MATHEMATICAL GEOGRAPHY

Mathematical geography treats of the form and size of the earth, its dimensions and the methods of ascertaining the position of places on its surface.

The following pages will give many features showing the helpfulness of our Panama Canal Flat-Globe in the study of geography. In the first place, a few definitions and facts of Mathematical Geography will simplify the study.

The Cardinal Points.—If we hang our Globe on the wall, or lay it before us, with the North Pole upward, the right hand on the chart will, of course, represent the east and the left hand the west, the North Pole the North, and the South Pole the south. These are the cardinal points of the compass.

The Antipodes.—A straight line from New York City through the center of the earth to the other side of the Globe would emerge in the Indian Ocean to the southwest of Australia. The point of emergence would be the Antipodes of New York. The line would form a true diameter. Thus the North Pole is exactly antipodal to the South Pole. Antipodes Island, to the southeast of New Zealand, is so called because it is approximately antipodal to Great Britain. Any two places having this relation to each other are exactly 180 degrees of longitude apart; and one of them is just as many degrees of latitude to the north of the equator as the other is to the south of it.

The Flat-Globe shows us that Philadelphia is in 40° north latitude. Its antipodes, therefore, must be in 40° south latitude. This city is also in about 75° west longitude, and as it is separated from its antipodes by 180 degrees of longitude, we find that the antipodes of Philadelphia is approximately in 105° east longitude. Find its position from this explanation on the Panama Canal Flat-Globe.
The Poles.—It is only within a few hundred years that we have accepted the fact that the earth is nearly spherical, and that it revolves around the sun and rotates on its axis. As the earth is spherical, there must be two points on its surface which remain at rest as it rotates. We call these points the North Pole and the South Pole. The imaginary line through the center of the earth uniting them is called the earth’s axis.

The Equator.—The circle that surrounds the earth at equal distance from the Poles is called the Equator (equalizer), because it divides the earth into equal hemispheres.

Latitude and Longitude.—It was necessary to devise some means by which we might find any position on the surface of the earth. Mathematicians solved the problem by adopting the expedient of Parallels and Meridians.

Imaginary circles surrounding the earth parallel to the equator are called parallels of latitude. The latitude of a point is its distance from the equator, north or south. Thus, Philadelphia is in about 40° north latitude, or, in other words, it stands 2,400 geographical miles north of the equator. The parallels for every 10 degrees of latitude are printed on the Panama Canal Flat Globe.

Meridians are imaginary circles that pass through both poles and intersect the equator and all parallels at right angles. We use these meridians to define the longitude of any point—in other words, to determine its distance to the east or the west of what is known as the prime meridian, and which, of course, must be previously agreed upon. Ptolemy, early in the Christian era, selected Ferro, one of the islands of the Canary group, as the prime meridian, because it was the most western land of which he had any knowledge. It was accepted by all geographers for a long time, but other meridians came into use later, among them Greenwich, Paris, Pulkova and Washington. Most nations now accept Greenwich as the prime meridian.
When the latitude and longitude of a place are given, its geographical position is accurately defined.

**Great and Small Circles.**—On a terrestrial globe, the circles of latitude are all parallel to the equator, and this is the reason why they are called parallels of latitude. The equator is a Great Circle of the earth. The parallels to the north and south of the equator are, of course, smaller circles, and grow constantly smaller as their distance from the equator increases. They are called Small Circles. All the meridians pass through the poles and are all equal Great Circles of the sphere. For the measurement of degrees of longitude, however, they are treated as half circles extending from pole to pole. On the Flat-Globe, the earth is cut on $20^\circ$ west longitude and $160^\circ$ east longitude, which divides the earth into the eastern and western hemispheres. The equator is the dividing line between the northern and southern hemispheres.

**Length of Degrees of Longitude.**—All our globe calculations have the meridian of Greenwich as the prime meridian. Greenwich is a parliamentary borough of the City of London in Kent County, England, on the Thames, five miles southeast of St. Paul’s Cathedral. It is noted for the Royal Observatory (built in 1675). The observatory is in latitude $51^\circ 28' 38''$ north, and is the point of departure through which the prime meridian, or 0, passes from which longitudes are measured. The statute mile is 5,280 feet long. The geographical or nautical mile is 1.60 of a degree of latitude at the equator, and is 7,075 feet long. It is chiefly used by navigators.

The length of a degree of longitude at the equator is 69.164 miles, while at the poles it is nothing. This is because all degrees of longitude converge at the poles, as is seen on the Panama Canal Flat-Globe. As we proceed towards the poles from the equator, the length of the degrees of longitude constantly lessens.
The following table illustrates the length of one degree of longitude in different latitudes from the equator to the poles:

