

3. The variation, given in Des Barres' charts, was probably *Erroneous Variation.* correct for the time when the charts were made; and though greatly changed since, has been copied nevertheless into most of the charts in general use. For instance, in some of those charts the variation at Anticosti is given as 17° west, too little by three-quarters of a point. The effect of this upon the run of a vessel from the entrance of the Gulf to Anticosti, or from the latter to Point de Monts, will be obvious to any seaman, and has doubtless occasionally been one cause of shipwreck.

4. There is another source of error, independent of charts *Deviation, or Local Attraction.* altogether, which it is astonishing to find obtaining so little attention, particularly in the merchant service, considering how much has been written concerning it of late years. I allude to the deviation, or local attraction of the needle. This subject may be seen fully treated in Mr. Barlow's treatise on magnetic attraction; and Scoresby in his works on the arctic regions, and on the Greenland whale fishery, gives many valuable and practical directions respecting the methods available under different circumstances, for finding its amount in various positions of the ship's head, and applying a correction accordingly to the course steered. The amount of error from this cause will be a point of the compass in most vessels, and, in particular circumstances, may become twice that quantity in those latitudes.

5. An opinion is prevalent that the compasses of vessels are *Magnetic action of the shore.* disturbed in the Gulf and River St. Lawrence, and such disturbance has been attributed to the magnetic ores of iron in the hills, particularly those of the north coast. The magnetic oxide of iron does exist abundantly, and attracts the needle very powerfully at some points, particularly along the coast from the Bay of Seven Islands eastward. Among the Mingan Islands, we found

the water, a superior line should be employed for the purpose. When sailing at a rate not exceeding 5 knots, bottom may be struck in 50 fathoms of water, and when going slower, at still greater depths; but the hollow cylinder of the wings will seldom bear the pressure, at depths much exceeding 100 fathoms. The deep sea lead line, with the machine attached, should be passed forward, from the weather quarter of the vessel, outside all, to the weather cathead, or bowsprit end. If going slow, it may be dropped, very conveniently, from the weather gangway, aloft the fore rigging, taking care, in all cases, to drop it perpendicularly into the sea, and not to throw, or swing it, as is sometimes carelessly done. An iron stanchion, to ship and unship, on either quarter as required, with a small snatch-block attached, to pass the line through, will enable 4 or 5 hands to walk the lead line in with ease and expedition. Mr. Massey has recently much improved this machine.