

above were much diminished in size and would plainly contain no water at all at the end of the month. Unfortunately I did not ascertain this and what became of the fairy-shrimps they contained, because we sailed eastward shortly afterwards (July 24).

The typical tundra ponds or lakes are very much the same all along the arctic coast of northwest America, so it is not necessary to describe them, at any definite locality of the coast west of Mackenzie river, except on Herschel island (see later). In contrast to the beach ponds and lagoons they do not depend to any extent upon the configuration of the coastline of each particular place, because they are generally found only at a certain distance inland. There are, however, often ponds which represent a transition stage between the beach ponds or lagoons and the true tundra ponds; and such ponds are perhaps more likely than the freshwater bodies farther inland to contain Phyllopods. The photographs taken of the ponds along this coast during the expedition give a better idea of their appearance than many words of description.¹

Those of the tundra ponds which contain water all the year round, are frozen to the bottom, unless they are more than one fathom deep, during the winter, and are generally covered with a deep layer of snow, except where the wind has removed this from spots on the ice surface. In the beginning of May (observations from Demarcation point, 1914), the power of the sun on clear, calm and warm days is so great that the ice in the very shallow ponds begins to melt, and the dark mud bottom to thaw, though the temperature of the strata (ice, mud bottom, dead leaves, etc.) on May 4 was only from 32° to 32.5° F. (air 29.5° F.), and the ground was still frozen solidly. Large hibernating, dipterous larvæ were then found in some of these ponds. The further melting of the shallow ponds at Demarcation point in 1914 was delayed until the middle of the month of May, owing to more wintry weather and cold nights, and none of the deeper ponds or lakes showed any signs of melting. On May 16 there was only a light snow layer on the tundra, and some of the shallow ponds were quite free of snow or ice, others only partly so, and often communicating with the melting water in the surrounding swamps. Their water had a temperature of 35° F. at 7.30 p.m. (air 29° F.). Then followed several days of colder weather, forming new ice on the melted ponds and snow upon the tundra, which, however, soon melted away.² Besides the dipterous larvæ mentioned above a number of other aquatic insects (other diptera, collembola, dytiscids, etc.), snails (*Aplexa hypnorum*),³ etc., were now found in the ponds. My observations for the period from the end of May to the middle of July, 1914, are in Camden bay (Collinson point and Konganevik).

On May 26 the tundra was almost impassable owing to soft or melted snow, though the vegetation and invertebrate animal life had not yet progressed much in development, and the rivers were breaking up. On the last day of the month the tundra still looked wintry, and the vegetation was far behind. The deeper ponds were mostly melted, but had ice at their bottoms for long stretches or were partly covered with ice, the latter reaching to the bottom. The overflow from the melted snow assembled in temporary pools and streams, while the higher parts of the tundra still had much snow. There were, however, large, bare stretches, especially nearest the coast. I consider it very possible, that the cold and cloudy weather at the end of May and beginning of June, 1914, delayed the arrival of the spring (summer) that year beyond the normal. The vegetable and animal life of the freshwater ponds, even if these were only partly melted, however, progressed well, as proved by the number of dipterous larvæ and imagines, copepods, (*Cyclops magnus* and *C. vicinus*)

¹ See Plate IV in Vol. III, Part K of these reports.

² On May 21 the thermometer stuck into the mud of a shallow pond (water about one inch deep) showed 55° F. at 5 p.m. (Air about 35° F.), which indicates how warm the water in these ponds can become even so early in the spring.

³ See Vol. VIII., Part A, this series of reports.