<table>
<thead>
<tr>
<th>LATITUDE STAT. MI.</th>
<th>LATITUDE STAT. MI.</th>
<th>LATITUDE STAT. MI.</th>
<th>LATITUDE STAT. MI.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 degrees 69.164</td>
<td>23 degrees 63.695</td>
<td>46 degrees 48.124</td>
<td>69 degrees 24.860</td>
</tr>
<tr>
<td>1 &quot;    69.143</td>
<td>24 &quot;    63.216</td>
<td>47 &quot;    47.253</td>
<td>70 &quot;    23.745</td>
</tr>
<tr>
<td>2 &quot;    69.122</td>
<td>25 &quot;    62.718</td>
<td>48 &quot;    46.363</td>
<td>71 &quot;    22.384</td>
</tr>
<tr>
<td>3 &quot;    69.072</td>
<td>26 &quot;    62.202</td>
<td>49 &quot;    45.162</td>
<td>72 &quot;    21.437</td>
</tr>
<tr>
<td>4 &quot;    68.968</td>
<td>27 &quot;    61.666</td>
<td>50 &quot;    44.345</td>
<td>73 &quot;    20.284</td>
</tr>
<tr>
<td>5 &quot;    68.901</td>
<td>28 &quot;    61.113</td>
<td>51 &quot;    43.614</td>
<td>74 &quot;    19.124</td>
</tr>
<tr>
<td>6 &quot;    68.785</td>
<td>29 &quot;    60.537</td>
<td>52 &quot;    42.670</td>
<td>75 &quot;    17.957</td>
</tr>
<tr>
<td>7 &quot;    68.652</td>
<td>30 &quot;    59.947</td>
<td>53 &quot;    41.713</td>
<td>76 &quot;    16.784</td>
</tr>
<tr>
<td>8 &quot;    68.496</td>
<td>31 &quot;    59.333</td>
<td>54 &quot;    40.743</td>
<td>77 &quot;    15.608</td>
</tr>
<tr>
<td>9 &quot;    68.315</td>
<td>32 &quot;    58.711</td>
<td>55 &quot;    39.760</td>
<td>78 &quot;    14.427</td>
</tr>
<tr>
<td>10 &quot;   68.117</td>
<td>33 &quot;    58.065</td>
<td>56 &quot;    38.765</td>
<td>79 &quot;    13.240</td>
</tr>
<tr>
<td>11 &quot;   67.900</td>
<td>34 &quot;    57.397</td>
<td>57 &quot;    37.758</td>
<td>80 &quot;    12.049</td>
</tr>
<tr>
<td>12 &quot;   67.661</td>
<td>35 &quot;    56.714</td>
<td>58 &quot;    36.740</td>
<td>81 &quot;    10.854</td>
</tr>
<tr>
<td>13 &quot;   67.402</td>
<td>36 &quot;    56.018</td>
<td>59 &quot;    35.711</td>
<td>82 &quot;    9.656</td>
</tr>
<tr>
<td>14 &quot;   67.121</td>
<td>37 &quot;    55.308</td>
<td>60 &quot;    34.669</td>
<td>83 &quot;    8.456</td>
</tr>
<tr>
<td>15 &quot;   66.821</td>
<td>38 &quot;    54.570</td>
<td>61 &quot;    33.617</td>
<td>84 &quot;    7.253</td>
</tr>
<tr>
<td>16 &quot;   66.499</td>
<td>39 &quot;    53.819</td>
<td>62 &quot;    32.555</td>
<td>85 &quot;    6.048</td>
</tr>
<tr>
<td>17 &quot;   66.163</td>
<td>40 &quot;    53.053</td>
<td>63 &quot;    31.183</td>
<td>86 &quot;    4.840</td>
</tr>
<tr>
<td>18 &quot;   65.798</td>
<td>41 &quot;    52.269</td>
<td>64 &quot;    30.104</td>
<td>87 &quot;    3.631</td>
</tr>
<tr>
<td>19 &quot;   65.419</td>
<td>42 &quot;    51.476</td>
<td>65 &quot;    29.110</td>
<td>88 &quot;    2.421</td>
</tr>
<tr>
<td>20 &quot;   65.014</td>
<td>43 &quot;    50.660</td>
<td>66 &quot;    28.210</td>
<td>89 &quot;    1.211</td>
</tr>
<tr>
<td>21 &quot;   64.589</td>
<td>44 &quot;    49.830</td>
<td>67 &quot;    27.101</td>
<td>90 &quot;    0.000</td>
</tr>
<tr>
<td>22 &quot;   64.156</td>
<td>45 &quot;    48.982</td>
<td>68 &quot;    25.985</td>
<td></td>
</tr>
</tbody>
</table>

In computing distance from one point to another on the earth’s surface, it will be necessary to make some allowances where the points lie north and south of each other, but on direct parallels east or west the scale in the table above gives the number of miles at each parallel.

**Change of Date Line.**—The change of date line marks the change of day in circumnavigating the earth east or west. By common consent of the leading nations, it is placed in the Pacific, and for the most part coincides with the 180th meridian. When ships "cross the line," they add a day to their calendar if they are going west, and subtract a day if they are going east; and the date line is placed in the Pacific, far from most lands, because it is best to have the change made where it will be least inconvenient. Because we have the western date, the date line
diverges from the 180th meridian in the Aleutian Archipelago, so as to give all our Aleutian islands the western day. At about 15° North of the equator the line extends to the east so as to include Samoa and Fiji as well as New Zealand in the Asiatic group. It is then prolonged diagonally to join the 180th meridian again. United States and French possessions are thus left east of the line.

SOME FEATURES OF THE PANAMA CANAL FLAT-GLOBE

Highways of the Seas.—You will notice on our Flat-Globe that the principal ocean highways are given, and the distance in miles between ports is shown. Thus, from San Francisco to Honolulu is 2,100 miles, from Honolulu to Manila, Philippine Islands, is 4,700 miles; by following these lines from one hemisphere to the other, we get a perfect globe effect, as you will notice the same degree of latitude in one hemisphere corresponds to the same degree of latitude in the other, which brings all lines of latitude and longitude correctly in place.

To show how vessels sail around the world, follow the line from New York City across the Atlantic, pass the Azores Islands to Gibraltar, through the Mediterranean Sea, Suez Canal, Red Sea, Gulf of Aden, across the Arabian Sea to Ceylon, then through the Indian Ocean to Australia, on to Melbourne and New Zealand, then across the South Pacific Ocean through the Panama Canal, and thence northward through the North Atlantic Ocean to New York City.

The Zones are situated within fixed circles on each hemisphere, and they are imaginary belts, or girdles, named as follows: Torrid, meaning hot; Frigid, meaning cold or frozen; Temperate, meaning moderate. There are five in all. The Torrid Zone is situated between the Tropic of Capricorn, which is a
dotted line 23 1/2 degrees south of the equator, and the Tropic of Cancer, which is a dotted line 23 1/2 degrees north of the equator.

The Polar Circles are illustrated by dotted lines 23 1/2 degrees from the Poles. The northern is called the Arctic Circle, and the southern is called the Antarctic Circle. Each circle of latitude on the Globe represents 360 degrees of longitude, varying in length.

