

**A COLLECTION OF
METEOROLOGICAL TABLES
WITH OTHER TABLES USEFUL IN
PRACTICAL METEOROLOGY**

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A collection of meteorological tables with other tables useful in practical meteorology by
Arnold Guyot

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PREPARED BY ORDER OF THE SMITHSONIAN INSTITUTION

BY
ARNOLD GUYOT.

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1852.



CAMBRIDGE:
STEREOTYPED BY METCALF AND COMPANY,
THEMANS TO THE UNIVERSITY.

TO PROF. JOSEPH HENRY,

Secretary of the Smithsonian Institution.

SIR,—

In compliance with your instructions, I have prepared the collection of Meteorological Tables contained in the following pages. I have endeavored to render it useful, not only to the observers engaged in the system of Meteorological Observations now in operation under the direction of the Smithsonian Institution, for whom it was immediately designed, but also to any Meteorologist who may desire to compare and to work out portions of the vast amount of Meteorological Observations already accumulated in the stores of science.

The reduction of the observations and the extensive comparisons, without which Meteorology can do but little, require an amount of mechanical labor which renders it impossible for most observers to deduce for themselves the results of their own observations. The difficulty is still further increased by the diversity of the thermometrical and barometrical scales which Meteorologists, faithful to old habits rather than to science and to reason, choose to retain, notwithstanding the additional labor they thus gratuitously assume to themselves. To relieve the Meteorologist of a great portion of this labor, by means of tables sufficiently extensive to render calculations and even interpolations unnecessary, is to save his time and his forces in favor of science itself, and thus materially contribute to its advancement. But most of the tables useful in Meteorology being scattered through many volumes, which are often not of easy access, this collection will be, it is hoped, acceptable to the friends of Meteorology, and will supply a want very much felt in this department of the physical sciences.

In the selection of the matter, I have been guided by the idea that the tables which I sought for my own use might also be those most likely to be wanted by others. But I wish the following to be considered as a first collection, containing only the tables most appropriate to the present purpose. They are, therefore, arranged in different and independent series, with distinct paging, but constituting together a frame-work into which any tables may be readily inserted when wanted, either to make the collection more complete, or to present a choice of tables calculated from somewhat different elements, or adapted to various methods of calculation.

The measurement of heights by means of the barometer being intimately connected with Meteorology, it was thought not inappropriate to admit into this collection *Hypsometrical Tables*, destined to render this kind of calculations more easy and more rapid, and thus to increase the taste for a method so useful in physical geography. I have preferred the tables of Delcroz, as uniting in the greatest degree simplicity and accuracy. Those of Gauss, Bessel, and Baily may be given afterwards.

Every table contains directions for its use, when necessary; moreover, the indication of the elements used in its calculation, and of the source from which it has been taken. When no remark is made as to this last point, the table has been expressly calculated for this volume; in this case it is marked with an asterisk (*) in the general table of contents.

Very respectfully,

Your obedient servant,

A. GUYOT.

CAMBRIDGE, MASS., *December 15th*, 1851.

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