the 18 AEC energency monitoring teams. It is the expectation that the knowledge and experience gained by these representatives will be communicated to the other members of the teams. A member of the Biophysics Branch participated in this activity, as a representative of the Mashington emergency team.

Levels of radioactivity in water and food that can be parmitted under emergency conditions following an A-bomb blast or other number explosion were formulated to furnish guidance under such conditions. If the water is to be consumed for 10 days, it was calculated that it could contain as much as 0.09 microcuries of beta-gumma radioactivity per cubic centimeter

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ef water, or 0.005 microcuries of alpha activity per ec. Should conditions require that the contaminated water be consumed for thirty days following the explosion, the permissible concentrations would be 0.03 microcuries of beta-gamma activity or 0.0017 microcuries of alpha activity per co of water.

antivity for either long- or short-term consumption. Responsible officials can utilize these values during periods of emergency, however, with the conviction that enter with aradiosctive content less than those limits can be used with no real hazard. The values can be considered as applying to food as well as a ster. Emergency radiation monitoring teams will find it possible to measure these concentrations of radiosctivity with their standard *Anaparatic suphasised that these are not peace-time permissible limits of radio-

ideinistration for These emergency values have been accepted by the Federal Civil Defense inistration for issuance by it.

Health Physics Conference

The Biophysics Branch of the Division of Miology and Medicine sponso ed through Argonne Mational Laboratory a health physics conference on January 16, 17 and 18. This was the first time that a meeting has been held solely for the purpose of discussing the health physics (radiation protection) problems encountered within the ABC installations. The meeting had a two-fold purpose, namely to encourage an exchange of ideas and thoughts on mutual problems and to provide the latest information on the various research and development programs. There were approximately 175 parsons in attendance at the neeting representing all of the AEC Operations Offices and the majority of their tentractors.

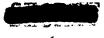
January 19, with representatives of AFOAT, AML, and Harford to discuss the possibility of Hanford's participating in an experiment designed to trace the flow of radioactive eff-grace from Hanford's process. It was a greed that the proposed experiment had some merit and should be undertaken provided hasard to people or environment from the operation. the Hanford representatives satisfied themselves that there would be no health A representative of the Branch, in cooperation with the Division of Research attended a secting at Argonne Matienal Laboratory on Friday,

Civil Defense Lisison Branch

Emergency Permissible Levels of Radiation

Emergency permissible levels of radioactivity in food and water, prepared use by AEC emergency radiation annitowing target in food and water, prepared disaster,

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On January 2k further infernation relating to permissible levels of radiation was given PCDs. This consisted of the standards for chronic exposure to external radiation and to internal emitters (the Harwell values agreed upon by Groat Britain, Canada and the U.S.); and peralsaible emergency exposures for AE monitoring team personnel, established as follows:

- 10 r for those individuals expected to receive exposures in the course of their regular duties as AEC personnel.
- 25 r for those individuals not expected to receive exposure in the normal course of their duties.

Loan of Radiation Detection Instruments and Sources for Civil Defense Training Purposes

On January 5 a joint memorandum of the Directors of Research and Biology and Medicine to the Director, Isotopes Division, outlined the agreed-upon administrative and financial arrangements to govern the lean of radicactive isotopes for civil defense training. Costs of this program will be met from funds available to the Division of Biology and Wedicine.

During the month loans of instruments and/or sources were arranged through the Operations Offices and the Esotopes Division, ORGO, with approval of the FCDA, for civil defense training courses to be given by Ohio State University, University of Nebraska, Icwa State University, the cities of Milwaukee, Wisconsin, and Berkeley, California, and the State of Commectious.

Slides from "The Bffects of Atomic Wespons"

In response to requests for training material from graduates of the radiological monitoring courses held last year, Brockhaven Matienal Laboratory has arranged for the production of a set of 72 slides of selected figures, charts and photographs from "The Effects of Atomic Weapons." Information concerning procurement of slides has been furnished interested AEC organizations, the NSRB and the FCDA.

Radiation Instruments Branch.

The AEC spensored programs for the development of instrumentation techniques for possible civil defense use were summarized in a letter sent to the FCDA en January 9. The purpose of the letter was: (1) to inform the FCDA of the status of these programs, (2) to determ: no if they were interested in having the AEC instrumentation groups further concern themselves with civil defense instrument development, and (3) to request their advice relative to taking certain AEC developed prototypes through a consercial engineering phase.

A draft of a report summarizing Department of Defense spensored projects in radiation detection instrumentation has been completed and is being presently reviewed by the responsible military agencies prior to reproduction for AEC internal distribution. Some of those activities were briefly reviewed in a paper given at the Health Physics Conference sponsored by AML in Chicago on

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A paper on "The Role of Instrumentation in Civil Defense" was presented at the AIRE Sinter General Heating held in Mew York City on January 22-26-, 1951.

As was noted in the November Monthly Progress Report, the Radiation Instruments Branch has been directed by the General Manager to investigate various radiation detection instruments capable of detecting atomic weepons and dissionable materials which might be sauggled into the United States aboard ship. A secting was held-jointly with members of the Division of Military Application and the Hesearch Division on January 31, 1951 to discuss with a Dr. Elwood S. Gilfillan, Jr., of the Old Dominion Research and Development Corporation of Arlington, Virginia, his ideas on how this problem could be dealt with. As a result of this meeting, he was invied to submit a proposal covering a feasibility study.

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