From the Tropic of Cancer north to the Arctic Circle is the North Temperate Zone. From the Arctic Circle to the North Pole is the North Frigid Zone.

From the Tropic of Capricorn, south latitude, to the Antarctic Circle, is the South Temperate Zone, and from the Antarctic Circle south to the South Pole is the South Frigid Zone.

Small dotted lines illustrate the limits of ordinary navigation toward the Poles, and the limits of the heavy drift ice, also the coral reefs and islands. The various routes of hurricanes, trade winds, and sea currents, showing their course, are distinctly traced.

The youngest student of geography may learn quickly to use this Flat-Globe in an intelligent manner.

By being placed together, back to back, the hemispheres make two pole points, one for the north and one for the south; they are joined correctly and give the globe effect, and are more easily understood by the child or any person studying from it than from a solid ball globe.

Time.—Time is measured by the rotation of the earth on its axis. The difference of longitude between any two places on the earth’s surface is simply the difference of local times at the two places at the same instant. We are thus able to convert differences of time into differences of longitude, or vice versa. When it is noon on the prime meridian at Greenwich, for example, it is earlier for places to the west of Greenwich by the amount of
one hour for every 15 degrees of west longitude; and, similarly, it is later for all places to the east of Greenwich.

Thus the surface of the earth may be divided into spaces by meridians fifteen degrees apart, beginning with Greenwich. These meridians may be called hour-circles. The first three of them west of Greenwich are in the Atlantic Ocean, the fourth (60 degrees) passes through Labrador and the Gulf of St. Lawrence, the fifth (75 degrees) is near Philadelphia, the sixth (90 degrees) is near St. Louis, the seventh (105 degrees) is near Denver, and the eighth (120 degrees) is the west boundary of Nevada.

From these meridians, or hour-circles, "standard" railroad time in North America is now taken, each company adopting the time of the hour-circle nearest the greater portion of its road. The names applied to these standards are International (on the 60th degree), Eastern (on the 75th degree), Central (on the 90th degree), Mountain, (on the 105th degree) Pacific (on the 120th degree).

All places on the same meridian have exactly the same time. On the meridian of 75° west near Philadelphia, for example, it is noon at the same instant from the north to the south pole.

The degrees of latitude and longitude and their subdivisions are thus designated: A degree (°); a minute, or the sixtieth part of a degree ('); a second, or the sixtieth part of a minute (")

**TABLES SHOWING RELATIONSHIP OF LONGITUDE TO TIME**

- 360° of longitude make a difference of 24 hours in time.
- 15° makes 1 hour in time.
- 1° makes 4 minutes in time.
- 1" makes 4 seconds in time.
- 1'-15" makes 1.15 second in time.

- 60" = 1'
- 60' = 1°
- 24 hours = 1 day.
- 360° = 1 Cir.

- 60 seconds = 1 minute.
- 60 minutes = 1 hour.
- 365 d., 5 h., 48 m., 49 s. = 1 solar year

**Time Around the World.** — You will notice at the Equator on the Flat-Globe there are shown twenty-four clock faces, one
for every hour of the day. When it is twelve o'clock, noon at Greenwich, or degree “0”, at fifteen degrees east of that point it is one o'clock p.m., and at fifteen degrees west, it is eleven o'clock a.m., and for every additional fifteen degrees of distance, east or west of Greenwich, to the 180th parallel, or date line, where it is midnight, there is a difference of one hour in time. East of Greenwich it is p.m., west of Greenwich it is a.m. For example: to find the time of day at any point, say, from St. Louis, Missouri. If it is twelve o'clock, noon, at St. Louis, bear in mind that it is later to the right hand, or east, and earlier to the left hand, or west. You can readily reckon the time from any point, by obtaining the parallel of longitude, and following your dials therefrom, allowing one hour for each fifteen degrees.

Divisions of Time.—The apparent movement of the sun and the movement of the moon have been taken in all ages and in all countries as the measure of time. The diurnal motion of the earth constitutes the measure of our day, the earth’s revolution on her orbit the measure of our year, and the periodic return of the moon is the basis of our month.

The true solar year contains 365 days, 5 hours, 48 minutes and 49 seconds, but as the common or civil year consists of only 365 days, the Solar year is about a quarter of a day longer than the civil year, and therefore, as this year always contains 365 days, there would be an error of a day in the course of every four years. In order to correct that error, Julius Caesar enacted that every fourth year should consist of 366 days, this being called leap year, and the additional day to be added in the month of February, thereby making that month contain twenty-nine days once in four years. Hence this mode of reckoning is called the “Julian Calendar.”

If the solar year had consisted of 365 days, 6 hours, exactly, there would have been no need of making further correction;
but it is over eleven minutes too short, and in consequence the Julian Calendar introduced an error of forty-four minutes every four years, or about a whole day in one hundred and thirty years, which in the course of centuries became considerable, and so it happened that in 1577 the Vernal Equinox occurred on the 10th of March instead of the 21st. Pope Gregory, in the year 1582, corrected the calendar in the following manner: The 5th of October should be called the 15th to correct the error which had occurred from the time of Caesar, and to prevent its happening again, he decreed that every fourth year should be leap year, as in the Julian Calendar, except that every hundredth year for three consecutive centuries should be common years, and the fourth hundredth should be leap year. Thus 1700, 1800, and 1900 are common years, and 2000 is a leap year. By this mode of reckoning, the error in four hundred years would not exceed one day. This calendar, the Gregorian, was not adopted in Great Britain till 1752. It is called the New Style, to distinguish it from the Julian Calendar, which is called the Old Style.

**Equation of Time.**—Owing to certain causes, among them the irregularity of the sun’s apparent motion among the stars, we find that the interval between two successive noons is not always the same, and a clock that keeps true time will not, therefore, always correspond with the sun; for example, if it be twelve o’clock m. by a clock keeping true time, when the sun is exactly on the meridian, it will not be exactly noon by the clock to-morrow when the sun reaches the same meridian. The time by the clock will be either a little before or behind that of the sun, according to the season of the year. This difference between the clock and the sun is called the Equation of Time. You will find in almost every almanac, for each month, reference for this difference in time for each day in the year. Thus you
can always tell how much before or after solar time your watch or clock is.

