B&M 1017

UNIVERSITY OF WASHINGTON
SCHOOL OF FISHERIES
SEATTLE 5, WASHINGTON
The Applied Fisheries Laboratory

405665

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Dr. Shields Warren
Director, Division of Biology
and Medicine
US Atomic Energy Commission
Washington 25, D.C.

Dear Dr. Warren:

Under separate cover we are forwarding at your suggestion a few photographs of some of the installations in the new Fisheries Center at the University of Washington.

The Applied Fisheries Laboratory has about completed the move to the new facilities. The equipment has been installed in most of the research areas and we are in a much better position to carry on our work assignment.

Problems that have top priority on our work schedule at the present time might be listed as follows:

1. Continuation of the long-range genetic effects of single doses of X-rays. Spawning will start early next month on the 1,200 adult rainbow trout (F_3) that should produce some 600,000 (F_4) offspring. The ancestral stock in this experiment were exposed to 50, 100, 500, 750 or 1000 r. Adequate controls have also been maintained.

This experiment was reviewed recently with Dr. Curt Stern and Dr. Max Zelle and their suggestions are being followed.

2. Studies continue on the analysis of the alpha contamination of the biotic material collected at Bikini and Eniwetok during previous expeditions to these two testing areas. The amount of alpha contamination is so slight that very special and painstaking procedures must be used to attain the desired accuracy.

3. With the new facilities available in the Fisheries Center, we have at long last started our experiment on the absorption studies of the traces of fission products remaining in the Bikini mud. We are using a variety of plants and animals in both fresh and salt water for these studies.

4. Basic studies on the effect of exposure of pure cultures of algae to mass doses of X-radiation are being continued. Population counts, morphological changes, and changes in physiology are evaluated in these studies.

5. Summation of the data from previous experiments continues. We are working on the recording of the data gathered at Bikini and Eniwetok in biotic absorption and concentration of the fission product decay series. These data when supported by laboratory experiments should form the basis for a useful summary on radiation contamination.

6. Work also continues on our attempts to evaluate the LD_{50} for a wide range of aquatic forms. We have concentrated on fresh water forms that live in the Columbia River in an effort to complement the program being carried on at the Hanford Works.

7. As you requested, during our visit at Hanford recently, we are increasing our cooperative efforts with the Aquatic Biology Group, General Electric Company, Hanford, to round out the program of studies being carried out on the river.

The construction of the new facilities for monitoring and research in the 100 F Area at Hanford will greatly facilitate this work.

We hope that it will be possible for you to keep us informed on developments in the Pacific testing area so that a continuation of the studies planned for that area may be resumed as soon as world conditions permit. A discussion of the program of the Applied Fisheries Laboratory to better synchronize it with the program of others interested in similar problems would be most helpful.

It was very helpful to discuss our problems with you during the recent meeting of the Advisory Board at Richland. We hope that the next time you are in this vicinity that you will have time to visit the laboratory.

Sincerely yours,

Lauren R. Donaldson

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Director

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