

Files

October 6, 1959

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Sciences Branch, Division of Biology & Medicine

BANNER CONTRACT, UNIVERSITY OF HAWAII

SYMBOL: BMES:IEW

On Thursday, September 24, I visited Drs. Banner and Helfrich and their assistants at the University of Hawaii to discuss progress of the poison fish project. In one sense this project is nearly completed and I expect that their most useful report will be forthcoming soon. This report will state that no relationship could be found between radioactivity and human poisoning from fishes. The report will simply confirm the already reported lack of relationship from the rather superficial studies of the Taft Sanitary Engineering Center of the U.S. Public Health Service.

I concur with Dr. Banner in feeling that the study should not stop at this negative point. They are interested in establishing two additional points, positive ones, for the record. They have made substantial progress toward isolating the poison. They have extracted the toxic component from fish filets and concentrated it at least 20 times in a solvent. Various chemical procedures are under way to directly identify the toxin. These studies are supported by the National Institutes of Health, jointly with AEC.

The second positive scientific problem concerns the source of the toxin in the ecology of the fishes. A fish becomes toxic and retains the toxicity in the laboratory for a year and longer. The toxin seemingly is appearing in new places and perhaps disappearing elsewhere. There would seem to be a fish food organism that produces the toxin but which one, if any, is not known. Banner proposes to make further studies with this objective in mind.

Last year poisonous fishes appeared in Majuro Atoll. These fishes were collected on 3 occasions by Drs. Banner and Helfrich. On bringing the fishes to the Laboratory it was found that they were only slightly toxic. Since quantity of toxin is necessary for studies, they collected at several places but hit the jackpot at Palmyra. Red Snappers collected there were highly toxic without exception. It is estimated by Dr. Helfrich that the 300 pounds of filet will yield about .7 pounds of extract at its present stage, enough for six months work. The Air Force sends a

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maintenance crew to Palmyra about every six months and an inspection crew about every two months. Although the two months trips serve an additional purpose of allowing fishing parties by the Air Force brass, the maintenance trips hold promise of permitting continuing collection of samples at nominal cost.

On a one time basis Dr. Bummer proposes to make an intensive ecological survey of Palmyra to attempt to discover the source of the toxin. He hopes to arrange for an Air Force or Navy crew to transport about 15 faculty members and graduate students to Palmyra for this study. He estimates that these persons on the Hawaii staff would go at no cost, save food, roughly \$300. He also estimates that if it should be necessary to charter a plane to go down the total cost would be between \$3,000 and \$5,000. Such a study should be supported as being within our interest. It would be particularly appropriate to make the study at Palmyra with the high incidence of toxic red snappers.

Bummer and his staff seemed very competent and I believe that support should be continued until it can be determined whether a toxic fish food organism is likely to be found.

cc: Dr. Shilling
Mr. Whitnah

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