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VARIATION OF THE COMPASS,

On the 8th of June, latitude 68° 10', longitude 55° 26', the aberration was found to be three points in the morning, and 2½ in the evening.

On the 9th of July, it was found to be about four points: and, on board of the ship Harmony, a whaler of Hull, it was found, at the same time, to be greater.

On the 1st of September, near Lancaster's Sound, the aberration in the Alexander seemed to be so great, as to render the bearings of the land of no value.* In a thick fog, on the 4th, and the ship having considerable motion, all the compasses ceased to act.

On the 7th of September, an aberration of four points was again found; that is, two points on each side; for, the wind being S.S.W., the ship lay on one tack W.N.W., and on the other E.S.E.; on the former tack the wind appearing to be S.W., and, upon the latter tack, to be South. At the same time, by Lieut. Parry's report, it appeared that the Alexander's aberration had been, in one instance, five points; but this was probably owing to the removal of same casks of iron from the quarter-deck.

- It is not, therefore, wonderful that the whalers should so often complain of the total uselessness of the compass in these seas.

On the 4th of June, 1818, in latitude 65° 44', longitude 54° 46', observations were made, as nearly as possible, on the four cardinal points, which gave the following results:

With the ship's head North, the variation appeared to be 60° 50' 15"; ship's head South, 52° 25' 0"; ship's head E.S.E., 48° 10' 0"; ship's head West, 77° 33' 30": the mean variation, 59° 44' 41": the greatest difference, 29° 23' 30".

On the 9th of June, the variation was observed by azimuth, on the four cardinal points, and the mean amounted to 5° more than the true variation, as found on an iceberg, which was 67° 10'.

From these, and many other experiments, it appeared,

1st, That there is a point of changet in the aberration, occasioned by the attraction of the ship.

2d. That the point of change is not the magnetic north, but near it, in the ship Isabella.

3d, That it varies in different ships, and is affected by increase or decrease of variation, by proximity to land, or to another ship.

4th, That the point of change may be found by azimuth, or by the bearing of a distant object, situated near the magnetic north, or in any other direction, if that cannot be had.

The rule, therefore, is,

Take an azimuth, or the bearing of a very distant object by the azimuth compass, with the ship's head at different points, East and West of North, until the points of least and greatest aberration are found; the mean of these will be, nearly, the point of change.

The several facts collected from all the experiments made at different times during the Expedition to Baffin's Bay, 1818, were as follow:

* See the Voyage of Captain Ross, quarto, page 184. + The POINT of CHANGE is the point on which there is the least deviation, for aberration, from the correct bearing by compass.

1. That

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