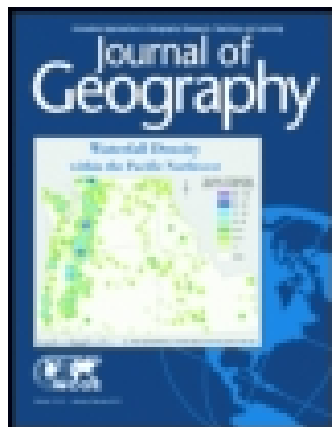


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Add a Day Or Drop a Day?

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ADD A DAY OR DROP A DAY?

By Charles Stratton, Ypsilanti, Mich.

THE following statements are given by various authorities regarding the International Date-line:

"Whenever a ship crosses this line to the westward, a day is added to the reckoning." Dryer, *High School Geography*, 1911, page 17.

"To correct such errors in their dates, navigators usually add a day to their reckoning when they sail westward across the meridian of 180 degrees." Lyman, *Advanced Arithmetic*, 1905, page 80.

"Vessels crossing the Date-line going west, drop one day." W. & A. K. Johnson, 18 inch Globe, 1909.

(Under topic of "Westward Travel")—"to have his calendar correct he must omit a day, that is, move the date ahead one day." Johnson, *Mathematical Geography*, 1907, page 94.

"Vessels crossing this line would add or subtract a day, depending on which way they were going." Hopkins, *Elements of Geography*, 1908, page 31.

"—ships changing their calendar one day on crossing this line." Be-man & Smith, *Higher Arithmetic*, 1897, page 84.

Some of these statements seem contradictory while others convey no definite information. The following suggestions are meant to clear up the difficulty:

What does happen when one sails westward across the Date-line? Suppose it were possible to travel around the earth in twenty-four hours and a man started west Monday noon, keeping the sun overhead. To him it would be noon all the way around the earth for the sun would be in his zenith all the time, and according to his reckoning he would reach his starting place on Monday noon. But the people who had stayed at home would tell him that it was Tuesday noon. His calendar would be a day behind. Suppose he could travel only half as fast as the sun. By the time the sun had completed one revolution, and it was Tuesday noon at the place he started from, he would be just half way around the earth, opposite the sun, and the time to him would be midnight, Monday. When the sun had made another revolution it was Wednesday noon at the starting place, he would be back calling the time Tuesday noon. Again his calendar would be a day behind. If he travelled around the earth in four days he would lose a quarter of a day with every revolution and if in ten days, a tenth, and so on. No matter how long a time it takes, a person travelling westward around the earth sees one less sunrise and one less sunset than people who stay in one place; hence, if he returns on Wednesday he will call it Tuesday unless the correction has been made somewhere on the journey.

This correction is made at the Date-line and from the foregoing, we can see what it will be. If we cross the Date-line to the west at 2 p. m. Monday

we at once call the time 2 p. m. *Tuesday*. If it is June tenth we at once call it June *eleventh*.

This seems to agree with the rule, "Add a day to the reckoning." But what about the rule that says "Drop" or "Omit" a day? Our week has seven days of twenty-four hours each. If, as in the above example, we jump from 2 p. m. Monday to 2 p. m. Tuesday, we have skipped ten hours of Monday and fourteen hours of Tuesday. In that week there are five days of twenty-four hours each, one of fourteen hours and one of ten hours. Our week lacks twenty-four hours of being a full week. We have omitted twenty-four hours or have dropped a day. In that sense, the other rules are correct and adding a day *to the reckoning* is the same as dropping a day *from the week*.

The trouble with the statements is that they are incomplete and easily misconstrued. In teaching this subject we need clear and definite statements. To justify the use of the phrase, "add a day," we must state definitely that we mean *to add one to the ordinal number of the day of the month*. If it is the tenth day of the month call it the eleventh. If we say "drop a day," we ought to explain that we mean to drop one day from the week or month, making a week of six days instead of seven or a month of thirty days instead of thirty one.

In Johnson's *Mathematical Geography*, page 96, there is a second statement which is short and can hardly be misunderstood. It is, "Going westward across this line one must set his calendar ahead one day."

CURRENT MATERIAL FOR COMMERCIAL GEOGRAPHY

TRADE OF SOUTH AMERICA

WHILE the foreign trade of the world has increased 77 per cent since 1900 and that of the United States 86 per cent, the trade of South America has increased 165 per cent. The total increase of the South American trade in that period was \$1,360,000,000, of which the increase in Argentina and Brazil combined amounted to \$981,000,000, or 72 per cent of the total increase. The largest increase was in Argentina, which has more than doubled its trade since 1900.

It is natural that a trade representing over 2,000 million dollars would attract the attention of the great manufacturing nations of the world, and that there should be a great rivalry among them for that trade. Eighty-seven per cent of the import trade and 88 per cent of the export trade of South America is with European countries and the United States. The leading nations are the United Kingdom, Germany, United States, France, Italy, Belgium, Spain and Portugal. Portugal has very little trade with any of the South American countries except Brazil.

The three countries from which the largest amounts were imported into South America, according to the statistics of South American countries were: