

**NAVIGATION OF THE ATLANTIC OCEAN; WITH
AN ACCOUNT OF THE WINDS, WEATHER, AND
CURRENTS FOUND THEREIN THROUGHOUT THE
YEAR; ACCORDING TO THE MOST APPROVED
AUTHORITIES, INCLUDING EXTENSIVE
EXTRACTS FROM THE NAUTICAL MAGAZINE**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649655694

Navigation of the Atlantic Ocean; With an Account of the Winds, Weather, and Currents Found Therein Throughout the Year; According to the Most Approved Authorities, Including Extensive Extracts from the Nautical Magazine by A. B. Becher

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Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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THE
ATLANTIC OCEAN.

INTRODUCTION.

THE substance of the following pages is gathered from the valuable work of Captain KEBHALLET, compiled from the voyages of the most celebrated navigators, and also contains information contributed to the NAUTICAL MAGAZINE by various commanders of our Mercantile Marine. It originally appeared in that periodical, and in its present form has passed through three editions. The ready manner in which these have been taken up affords good promise that the present, in its still more attractive form, will prove even more acceptable.

The subjects which it embraces are of much importance to the navigator ; for, next to a fair wind, to know the season at the place to which he may be bound, how to go there, and when to go with regard

to weather, is most desirable ; and such is the object briefly treated in these pages.

To the foregoing introduction to the fourth edition of this little work may be added that still further improvements in it have been made by the addition of information derived from the voyages of recent navigators, the Admiralty Wind and Current Charts, and records of the Meteorological Office.

THE ATLANTIC OCEAN.

CHAPTER I.

General Winds: Theories of Origin and Cause—Torrid Zone—Trade Winds and their Limits—Deviation—Variable Winds—Seasons—The Frigid and Temperate Zones—Prevailing Winds of North and South Atlantic.

THE basin of the Atlantic Ocean (North and South), divided unequally between the West coasts of Europe and Africa and the East coast of America, presents a deep valley which appears bounded on the North and South only by the poles. Fields of ice have arrested the progress of navigators who have endeavoured to explore those regions.

In order to consider the winds common to this ocean, we shall divide it into three regions: the first, that comprised between the parallels of 30° North and South latitudes; the second, between the latitude of 30° South and the South pole: the third, between 30° North and the North Pole. We shall divide each of these two last named regions into two zones; the temperate zone, extending from the parallel of 30° to 60° , and the frozen zone between the latitude of 60° and the poles.

We shall first consider the winds of each of these divisions of the ocean at a distance from the coast; and then, commencing at one extremity, shall describe the winds generally met with near the shore.

Origin and Causes of the Winds.—The winds owe their origin to all actions which disturb the equilibrium of the atmosphere. Science has endeavoured to determine the cause of wind and the general laws by which it is governed. Philosophers attribute winds to the heat of the sun, different and variable on the surface of the earth, in conjunction with the diurnal motion of the earth itself.

The differences between the temperature of the polar regions and of those near the equator being very great, they assert that there must, of necessity, be a constant change of air between these regions. Thus the cold and dense air of the polar regions tends to replace the warm and expanded air of the equatorial regions, which latter, rising and forming a higher current, should transfer itself towards the North and South, in order to restore the equilibrium.

If the earth were still, the winds on its surface would generally blow from North and South, according to the hemisphere in which they are; but the earth, turning from West to East on its axis, with a quickness which increases in proportion as the equator is neared; the consequence is, that in passing from high latitudes towards that great circle, currents of cold air arrive progressively in those regions where the rotary motion is more considerable. Not being able

to participate in this movement, on account of their want of cohesion with the earth, those winds take an opposite or inverted direction from that of the rotation of the globe, namely, from East to West.

Thus, the rotatory motion of the earth, combined with the different temperatures of the surface, causes the currents of air, coming from the North and South in each hemisphere, to deviate from their courses, and incline from the N.E. and S.E., producing the winds called the general or Trade winds of the torrid zone.

Without entering into the numerous theories on this subject, and the various objections to each, we shall confine ourselves to a statement of the leading authenticated facts regarding the winds of the Atlantic Ocean; the knowledge of which is of such vast importance in general to navigation.

North and South Polar Winds.—The two currents of air, blowing from the North and South poles towards the equator as above mentioned, are termed polar winds, North or South, according to the hemisphere in which they are found.

North and South Tropical Winds.—On the contrary, those are called North and South tropical winds, which, from the equator, are directed towards the poles. These last appear to be counter-currents to the polar winds.

The Torrid Zone Trade Winds.—In the northern hemisphere, the polar winds blow from the N.E.; in the southern hemisphere from the S.E.; and they take a more easterly direction in proportion as they

approach the equator. Between the tropics, these winds have received the more common name of "*Trade Winds* of each hemisphere." They are also called the "general winds of the torrid zone." These winds render the passage across the Atlantic, from the Old to the New World, quick and easy.

The Trade winds appear to be the only primitive winds. Where they are established, the weather is always fine, and the sky generally clear. If they cease for awhile the sky becomes clouded, and, in certain parts, storms are experienced, the more lasting and severe in proportion as the places are more or less distant from the equator.

Those regions where the Trade winds do not prevail, are constantly exposed to stormy and tempestuous weather; where they cease from any cause, bad weather is experienced, and it has been remarked that they always return with some violent re-action, or with torrents of rain.

The Trade winds to the North and South of the equator have similar characters, as will be hereafter described.

Limits of the Trade Winds.—The polar limits of the Trade winds from N.E. and S.E. generally extend on each side of the equator to the parallels of 30° North and South latitude. Nevertheless, this limitation differs greatly in some parts of the ocean, because it is influenced by temperature; and it varies about 3° North or South, according as the declination of the sun is North or South.