

Straits, it is hardly possible that a counter current should exist in the intervening portion between *Novaya Zemlia* and *New Siberia*. Besides, the prime movers of the great Arctic current, which flows during summer from the Siberian coasts towards the Atlantic, namely, the Siberian rivers, are frozen during the winter, and have, consequently, no influence on the currents of the Siberian Sea. Hence there is every reason for concluding that this great Arctic current, bringing the drift ice from the Siberian shores, relaxes in its force by the end of summer, so that the gulf stream, which during spring and summer was checked and hemmed in by the ice between *Novaya Zemlia* and *Spitzbergen*, makes at last its way towards the Siberian coast, carrying with it whatever drift ice may have remained in that region, and actually clearing the way for an easy navigation.

"In corroboration of this result, an important physical fact relative to the distribution of temperature may be adduced. Taking the invaluable data of Professor Dove as a basis, I have laid down on twelve Polar charts the lines of equal temperature of every month in the year; and from a careful study of these lines, I have deduced the following remarkable conclusion:—There exists a moveable pole of cold, which in January is found on a line drawn from *Melville Island* to the mouth of the *River Lena*, and which gradually advances towards the Atlantic Ocean, till in July it is found on a line between *Fury and Hecla Strait* and *Novaya Zemlia*, whence, in the succeeding months of the year, it gradually recedes to its former position. It is clearly manifest that this movement of the temperature is occasioned by the direction of the currents and the presence of the Polar ice. The greatest mass of this ice is (it is scarcely necessary to say) formed where the winter cold is the greatest, namely, in the region of *New Siberia*, on the Asiatic side, and in that of Parry group on the American side; and when broken up and driven away into the Atlantic, masses of ice (as is well known) in their progress reduce the temperature wherever they go. Hence, in January and February, *Melville Island* and *Boothia Felix* are the coldest stations on record on the American side, being as much as 10° to 15° colder than *Igloodik* and *Winter Island*; whereas, in July, they are from 5° to 7° warmer than those places, owing to the ice having floated down in the direction of the latter. On the Asiatic side, the difference is still more striking. In January, the mean temperature along the north-eastern shores of *Siberia*, is from 40° to 50° lower than that of the western shores of *Novaya Zemlia*; while in July, it is as much as 20° higher. It must be borne in mind that Wrangell and Anjou, in their memorable expeditions, selected the most favourable of the winter months for their journeys over the ice, at a season when they hoped to find the ice most solid and of the greatest thickness. Nevertheless, they invariably found the 'wide immeasurable ocean' before them, at a comparatively short distance from the land; and this, too, to the north of what is actually the coldest region on the face of the earth. Now, it would be a monstrous anomaly, if at some distance to the west, where a warm current is known to prevail, and where the temperature is from 40° to 50° higher, we should not find the same 'wide immeasurable ocean.'

"I could adduce a number of facts from the evidence of the Russian surveyors and others strongly corroborative of these views, but refrain from doing so in deference to your space. But I think it important to refer briefly to what the well-known Norwegian naturalist Keilhau has informed us of with respect to the climate of *Bear* (called also *Cherry*) *Island*. This island is situated between *North Cape* and *Spitzbergen*, in the same latitude as *Melville Island*, and is exposed to the entire influence of the surrounding ocean. Keilhau tells us that in the year 1824, during the whole of the autumn and winter, the weather was mild, and at Christmas there was rain (this in the latitude of *Melville Island*, where the mercury is frozen during five successive months). February was cold and clear, but the cold never too great for out-door work. On the 10th of that month, the sun was seen