**Length of Days at Various Latitudes.**—The following table illustrates the length of the longest days in the various latitudes from the equator:

<table>
<thead>
<tr>
<th>Latitude at degrees</th>
<th>Longest day is hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td>49</td>
<td>16</td>
</tr>
<tr>
<td>59</td>
<td>18</td>
</tr>
<tr>
<td>63</td>
<td>20</td>
</tr>
<tr>
<td>65</td>
<td>22</td>
</tr>
<tr>
<td>66</td>
<td>24</td>
</tr>
<tr>
<td>67</td>
<td>1 month</td>
</tr>
<tr>
<td>69</td>
<td>2 months</td>
</tr>
<tr>
<td>90</td>
<td>6</td>
</tr>
</tbody>
</table>

**To Find the Latitudes and Longitudes of Places.**—To find the latitude of any place, find the parallel nearest to the place, and follow it to the right or left margin of the map, and approximate distance above or below the line, as the Panama Flat-Globe shows a line at every ten degrees; remember that if north of the equator, it is in north latitude, and if south of the equator, it is in south latitude.

To find the longitude of any place, start from the equator on a parallel nearest to that point and approximate the degrees in longitude from the figures that show at a distance of five degrees on the equator, bearing in mind that the places to the right or east of the meridian of Greenwich to the 180th degree or date line are in east longitude and those to the left of Greenwich to the 180th degree or date line are in west longitude.

Here are a number of examples of the kind of questions that may be answered by reference to the Flat-Globe:

Example—Some shipwrecked sailors who are out of sight of land find by the sun that they are in 40 degrees north latitude and 30 degrees west longitude. What is their place on the globe, what land is nearest them, and in what direction must they sail to reach it?

Answer—The Island of Flores, almost due south.

Example—Another company are in 30 degrees south latitude and 110 degrees west longitude. What land is nearest them, and in what direction must they sail to reach it?

Answer—Easter Island, or almost due north.

Example—What hour is it at London when it is noon at St. Louis?

Answer—London being 90 degrees east of St. Louis, makes it six hours later there. Hence it is 6 p. m. at London.
On a clear day two steamers approaching each other on parallel lines at 20 knots speed will pass at the end of fifteen minutes after their hulls first become visible to the naked eye, and at the end of another fifteen minutes will have passed out of sight astern.

**Depths of the Oceans.**—The average depth of the oceans is 11,470 feet. The greatest known depth is 32,114 feet. The extent and depth of the several oceans are approximately as follows:

<table>
<thead>
<tr>
<th>Ocean</th>
<th>Area (square miles)</th>
<th>Average Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific</td>
<td>68 million</td>
<td>12,780 feet</td>
</tr>
<tr>
<td>Atlantic</td>
<td>34 million</td>
<td>12,000 feet</td>
</tr>
<tr>
<td>Indian</td>
<td>28 million</td>
<td>10,980 feet</td>
</tr>
<tr>
<td>Antarctic</td>
<td>6 million</td>
<td>6,000 feet</td>
</tr>
<tr>
<td>Arctic</td>
<td>6 million</td>
<td>5,100 feet</td>
</tr>
</tbody>
</table>

**UNITED STATES “PORTS OF ENTRY”**

- Albany, N. Y.
- Atlanta, Ga.
- Baltimore, Md.
- Bath, Me.
- Boston, Mass.
- Bridgeport, Conn.
- Buffalo, N. Y.
- Burlington, Vt.
- Charleston, S. C.
- Chicago, Ill.
- Cincinnati, O.
- Cleveland, O.
- Columbus, O.
- Denver, Colo.
- Detroit, Mich.
- Dubuque, Ia.
- Duluth, Minn.
- Enfield, Conn.
- Evansville, Ind.
- Galveston, Tex.
- Grand Rapids, Mich.
- Hartford, Conn.
- Indianapolis, Ind.
- Jacksonville, Fla.
- Kansas City, Mo.
- Key West, Fla.
- Lincoln, Neb.
- Louisville, Ky.
- Memphis, Tenn.
- Middletown, Conn.
- Milwaukee, Wis.
- Minneapolis, Minn.
- Mobile, Ala.
- Nashville, Tenn.
- Newark, N. J.
- New Haven, Conn.
- New Orleans, La.
- New York, N. Y.
- Norfolk, Va.
- Oakland, Cal.
- Omaha, Neb.
- Pittsburgh, Pa.
- Port Huron, Mich.
- Portland, Me.
- Portland, Ore.
- Pt. Townsend, Wash.
- Portsmouth, N. H.
- Providence, R. I.
- Richmond, Va.
- Rochester, N. Y.
- San Diego, Cal.
- Sandusky, O.
- San Francisco, Cal.
- Savannah, Ga.
- St. Joseph, Mo.
- St. Louis, Mo.
- St. Paul, Minn.
- San Antonio, Tex.
- Seattle, Wash.
- Sioux City, Ia.
- Springfield, Mass.
- Tacoma, Wash.
- Tampa, Fla.
- Toledo, O.
- Washington, D. C.
- Wilmington, Del.
- Wilmington, N. C.
## DISTANCES IN NAUTICAL MILES

Saved from New York via the Panama Canal on Trade Routes

<table>
<thead>
<tr>
<th>Location</th>
<th>Magellan</th>
<th>Panama</th>
<th>Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>13,135</td>
<td>5,262</td>
<td>7,873</td>
</tr>
<tr>
<td>Guayaquil</td>
<td>10,215</td>
<td>2,810</td>
<td>7,405</td>
</tr>
<tr>
<td>Callao</td>
<td>9,613</td>
<td>3,363</td>
<td>6,250</td>
</tr>
<tr>
<td>Iquique</td>
<td>9,143</td>
<td>4,004</td>
<td>5,139</td>
</tr>
<tr>
<td>Valparaiso</td>
<td>8,380</td>
<td>4,633</td>
<td>3,747</td>
</tr>
<tr>
<td>Honolulu</td>
<td>13,312</td>
<td>6,700</td>
<td>6,612</td>
</tr>
<tr>
<td>Manila</td>
<td>11,589</td>
<td>11,548</td>
<td></td>
</tr>
<tr>
<td>Yokohama</td>
<td>13,879</td>
<td>3,281</td>
<td></td>
</tr>
<tr>
<td>Hongkong</td>
<td>11,628</td>
<td>11,383</td>
<td>245</td>
</tr>
<tr>
<td>Melbourne</td>
<td>12,852</td>
<td>10,030</td>
<td>2,822</td>
</tr>
</tbody>
</table>

*Via San Francisco and the Great Circle.*
### Distances and Mail Time from New York City

#### By Postal Route To

<table>
<thead>
<tr>
<th>Destination</th>
<th>Miles</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide, via San Francisco</td>
<td>12,815</td>
<td>31</td>
</tr>
<tr>
<td>Alexandria, via London</td>
<td>6,130</td>
<td>10</td>
</tr>
<tr>
<td>Amsterdam, &quot;&quot;</td>
<td>3,985</td>
<td>7</td>
</tr>
<tr>
<td>Antwerp, &quot;&quot;</td>
<td>3,908</td>
<td>7</td>
</tr>
<tr>
<td>Athens, &quot;&quot;</td>
<td>3,655</td>
<td>10</td>
</tr>
<tr>
<td>Bangkok, Siam, via San Francisco</td>
<td>12,990</td>
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National and Political Geography

Following are the most important and the latest facts concerning the various countries of the world:

Abyssinia (or Ethiopia).—A native empire (despotic) in East Africa, between 4° and 15° north latitude and 35° and 47° east longitude. A rugged plateau mostly, 8,000 feet above the level of the sea. In the center of the country is a great depression, occupied by Lake Tsana, with an area of 1,200 miles, which is the principal source of the Blue Nile. Population, about 7,000,000; area, about 250,000 square miles. The late emperor, Menelik II., claimed his descent from Menelik, the son of Solomon by the Queen of Sheba.

The chief commercial products are coffee, wild indigo, cotton, sugar-cane and dates. The country has many valuable forest trees. The capital is Addis Abeba; population, about 50,000. Other towns—Harar, 35,000; Ankober, 7,000; Axum, 5,000; Gondar, 5,000.

The country is almost exclusively agricultural, but tillage is very inadequate. The higher plateaus are adapted for European cereals. The western lowlands are hot and unhealthful. An important coffee-growing country. Industries are very little developed. Mules and donkeys chiefly used for transportation. The French railroad from Jibuti extends to Harar and Addis Abeba. Religion, Christian (Coptic). Exports (1911)—$2,724,965, coffee, dates, ivory, gums, skins; imports estimated, $2,500,000, cotton goods, cutlery, etc.

Afghanistan.—A despotic emirate in south-central Asia; lies between Persia and India. Area, 250,000 square miles; population, 4,500,000; Kabul, the capital, has 140,000 population; Kandahar, 40,000; Herat, 12,000; Ghazni, 5,000. It is
one of the most barren countries in the world. Sand, bare rocks, sterile hills, and vast snow-capped mountains are the main features of this stern, inhospitable country. In summer it is hot everywhere. The temperature depends upon the elevation and not upon the latitude. Stony, treeless slopes, parched soil, and whirling sand increase the heat and dryness of the scorching air. Winter brings frost, snow and blustering storms, and is full of surprises. One moment a traveler may be in the sun’s glare and the next he is pierced by the icy wind. The products are wheat, barley, rice, millet and Indian corn. Assafoetida in large quantities is exported from this country to India. Fruits, such as figs, pomegranates and almonds, are produced in large quantities. The Bactrian camel, sheep and goats are reared. The industries are excellent felts and carpets of wool and hair, and some silk is produced. Race, Afghan—exclusive and unfriendly to foreigners. Religion, Mohammedan. There is small exterior commerce, but some machinery has been imported into Kabul, and fire-arms are manufactured there. Foreign trade, chiefly with India (1912) estimated—exports, $5,500,000; imports, $4,500,000.

Alaska.—Area, 590,884 square miles; population (1910), 64,356; between 52° and 72° north latitude and 141° and 170° west longitude. Principal towns: Fairbanks, population (1910), 3,500; Nome, 2,500; Skagway, 1,800. This vast territory, including the Aleutian Islands, came into the possession of the United States by purchase from Russia in 1867, at a cost of $7,200,000 in gold. Congress created Alaska a civil and territorial government May 17, 1884. At the time of its purchase from Russia it was considered a great folly (Seward’s folly). The territory has far more than paid for itself to date, and is one of the most valuable of countries in its resources in seal and other fur-bearing animals, minerals, fisheries and timber. It has vast lumber
districts in its southern parts. The National Forests have an area of 26,761,626 acres. Its coast line is over 18,000 miles, or more than that of all the United States proper. There are 61 volcanoes, 10 of which are active. Alaska is one of the greatest glacier regions on the globe. There are numerous hot mineral and boiling springs. Medicinal springs abound. Its great rivers, the Yukon and the Kuskokwim are navigable for upwards of 3,000 miles.

Since 1896 the development of placer mining, which supplies most of Alaska’s gold output, has made wonderful progress. The yield increased from $2,500,000 in 1897 to about $20,072,420 in 1911, more than half of it coming from the Seward peninsula (Nome and other centers). The placers of the Tanana, Copper and Koyukuk Rivers and Porcupine Creek are conspicuous for their yield. The gold production of 1911 was 806,179 ounces valued at $16,665,200. Copper has been discovered in the Copper River, upper Tanana, and other districts. Coal is mined along the Yukon. Valuable coal fields have been discovered in the Matanuska and Bering fields. Tin has been found near Cape Prince of Wales, and petroleum fields have been investigated along the coasts. In a few districts much hay and a good variety of field crops may be raised. Reindeer for draft and meat purposes are multiplying. A cable from Seattle connects the most important coast towns with the United States, and a system of internal telegraphs is in operation.

**Algeria.**—The most important colony of France, situated on the Mediterranean coast of Africa. Area with the Sahara, 327,000 square miles. Population in 1911, 5,563,000, of whom 700,000 are foreigners, 400,000 French. Capital, Algiers, 172,000, Oran, 123,000; Constantine, 65,000. Occupied by France in 1830. Climate resembles that of southern Italy. The coast is divided into several long strips by the parallel chains of the Great and
Lesser Atlas—viz., the coast plain only partially arable; the Tell, the chief agricultural and stock-farming region; and the Algerian Sahara, with fertile oases. The chief crops are grain, wine, oil, tobacco, dates and southern fruits. Large quantities of vegetables are raised for the markets of France. Cork and esparto grass for paper making are exported. Horses, camels and sheep are of superior quality. The country is extraordinarily rich in phosphates, and yields iron, copper, lead and salt. The Arab natives make carpets and their other distinctive wares. The French have few manufactures. Wagon roads are fine, and nearly three times the length of the railroads, which have made rapid progress. Races—Berber, French, Italians, etc. Religions—Mohammedan, Christian, and Jewish. Foreign trade (1912) almost wholly with France—exports, $103,965,000; imports, $131,010,000.

Andorra.—A republic in the Pyrenees. Area, 176 square miles; population, 5,231. Situated about 42° north latitude and 2° east longitude. Before the French revolution this valley, high among the mountains, had no sovereign rights, but was a barony of the Counts of Urgel and of Aragon, having governmental relations both with France and Spain. In 1793 the French Republic declined to receive the customary tribute, in 1810 the Spanish Cortes abolished the feudal régime, and thus Andorra became an independent state. The inhabitants continue to govern themselves in accordance with old feudal customs. The land belongs to a few families. Cattle breeding and a little iron and woolen manufacturing are the chief industries. The village of Andorra is the capital, but San Julia de Loria is a more important place. Race, chiefly Spanish. No trade statistics.

Angola.—A Portuguese colony on the west coast of Africa between 6° and 18° S. Lat. Area, 435,000 sq. miles; population,
The agricultural products are sugar, cotton, coffee, rubber, palm oil and sisal. The Port of Loanda is the capital; population (1911) 17,541. A railroad extends from this city to Malange. Thence it is projected towards the Belgian Congo. Benguela and Mossamedes, population (1911) 4,000 and 3,000 respectively, are other railroad terminals on the Atlantic. Trade in 1912 (mainly with Portugal). Imports, $2,000,000; exports, $1,800,000.

Arabia.—A peninsula and part of the Turkish Empire, between 13° and 33° north latitude and 35° and 60° east longitude. Area, 1,170,600 sq. miles; population, 8,500,000. Mecca, the capital; population, 60,000. It is surrounded on three sides by seas, is an extensive desert land, interspersed with a few fertile spots on the coasts, and oases in the interior, where millet, cotton, coffee, indigo, barley, sugar, dates, tobacco and aromatic plants are raised. Some of the inhabitants dwell in towns and till the soil. Commonly they are Bedouins, or wandering tribes, whose wealth consists of horses, camels, asses and mules, for which the country is noted. In all this vast country there is scarcely a single stream deserving the title of river. Mecca, the birthplace of Mohammed, derives its support entirely from the thousands of pilgrims that travel thither from every part of the Mohammedan world. Many also visit Medina, his burial-place. It is on the slopes of Yemen, on the southwest coast, that the famous Mocha coffee is raised; but owing to primitive methods, the production has become very small. Only in the mountainous southwest has a fixed population established itself. Race, Arabian, divided into many tribes. Religion, Mohammedan. Foreign trade small. The railroad from Damascus to Mecca has reached Medina.

Argentine Republic.—South America, between 22° and 53° south latitude and 56° and 72° west longitude. The third largest
of the American Republics. Area, 1,135,840 square miles; population (1911), 7,500,000; capital, Buenos Aires, 1,329,697; Rosario, 201,268. This country is the richest and most prosperous in South America. Climate chiefly temperate. Twenty years ago only a cattle-raising country, Argentine has become largely agricultural. Over 45,000 square miles under crop. Most of it is pampas or comparatively flat plains. The eastern part of the pampas and the region between the Parana and Uruguay rivers are most important for farming. Wheat production in 1910 was 3,700,000 tons. Much wheat is exported. Maize and linseed are very large crops. Animal raising is very extensive, chiefly cattle and sheep. The large resources in minerals near the western mountains are still almost undeveloped. Manufacturing is small, but growing. The Parana, Paraguay and Uruguay rivers are splendid highways of trade. Railroads crossing the grain regions are pushing towards the Andes, and the transcontinental railroad has reached the Chilean frontier. Races—Spanish-American, Italian, German, and Indian. Religion, Roman Catholic. Foreign trade 1911—exports, $314,957,000, chiefly frozen meats, live cattle, wool, wheat, linseed, hides; imports, $335,806,365, chiefly textiles, iron machinery, etc.

The Commonwealth of Australia.—A self-governing colony of Great Britain. The smallest of the continents between 11° and 44° south latitude and 112° and 152° east longitude. Its states are New South Wales, South Australia, Queensland, Western Australia, Victoria, Tasmania. Area, 2,972,906 square miles. Population (1911), 4,455,000. Temporary capital, Melbourne. Canberra has been selected as the site of its permanent capital. Melbourne and Sydney each has a population of about 500,000. Australia resembles Africa in surface features—a high plain in the interior, with mountains in the east and west, and
very few lowlands. The Murray is the only large river system, and this is only navigable a part of the year. Climate, dry, except on the east coast. The southeast and southwest are adapted for cereals, of which wheat is the most important. Fruit, including the vine, is successfully cultivated. Frequent droughts impair the value of agriculture. Australia produces about half the wool the world consumes. The yield of gold is very large, and coal and other minerals are extracted in large quantities. An adequate railroad system is developing. The distance of Australia from other civilized lands is a great disadvantage to its commerce. Races, British and aboriginal. Three fourths of the population are Protestant. Foreign trade (1912)—exports, $394,175,000; imports, $390,490,000.

