

FOR THE MONTH OF FEBRUARY 1947.

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The month of February was devoted to serious attempts to organize and complete the analysis of accumulated data in preparation for the expected period of increased research activity. The programs and projects formulated and discussed in the conferences during January were activated.

I. The basic program of the Applied Fisheries Laboratory at the University of Washington, that of measuring the effect of exposure of aquatic organisms in various stages of development to X-rays continued.

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\*Sections I and II.

The data accumulated during the past three years of work on this portion of the project are being summarized for preparation of a sectional report.

The eggs produced from the second generation of parents derived from parent fish that had been exposed to 100 r or from the "controls", hatched during January of 1947. The remaining "fry" that developed from these eggs continue to show the same mortality differences as were indicated during the egg stages.

The mortality differences as of February 20 (120 days after spawning) when tested for significance with the "t" test showed that the second generation offspring from irradiated parents had a significantly higher mortality than those of the controls.

\*Section numbers refer to the Project Chronology Chart, revised January 9, 1947.

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**Sections III and IV.**

The sockeye salmon data did not receive further analysis during the month.

**Section V.**

The Columbia River steelhead data has not been completed.

**Sections VI, VII, and VIII.**

Final reports have been submitted.

**Section IX.**

This preliminary rainbow trout experiment has not been formulated into a final report.

**Section X.**

Completed and a final report submitted.

**Sections XI and XI-a.**

These data are being prepared for the final report that we hope to have ready by spring.

**Section XI-b.**

The fish that are being retained for spawning and further study in this section were weighed and measured individually. A total of 442 fish remain. Of this total, our examination at the time of weighing and measuring indicated that 382 fish would probably spawn this spring. These potential spawners were retained in the large pond where they can be segregated as they reach sexual maturity. The balance of the fish, or 60, were placed in a small run way, we believe that these fish will not reach sexual maturity. Included in the group confined to the small pond were most of the small and malformed fish produced by parent fish that had received large amounts of irradiations with X-rays.

3

Two females from this group spawned during the month and their eggs were fertilized with sperm of male fish from parents that had received the same X-ray treatment.

As this group of fish mature the plan will be to mate fish that have received the same treatment. It would be possible to cross-breed some of these fish in such a way that the differential effect on the sexes could be determined. Our present assignment, however, does not call for such a procedure.

Section XI-c.

This very important block of data has not been analysed further.

Sections XII, XIII and XIV.

The data descriptive of the work in this section are ready for fashioning into a final report.

Sections XV - XVII.

Study of the scales of the six (6) fin marked steelheads captured on the lower Columbia River in the commercial fishery indicate that they were from the releases made into Icicle Creek during the spring of 1945. It is expected that others of this group will return to Icicle Creek this spring. Arrangements are being made with the Fish and Wildlife Service to attempt to make such recoveries at their Leavenworth Station.

Section XVIII.

The work on goldfish awaits summarization and reporting. II. The studies on absorption and retention of radioactive materials have remained somewhat in the background. We hope that equipment will soon be available to carry on this work.

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III. Bikini studies, both those initiated during the tests and those planned for the future continue to occupy our attention.

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