

current in joining and attempting to cross the vast expanse of the river fresh water going straight easterly out to sea, is compelled to coalesce with it, and of necessity the united current must be deflected many degrees southerly leaving but a fag, almost stagnant, remnant to maintain the level along the New Brunswick shore. So much for the mildness of Belle Isle current at the meet.

And I imagine that the experience of the warm current before the union is in many respects of an equally disabling nature. It is presumably comparatively inconsiderable in volume, and comes a long journey after being separated from the mother stream amid ocean, and is continuously all along that journey in close contact both below and laterally with water of much lower temperature pressing in to intercept or, at all events, to impede its progress, dashing it against islands and into bays and swirling around curves, that its energy is well nigh exhausted on coming to the meet. I have endeavored to depict the hindrances to the progress of each current as I imagine is the fact. The collision of such enfeebled currents would be mild, and mild we found it to be.

The phenomena of the net and the gentle ripple were witnessed by several gentlemen on board, but only one, as far as I recollect, offered an explanation, which was that a branch of the Gulf Stream enters the St. Lawrence somewhere about Cape Breton, and pushes its way around Prince Edward Island and northward along the New Brunswick shore till it meets the Belle Isle current where the net and the purling were seen. The theory or fact, whichever it be, should be of interest to all loyal Canadians because as we shall see later it may contain the embryo thought of vast resources along Empire lines hitherto undreamt of.

And now let me relate my next and last experience with colliding waters. This time it was amid ocean on a voyage from New York to Jamaica when we entered upon the Gulf Stream as we journeyed southward. It was a lovely calm spring Sunday in the early eighties. Observing a long line of gentle agitation ahead of the steamer, I enquired of a Baptist Minister, with whom I was in conversation and who had been over the course more than once before, what it could be. "A school of small fish frightened at the approach of the steamer," was his answer. Doubting the correctness of that statement I enquired "How far out from the nearest land may we be—say from Cape Hatteras?" "Two hundred miles," was the prompt response.

"Did you ever read or know of a school of baby fish that far afield from shore," I again enquired. Reflecting for a moment he thought not. By this time we had come abreast of the phenomenon and perceived quite distinctly the edge of one water—the one coming northerly towards us—to be slightly elevated above the level of the other, and was gently spreading its tiny margin quite placidly over its neighbor water. The higher level and the gentle overlapping were distinct and quite visible to both of us. It was the Gulf Stream in mild collision with the dense Arctic element on its travels to the equator. The overlapping was, or it seemed to me to be, the natural sequence to the junction and coalescing of the lighter and loftier water with the denser and weightier water from the north. Here my experiences end!

Now, the Gulf Stream is known to be about 12 degrees warmer and of course lighter than the Arctic water. I am now referring more particularly to the strong current curving round Newfoundland which, from its greater compactness, would likely be found at the point of colliding to crowd the water of the lighter and, perhaps, more leisurely stream; and before shouldering and ducking under may cut a considerable distance into the side of the stream, thus throwing off westerly a section that would constitute the tramp stream we are in quest of. The cut thus made would, of course, be permanent perforce of the continuous pressure from behind both waters. The new stream thus formed would be given a westerly direction inshore, and if really existent must lave some part of the Massachusetts or Canadian Atlantic coast line.

Sir Wyville Thompson, in command of the "Challenger," on leaving the Bermudas for Halifax, loitered purposely for some days to exploit the stream in search for scientific data on the depth, the breadth and the swiftness of the current, etc. But I can find no reference in the two handsome volumes in which he reports the voyage—no reference whatever to the tramp stream we are here discussing. But Captain Nares, in a small volume of his own on the voyage of the "Challenger," records an incident of great significance in this connection, omitted by Sir Wyville in his official narrative of the voyage, which I shall have pleasure in quoting later.

The sea currents, like aerial currents, are marvels of Almighty designing wisdom. Stagnation nowhere—perpetual movement everywhere and ever forward, yet in various and