

**REMARKS UPON THE
ESTABLISHMENT
OF AN AMERICAN
PRIME MERIDIAN**

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Remarks upon the establishment of an American prime meridian by Charles H. Davis

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CHARLES H. DAVIS

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UPON THE

ESTABLISHMENT OF AN AMERICAN PRIME MERIDIAN.

BY

CHARLES H. DAVIS,

LIEUTENANT U. S. NAVY, SUPERINTENDENT OF THE NAUTICAL ALMANAC.

CAMBRIDGE:
METCALF AND COMPANY,

PRINTERS TO THE UNIVERSITY.

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Revised 10-6-37 jw

REMARKS.

By an act, approved March 3, 1849, the Congress of the United States directed the preparation of an American Nautical Almanac. The appropriation for this purpose became available on the 1st of July, and in the course of that month I was ordered to Washington to take charge of the work, and to receive the instructions of the Navy Department concerning its organization.

The selection of a prime meridian for which the calculations of the ephemeris are to be made is a primary question; one that must of necessity be decided before the work of computation can be begun. The Congress of the United States by the act of appropriation originated this question, and it belonged to the position assigned me of Superintendent of the Almanac to meet it, and to treat it. But I did not propose to act arbitrarily in this matter. I have not taken advantage of my position to enforce my own opinions, either privately or with unbecoming earnestness. On the contrary, regarding the question as one of common interest, both in its scientific and practical bearings, I proposed to submit it at the earliest mo-

ment, and in the most open manner, to general discussion. Accordingly I addressed a communication to the Hon. Wm. Ballard Preston, Secretary of the Navy, who, in his reply, directed me "to bring the subject of an American prime meridian before the American Association for the Advancement of Science, to convene at Cambridge, Mass., on the 14th instant, for the purpose of soliciting the opinions of the principal mathematicians and astronomers upon that highly interesting subject."

As the best mode of presenting the question fully, of suggesting the scientific and practical considerations it involves, and thus of inviting the most full and free expression of the views and reflections of the members of the Association, I read a paper before the Association, the same in substance as my letter to the honorable Secretary, which was referred to a committee consisting of twenty-two members, from various parts of the country. A second paper, opposed to my own, was read by Professor Holton, which was likewise referred to the same committee. It is well known that a memorial has been gotten up in Boston, New York, and elsewhere, under the influence and direction of Mr. J. Ingersoll Bowditch and Mr. George W. Blunt, adverse to the adoption of an American prime meridian, and recommending, therefore, that we should not publish an American Nautical Almanac, but that we should publish a British Nautical Almanac in this country. Several of the letters of the committee recommend, without discrimination, the same thing.

The topic discussed in my first paper was rather the selection of such a meridian for this continent as

would lessen, to the greatest degree, the inconveniences that will necessarily follow to certain individuals from this change. It was not intended to imply a doubt that some meridian would be adopted. I could not have imagined that it was the design of Congress to suffer our geographical positions to remain any longer in their present confusion; to continue to leave it to the discretion of the Superintendent of the Coast Survey to lay down the longitudes on the government charts from New York City Hall, or from Washington, as the necessities or conveniences of the work might decide; or to deprive our astronomers of the advantage — an advantage in some cases indispensable to the worth of their observations — of having the standard by which the times of these observations are regulated, and with which their results are compared, established on this continent. Indeed, on this subject the Congress of the United States has once expressed a clear and decided opinion. "Situating as we are," says the committee on Lambert's memorial, "in this western hemisphere, more than three thousand miles from any fixed or known meridian, it would be proper in a national point of view to establish a first meridian for ourselves; and measures should be taken for the eventual establishment of such a meridian in the United States. In examining the maps and charts of the United States and the particular States, or their sea-coasts, which have been published in this country, the committee find that the publishers have assumed different places in the United States as first meridians. This creates confusion, and renders it difficult, without considerable calculation, to ascertain the relative situation of places in this country." The late Dr. Bow-

ditch, writing against the adoption of an American meridian in 1810, which at that time was certainly premature, and which was then advocated upon insufficient grounds, said,—“The most effectual way of doing it,” (establishing an American meridian,) “would be to erect a national observatory, and to calculate and publish annually a national almanac adapted to that meridian.” In the same paper he urges the survey of the coast of the United States as the first and most important scientific enterprise to be undertaken by the government. The survey of the coast has been in successful and uninterrupted operation for eighteen years, a national observatory has been erected, and has now laid a foundation, broad and deep, of usefulness and honor, and, lastly, the calculation of a national almanac has been commenced. Already, then, in the language of the committee, “measures have been taken for the eventual establishment of a meridian in the United States”; and “the most effectual way of doing it,” pointed out by our late eminent mathematician, Dr. Bowditch, has been entered upon, and will, I hope, be diligently pursued.

But the manner in which this question is to be treated is unexpectedly changed. I have not now to consider what meridian it would be best for us to adopt, but whether it is desirable to have any prime meridian on this continent at all. It is proposed that we shall continue to reckon our longitudes from an inaccessible and indeterminate point, distant three thousand miles from our shores, and separated from us by an ocean. It is gravely proposed that we shall compute our astronomical ephemeris for the convenience of an observatory which computes every year a

complete ephemeris for itself, and between which and our own there is an interval of more than five hours of time. And these propositions come from sources too respectable to be disregarded.

The object of this paper must be, then, to show the importance and convenience of an American prime meridian.

There are three classes of persons to whom this subject is one of special and daily interest, — astronomers, geographers, (in which two classes I mean to include topographical surveyors,) and navigators, — and it is in its relation to their several wants and pursuits that I propose to consider this question.

The use of an ephemeris to astronomers consists in predicting the times at which the celestial phenomena they wish to observe will occur, in furnishing the elements upon which their calculations are based, and in supplying a fixed and accurate standard with which their results may be compared. The astronomical ephemeris predicts the occurrence of the phenomena for the time of that meridian to which it is adapted, or, in other words, for which it has been computed. If this meridian is distant, that is, if the time given in the ephemeris is widely different from the actual time of the observer, he is subjected to a real practical inconvenience in making the necessary allowances for ascertaining the period when the event he is to observe and record will occur with himself. If, on the other hand, he is supplied with an ephemeris which predicts the event in nearly his own time, he is relieved from this inconvenience in a great degree. I do not present this inconvenience as one that is serious in its nature, but as one that is serious and troublesome from its constant recur-