A TREATISE ON METEOROLOGICAL INSTRUMENTS: EXPLANATORY OF THEIR SCIENTIFIC PRINCIPLES, METHOD OF CONSTRUCTION, AND PRACTICAL UTILITY

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NEGRETTI AND ZAMBRA

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METHOD OF CONSTRUCTION, AND PRACTICAL UTILITY.

BY

NEGRETTI & ZAMBRA,

METEOROLOGICAL INSTRUMENT MAKERS TO THE QUEEN, THE ROYAL OBSERVATORY, GREENWICH, THE BRITISH METEOROLOGICAL SOCIETY, THE BRITISH AND FOREIGN GOVERNMENTS, ETC. ETC. ETC.

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PREFACE.

The national utilisation of Meteorology in forewarning of storms, and the increasing employment of instruments as weather indicators, render a knowledge of their construction, principles, and practical uses necessary to every well-informed person. Impressed with the idea that we shall be supplying an existing want, and aiding materially the cause of Meteorological Science, in giving a plain description of the various instruments now in use, we have endeavoured, in the present volume, to condense such information as is generally required regarding the instruments used in Meteorology; the description of many of which could only be found in elaborate scientific works, and then only briefly touched upon. Every Meteorological Instrument now in use being fully described, with adequate directions for using, the uninitiated will be enabled to select those which seem to them best adapted to their requirements. With accounts of old or obsolete instruments we have avoided troubling the reader; on the other hand, we were unwilling to neglect those which, though of no great practical importance, are still deserving of notice from their being either novel or ingenious, or which, without being strictly scientific, are in great demand as simple weather-glasses and articles of trade.

We trust, therefore, that the work (however imperfect), bearing in mind the importance of the subject, will be acceptable to general readers, as well as to those for whose requirements it has been prepared.

The rapid progress made in the introduction of new apparatus of acknowledged superiority has rendered the publication of some description absolutely necessary. The Report of the Jurors for Class XIII. of the International Exhibition, 1862, on Meteorological Instruments, fully bears out our assertion, as shown by the following extract:—

"The progress in the English department has been very great;—in barometers, thermometers, anemometers, and in every class of instruments. At the close of the Exhibition of 1851, there seemed to have arisen a general anxiety among the majority of makers to pay every attention to all the essentials necessary for philosophical instruments, not only in their old forms, but also with the view of obtaining other and better forms. This desire has never ceased; and no better idea can be given of the continued activity in these respects, than the number of patents taken out for improvements in meteorological instruments in the interval between the recent and preceding exhibitions, which amount to no less than forty-two." * * * "In addition to numerous improvements patented by Messrs. Negretti and Zambra, there is another of great importance, which they did not patent, viz. enamelling the tubes of thermometers, enabling the makers to use finer threads of mercury in the construction of all thermometers; for the contrast between the opaque mercury and the enamel back of the tubes is so great, that the finest bore or thread of mercury, which at one time could not be seen without the greatest difficulty, is now seen with facility; and throughout the British and Foreign departments, the makers have availed themselves of this invention, the tubes of all being made with enamelled backs. It is to be hoped that the recent exhibition will give a fresh stimulus to the desire of improvement, and that the same rate of progress will be continued."

To fulfil the desire of the International Jury in the latter portion of the above extract will be the constant study of

NEGRETTI & ZAMBRA.

1*st January*, 1864.

TABLE OF CONTENTS.

CHAPTER I.

Instruments for Ascertaining the Atmospheric Pressure.

CHAPTER II.

Syphon Tube Barometers.

CHAPTER III.

Barographs, or Self-Registering Barometers.

CHAPTER IV.

Mountain Barometers.

CHAPTER V.

Secondary Barometers.

CHAPTER VI.

Instruments for Ascertaining Temperature.