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2. A chemical analysis was made on June 14, July 12 and August 18. Oxygen, pH, and carbon dioxide showed little change in comparison with corresponding times during the preceding summer.

3. Plankton samples were collected on these same dates both for qualitative and quantitative examination. Examination of these samples has not been completed yet, however, gross observation revealed little change from the previous summer.

4. Bottom fauna samples were also taken on these dates and showed approximately the same relative numbers as last year but were much higher than in previous summers. This gave fairly clearcut evidence of the effect of sewage on bottom fauna. As in previous summers the predominant types consisted of Chaoborus and Tendipeds.

5. Turbidity, temperature and physical characteristics were taken. These were not significantly different from the previous summer, however, the Secchi disk studies revealed that in the last two summers, the lake has become much more turbid than in previous years.

The sewage treatment plant worked efficiently throughout the summer, and on no occasion did unfiltered sewage enter the lake as far as could be determined. The lake is serving effectively as a lagoon type treating system at least as far as effective utilization of effluent organic compounds are concerned.

Assisted by Hugh Bradford House.

Ecology of Third Creek and Associated Beaver Dams
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University of Wyoming
Project Number 108

During the summer of 1960 a comparative aquatic ecological study was carried out on Third Creek which was to be correlated with an age-growth study of brook trout in progress for the past three years on the same creek. The ecological study was done on both forks (west and east) of Upper Third Creek. All samples were collected from a total of five stations on both forks. The study included mapping, temperature determinations, chemical analyses, benthos, plankton, shore invertebrates, botanical observation and fish studies.

Third Creek is located in the North District of Grand Teton National Park. Five stations were set up for the study. The temperature fluctuated as much as four degrees Fahrenheit. Bottom temperatures for the five stations were Station I, 49°F; II, 54°F; III, 54°F; IV, 59°F; V, 66°F.

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Dissolved oxygen was 13.0 ppm in Station I, 9.7 ppm in II, 10.2 ppm in III, 8.9 ppm in IV and 9.3 ppm in V. Methyl orange alkalinity was 107 ppm in I, 108 in II, 96 in III, 51 in IV and 82 in V. Free carbon dioxide was 9 ppm in I and II, 5 in III, 7 in IV and 1 in V. pH ranged from 7.2 in Station IV to 7.7 in Station V.

Benthic organisms were very similar. Only the number varied. In Station I there were 440 Tubifex and 95 Chironomids while in Station II there were 20 Tubifex and 518 Chironomids. Chironomids and Tubifex were the most prevalent families in all Stations.

In the shore invertebrates again the number rather than the kind was the variable element. Baetidae, Gammaridae and Corixidae were the most abundant families. In Station V, however, Notonectidae replaced Corixidae.

The botanical survey revealed the predominance of Potamogeton alpinus and P. pectinatus in Stations II, III, IV, and V. Myriophyllum was abundant in III, IV and V. Spirogyra and Hippurus vulgaris were predominant in Station I. Chara vulgaris was also prevalent in Station II.

Aquatic insects and zooplankton were the dominant food elements in the fish stomachs analyzed to date.

A Field Study of the Uredinales of the Jackson Hole Area of Wyoming
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Project Number 107

Collections of rust fungi were made in the general area of Jackson Hole from August 16th to September 6th, inclusive. Enroute to Jackson Hole, one day was spent in the foothills near Pinedale, Wyoming. Collecting in Jackson Hole was done mostly in the following localities: String Lake, Indian Paint Brush Canyon, Phelps Lake, Death Canyon including the switchbacks on the trail to Alaska Basin, Teton Pass, Gros Ventre road and Slide Lake, and Togwotee Pass, especially on and around Breccia Peak. Most of the more interesting records were from the Togwotee Pass area.

One hundred twenty-eight specimens of 48 species were collected. Six of the species were new records for Wyoming. Seventeen host species were found that had not been reported previously as parasitized in Wyoming.

A complete list of species collected is on file at the Biological Research Station.

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