Austria-Hungary.—A limited monarchy in central Europe, south of Germany and Russia. It is the third largest kingdom in Europe. Agricultural industry ranks first, producing grains of all kinds, and potatoes, beet-root sugar, wine and barley. Population, 51,340,000; area, 261,267 miles. The capital is Vienna; population (1910), 2,030,000; Budapest, 881,000. The empire is mostly surrounded by mountains and highlands, and sharp contrasts in topography result in widely different climates. The southern provinces have mild winters and dry summers, while the Hungarian plains have very hot summers and severe winters. Only the Alps have large rainfall. Agriculture, on the whole, is backward. The Hungarian plains are among the great wheat-producing regions of the world. Hungary also has the chief tobacco-growing district in Europe. The Alpine lands are most favorable for animal raising. Mining is best developed in Bohemia, especially the coal deposits. Coal production is not equal to the demand. Manufactures are of subordinate importance, owing to slow introduction of new machinery, high freights and race animosities. The largest industrial develop-
ment is in the northwest, where the population is most dense. The railroad system is well developed, and there are over 100,000 miles of carriage roads and 5,000 miles of navigable waterways (rivers and canals). No country has suffered more from race hatred. The races are Germans, Slavs, Rumanians and Magyars. The Roman Catholic faith numbers 30,580,000 adherents; there are, besides, Protestants, Greek Catholics and Jews.

Foreign trade (1912)—exports, $554,560,000; imports, $726,500,000.

Belgium.—A kingdom of North Europe, between France and Germany, is the most densely populated country in the world. It is a great manufacturing country. Every foot of soil is cultivated to the highest degree. Rich in coal, iron, zinc, lead and copper. Large producer of beet-root sugar. Area, 11,374 square miles; population (1910) 7,423,784. Brussels is the Capital; population, 196,000; Antwerp, 320,000; Liege, 174,000; Ghent, 165,000. Farming, though very intensive, cannot produce enough grain for home consumption. Coal measures occupy one-twenty-second of the area, but are so deep that coal mining is becoming more and more difficult. Over 1,000,000 persons are engaged in manufacturing, the metal and machinery industries taking the first rank, while textiles, glass, porcelain and other branches are very important. The railroad and canal systems are highly developed, but sea communications are hampered by the small extent of coast line. More than one-half of the people are Flemish, 42 per cent. French, and the rest Walloons. Nearly all are Roman Catholics, with a few Protestants and Jews. Foreign trade (1912)—exports, $747,600,000; imports, $876,415,000.

Bolivia.—Is an inland Republic of South America, north of Argentina. The agricultural products are fruit, coffee, corn and vegetables common to both temperate and tropical countries. The tropical forests are rich in cabinet, dye and building woods.
India-rubber of first-class quality is found in enormous quantities. Gold and silver are extensively mined, also copper and tin. Area 708,200 square miles; population (1910 estimated), 2,268,000. Sucre is the capital; population, 23,500. The most important town is La Paz, 79,000. In this country is partly situated Lake Titicaca, on whose historic shores stand the ruins of structures built by the once mighty race of Incas. Races, Spanish-Americans and Indians. Religion, Roman Catholic. Bolivia has no sea frontage, and its foreign trade is chiefly through the Chilean port of Antofagasta, with which the mining region is connected by rail. Trade in 1911—exports, nearly all metals and rubber, $32,226,157, imports, $22,164,850.

Brazil.—Is a Republic of South America. Area, 3,220,000 square miles; population, 17,300,000. Rio Janeiro is the capital; population, 812,000. Brazil is the largest of the South American countries, being a little larger than the United States proper. It comprises nearly one-half of the area of South America. This country surpasses all others in the extent of its navigable rivers. It also has immense forests and mines of great value, but very little has been done to develop its resources. The lowlands of the Amazon Basin are covered by dense tropical forests and are unhealthful. The highlands inland, south of the Amazon Basin, are dry, steppe-like and sparsely populated. The region of the plantations is in the coastal zone, which is fairly well tilled, and contains nearly all the important cities. The climate is tropical in the north, subtropical in the middle latitudes and temperate in the south. Brazil is the largest producer of coffee and rubber in the world, and there is now an overproduction of coffee, the larger part of which is exported from Santos. The four States of San Paulo, Rio de Janeiro, Espirito Santo and Minas Geraes are the principal coffee-growing districts. The Amazon basin abounds with rubber trees. Sugar-
cane is the great crop of the regions tributary to Pernambuco and Bahia. Cattle thrive chiefly among the German farmers of the south. Mining is little developed, and manufactures, confined chiefly to the meat, sugar and beer-brewing industries, are in their infancy. Steamers serve the Amazon Basin for freight carriage, and the railroad system is considerably developed in the southern states. Races—Portuguese-American, German, Italian and Indian. Religion, Roman Catholics. Exports, chiefly coffee, rubber, tobacco, hides and cacao; imports, food-stuffs, coal, machinery and textiles. Foreign trade (1911)—exports, $324,837,000; imports, $256,598,358.

**British Honduras.**—Is in the northeast Central America, adjoining Mexico. A British crown colony. Area, 7,562 square miles; population, (1911) 40,458. Belize, the capital and chief town; population, 10,478. The country consists chiefly of primeval forests, with savannas and open sandy plains covered with a wiry grass and dotted with pine trees. The soil is exceedingly rich, and sugar-cane is the chief crop. The best of cocoa trees grow wild in the bush. Its staple products are natural woods, mahogany and logwood, and many excellent furniture woods. There are some thriving sugar estates, and large coffee plantations have been started. Fruits are rapidly and extensively grown. Trade in 1911 with Great Britain. Imports, $638,850; exports, $345,130.

