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# “ WRINKLES ”

IN

# PRACTICAL NAVIGATION.



BY

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*Fellow of the Royal Geographical Society.*

*Extra Master. Passed in Steam, Compass Adjustment, &c.*

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WITH 76 ILLUSTRATIONS.

LONDON:

GEORGE PHILIP & SON, 32 FLEET STREET, E.C.

LIVERPOOL: CAXTON BUILDINGS, SOUTH JOHN STREET, AND ATLAS BUILDINGS, 49 & 51, SOUTH CASTLE STREET.

1881.



99-40-8678



TO

SIR THOMAS BRASSEY, K.C.B., M.P.,

CIVIL LORD OF THE ADMIRALTY,

WHOSE WELL-KNOWN INTEREST IN THE SCIENCE OF NAVIGATION,

AS WELL AS PERSONAL COURAGE AND NAUTICAL SKILL,

WERE SO WELL ILLUSTRATED BY HIS

CIRCUMNAVIGATION OF THE GLOBE

IN COMMAND OF HIS OWN YACHT,

THIS VOLUME,

BY ONE WHO HAD THE PRIVILEGE OF A PLACE IN THE FAMOUS

“SUNBEAM,”

DURING A PORTION OF HER ADVENTUROUS VOYAGE,

IS RESPECTFULLY AND GRATEFULLY INSCRIBED.



## P R E F A C E .

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THE particular aim of this treatise is to furnish seamen with thoroughly *practical* hints, such as are not found in the ordinary works on Navigation; or, if they do exist, are scattered through so many pages, and so smothered by their surroundings, as to require too much digging out—too many shells to be cracked before arriving at the kernel—a tedious process, which the practical mind recoils from: further, to indicate the shortest and most reliable methods, as well as the instruments and books necessary to enable the Navigator (amateur or professional) to conduct his vessel safely and expeditiously from port to port.

The various nautical instruments are treated of separately, their peculiarities explained, and the errors to which they are liable pointed out, with the best means of remedying them, or of compensating their effects.

The volume contains but little that is claimed as strictly original: it is based upon life-long observation, matter gleaned from the works of men of repute, and information derived from intercourse with shipmates and the cloth generally.

The mass of material at one's disposal renders its clear presentment within a moderate compass somewhat difficult, but great pains have been taken to select only the really essential problems, and, in view of those to whom the work is addressed, to choose the simplest possible language. If the style is thus more familiar

than dignified, it is hoped that it may with greater success attract the ear, and rivet the understanding of the nautical reader, thereby awakening and sustaining such an interest in the subject as will be most likely to create mental impressions of a lasting kind. Diagrams accompany many of the examples by way of illustrating and giving prominence to some of the more "important simplicities" of navigation, which are unhappily too often disregarded by reason of their true significance not being understood and appreciated. To this end, also, a free use has been made of capitals, and certain words and sentences are rendered conspicuous by a change of type when it appears advantageous to do so.

If occasionally the reader of quick apprehension is irritated by too great minuteness, he must remember that as far as possible every imaginable question has to be anticipated, and that a single point left unexplained may render useless an otherwise careful description.

Every sailor knows what is meant by a "Wrinkle"; some possess more than others, and in penning the following pages the writer has endeavoured to display his to the best advantage, and place them "cut and dried" at the disposal of such members of the profession as have had a less varied experience than himself, and fewer facilities of acquiring an intimate knowledge of this branch of their business.

Methods have been selected which offer peculiar advantages in the matter of *brevity of solution*. To seamen this is very important, as all know; at the same time *accuracy of the results* has been kept in view, and care taken that the latter quality is not unduly sacrificed to the former.

Rigorous exactness of working—so necessary in the schoolroom—is but seldom required on board ship; it is, therefore, only introduced in the process of rating chronometers, and one or two other instances, where, from the nature of the question, one is