

return currents are very visible on the chart taking this direction, indicated by marked deflections of the isothermal lines. The most marked is the Labrador current, which passes down inside the Gulf-stream along the coasts of Carolina and New Jersey, meeting it in the strange abrupt 'cold wall,' dipping under it as it issues from the Gulf, coming to the surface again on the other side, and a portion of it actually passing, under the Gulf-stream, as a cold counter-current into the Gulf of Mexico.

Fifty or sixty miles out from the west coast of Scotland, I believe the Gulf-stream forms another, though a very mitigated, 'cold wall.' In 1868, after our first investigation of the very remarkable cold indraught into the channel between Shetland and Færoe, I stated my belief that the current was entirely banked up in the Færoe Channel by the Gulf-stream passing its gorge. - Since that time I have been led to suspect that a part of the Arctic water oozes down the Scottish coast, much mixed, and sufficiently shallow to be affected throughout by solar radiation. About sixty or seventy miles from shore the isothermal lines have a slight but uniform deflection. Within that line types characteristic of the Scandinavian fauna are numerous in shallow water, and in the course of many years' use of the towing net I have never met with any of the Gulf-stream pteropods, or of the lovely Polycystina and Acanthometrina which absolutely swarm beyond that limit. The difference in mean temperature between the east and west coasts of Scotland, amounting to about 1° C., is also somewhat less than might be