

*THE WORK OF THE MERIDIAN
CONFERENCE.*

THOUGH entangled and loaded down with the cumbersome and roundabout methods of diplomacy, and unnecessarily surrounded with the secrecy of our State department, the Meridian conference has yet reached, in the main, very sensible conclusions; much the same, no doubt, as a body composed entirely of the leading representatives of the scientific and business interests involved would have reached in one-fourth the time, with much greater unanimity, and without stirring up the feelings and jealousies which the semi-political character of the body has engendered, and which will make its conclusions of much less weight, since a considerable percentage of the delegates will decline to recommend them to their respective governments. But with England, the United States, and the principal European powers, France excepted, in accord, the action of the rest will be of less importance, however desirable unanimity would have been.

It was almost a foregone conclusion, that Greenwich would be selected as the prime meridian, on account of the overwhelming scientific and commercial reasons in its favor; while the proposition for an entirely new neutral meridian, with its necessary confusion and needless expense, merely for sentimental reasons, was too absurd to deserve serious consideration.

The conclusion to reckon longitudes east and west to plus and minus 180° is, no doubt, all things considered, the best. Considered simply as a method of putting down longitudes on charts, the continuous reckoning from 0° to 360° is, without question, less liable to mistake, simpler, and mathematically more elegant. But longitude is inseparably connected with local time, and herein arises the following difficulty. So long as the sun shines, and the earth revolves on its axis, the mean solar day, with its alternating light and darkness, must be the great natural unit of time-reckoning. Moreover, for civil purposes the date must change during the hours of sleep; and hence the civil 'day' must begin in the night,

and should, for convenience, begin within an hour at least of midnight. Therefore civil dates and hours must be approximately local ones; i.e., must differ with the continuous westward sweep of the sun, the eastern times being farther ahead. A necessary consequence is, that on some meridian of the globe, where the east meets the west, the local time must jump one day; so that the people living on the west side of this line, i.e., in the 'far east,' will be one day ahead of their neighbors on the east side; and there is no way of avoiding this inconvenient arrangement. There is thus an inseparable connection between universal or absolute time, local time, and longitude; and the connection will be most simply expressed, and most easily comprehended, if the longitudes jump 360° at the same point on the earth where the local time jumps twenty-four hours.

The recommendations of the conference, that the prime meridian be that of Greenwich, that the universal day be the civil day (beginning at midnight) of the prime meridian, and that longitudes be reckoned to plus and minus 180° east and west respectively from this meridian, accomplish their object with the least change from the existing status, the day and the longitudes changing in the Pacific at 180° from Greenwich.

For the few islands lying close to, or on both sides of, the 180th meridian, like the Feejees, which are bound to keep up intercourse with each other, it will be most convenient to have the same day; and this will fall in with the adopted plans, if the longitudes are all given with the same sign, and extended a little beyond 180° , to include the group.

The recommendation to count the universal day from zero to twenty-four hours might well have been extended to the local times as well, though not so essential in this case. Still, the more international intercourse and cable news bring out the differences between local times and their relation to absolute time, the more inadequate and unsatisfactory seems the clumsy A.M. and P.M. division of the day into two parts. Railroads can do something towards doing

away with this by publishing their time-tables to twenty-four hours. But the great obstacle lies in the dials of our watches and clocks; for until the hour-hands are made to revolve once in twenty-four hours, either on a separate dial, like most astronomical clocks, or with a separate twenty-four-hour division, and numbers on the main dial, people will naturally cling to the twelve-hour period. There is also the additional obstacle, that, if clocks are to strike to twenty-four, these large-numbered hours would seem interminably long; but the change in the striking arrangements would not be of so much importance.

It seems unfortunate that Mr. Allen's resolution for local times, differing by whole hours from the universal time, was not recommended; for this would seem to be by all odds the simplest way of connecting local and universal times. It is already in almost universal use in this country.

The sixth resolution of the conference, recommending that the nautical and astronomical days correspond with the civil, is open to discussion. The two naturally go together. And to the navigator it is of little moment: he would simply change his chronometer-reckoning twelve hours, buy a new ephemeris, which the astronomer would have computed for him, make the proper entry in the log, and go on as before. With the astronomer it is a more important matter. The ephemerides are issued, and the computations projected, so far ahead, that five years at least would elapse before the change could be made, even if agreed upon to-day. But with the astronomer there is the same reason for changing date at noon as for changing the civil date at midnight. While the rest of the world is sleeping, he is at work.

The seventh resolution of the conference, which would seem to be a rather poor translation of a French original, contains a suggestion as important as any thing it did. We believe that all systems of weighing, measuring, dividing, and reckoning any thing whatever, should be the same as the system of numeration in use; and, as long as this is so universally decimal, such should be the system

for all these. No doubt, an octaval system of numeration, with its possible subdivision, 8, 4, 2, 1, would have been originally better; but there is no sufficient reason for a change now.

NORTH-ATLANTIC CURRENTS.

FROM time to time the great iron sea-buoys set to mark shoals, or to indicate entrances to channels, are forced from their moorings, and go adrift.

These buoys are of several types. The nun-buoys are pear-shaped; and the largest of them are twelve feet long, and eight feet across in the widest, and about two in the narrowest, part. The can-buoy is like the nun-buoy, except that it is wider at the top: both are

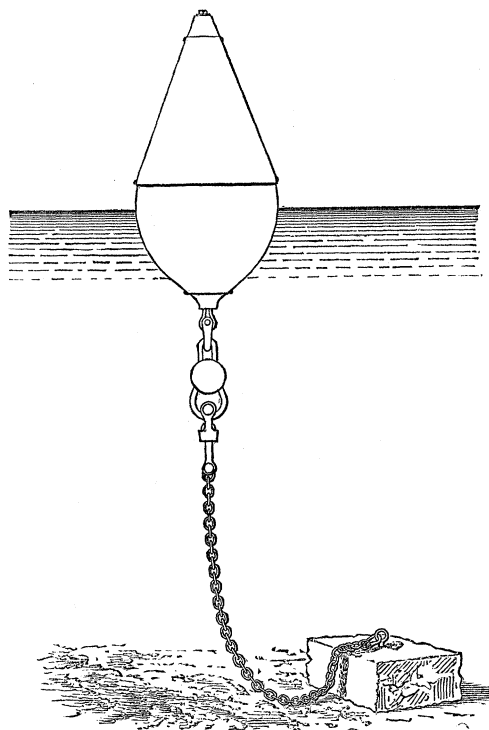


FIG. 1. — IRON NUN-BUOY.

widest at the line of flotation. In the oval bottom a steel loop is cast, to which is appended two fathoms of an inch-and-a-half stud chain, to which is fastened a solid iron ballast-ball of a thousand pounds weight, with two loops cast in it at opposite sides. To the ball is hung from fifteen to twenty fathoms of the