**Bulgaria.**—Is a Balkan kingdom between 41° and 44° north latitude and 22° and 28° east longitude. Area, 37,282 square miles. Population (1910), 4,329,108. Sofia, the capital, has 102,769 inhabitants; Philippopolis, 48,000; Varna, 41,317; Rustchuk, 36,000. Crossed by Balkan ranges, with the Danube plain in the north and a broad rich plain (East Rumelia) in the south, which is famed for its production of rose essence. The Bulgarians are industrious and frugal people, 72 per cent. of
whom are farmers. Cattle and sheep-herding are important; iron and coal are the chief minerals; military service is obligatory; less than 29 per cent. of the population can read or write. It has a large trade in manufactured articles, and 507 miles of railroad in operation. Freed from the Turkish yoke in 1878, many schools have been established, much progress made in all directions, and manufacturing is more advanced than in most Balkan States, especially in footwear, leather-making, woolen textiles and carpets. Races—two-thirds Bulgarians, one-seventh Turks, Rumanians, Greeks, etc. Religion, chiefly Greek Church. Foreign trade (1911)—imports, $39,470,000; exports, $36,926,800.

Cape Colony.—A British colony in South Africa, now part of the Union of South Africa. Area, 276,902 square miles; population, (1911) 2,564,965. Chief cities: Cape Town, population, 78,000; Kimberley, 34,500; Port Elizabeth, 33,000. It extends between 28° and 35° south latitude and 16° and 30° east longitude. A large portion of the country is but a wide area of semi-arid regions, which have nutritious grasses that support millions of sheep and cattle and many ostriches. Stretching across the southern edge of Cape Colony is a zone of excellent lands producing wheat, maize and other crops of the temperate zone. Thousands of acres are in vines, the colony being a large producer of wine, and also of north and south European fruits, of which large quantities are sent in cool storage to Europe as early as February and March. Four-fifths of Cape Colony needs artificial irrigation, and plants for this purpose are developing. The autumn rains provide much water. Wool-growing is the largest grazing industry, and ostrich feathers from the domesticated birds are derived chiefly from this region. Goats are more numerous than cattle, the Angora goat yielding large quantities of mohair. The
diamond mines at Kimberley practically monopolize the world's trade. Efforts to develop industries since the Boer war are noteworthy, but wine-making is still the most important branch. The ports of Cape Town, East London and Port Elizabeth are connected with the far interior by rail, and trains are now running from Cape Town to Victoria Falls, on the Zambesi River, 1,640 miles. Races—British, Dutch, and the natives, who outnumber the whites about six to one. Religion, Protestant. Trade in 1911—exports, $185,120,000; imports, $181,117,695.

**China.**—A Republic. Area, 4,278,591 square miles; population (1911) 439,500,000, of which 407,737,305 in China proper. Peking is the capital; population, estimated at 692,850 by the Chinese census of 1911. China extends between 18° and 54° north latitude and 74° and 134° east longitude, and contains over one-fourth the population of the earth. Its civilization, arts and culture are the oldest in the world, and for centuries have been practically unchanged. It was the last of the Eastern nations, to open its ports to the world. The present outlook for more rapid internal improvements is encouraging. Railroads are being built. The line from the Yangtze to Peking is 755 miles long. The one from Pukow to Tientsin is 626 miles. Western methods of manufacturing cotton and some machinery are being introduced. Its dense population makes necessary rigid economy. Its rivers and many canals are of great importance for transportation in the absence of railroads. Its largest cities stand on their banks, while many thousands of people live in boats which float on their surface. Tibet is high, cold and barren, excepting in some of the lower lands in the south. Manchuria has fine and well-tilled agricultural lands in the south, raising large crops of wheat, beans and other produce. It is the most valuable part of the empire outside of China proper. Rice forms the principal food of China; fish comes next. Domestic
animals, excepting hogs and poultry, are of subordinate importance. Ninety per cent. of the people are engaged in agriculture. Tillage of the soil is most extensive. Each family has only a half acre to two acres, and the hoe takes the place of the plow. The north of China resembles our Northern States and the south the Gulf States in vegetation and crops. The country is very rich in minerals, especially coal and iron, but mining methods are primitive, and the output is small. Religions—Confucianism, Buddhism, Taoism, Mohammedan; 1,094,000 Roman Catholics, 35,000 Protestants. Foreign trade (1911)—imports, $317,405,650; exports, $254,015,405.

Chile.—A South American republic. Area, 299,626 square miles; population (1910), 3,415,060; extends between 17° and 55° south latitude and 68° and 75° west longitude. Chileans are progressive people, encouraging manufactures and providing good educational facilities. Santiago is the capital; population, 335,000; Valparaiso, leading port on the Pacific coast of South America, 144,000; Concepcion, 50,000; Iquique, 42,788. The country lies west of the Andes Mountains—extending from Peru on the north to Cape Horn, a distance of 2,500 miles. The elevation of its eastern boundary, the Andes range, is from 13,000 to 14,000 feet above the sea level; many of its peaks rise higher. The greater part of the coast is studded with islands, some of which are very fertile. The north is sultry and rainless (desert of Atacama); the center has regular winter rains, and the south has superabundant rainfall (120 inches) and a cool temperature. Agriculture is possible in the north only by irrigation in a few river valleys; in central Chile, between Santiago and Valdivia, our cereals thrive finely. Here also tobacco and the grape are cultivated (50,000 men in the wine industry). The central farming region sends foodstuffs to north Chile. Forests predominate in the south, but are as yet little utilized. Stock
raising, chiefly sheep, is not extensive. Mining supplies 92 per
cent. of the total exports. Over 1,000,000 tons of nitrate of
soda are sent abroad for fertilizers every year. Copper is the
largest metal export, followed by silver and gold. Manufacturing
in many respects is still in its early stages, though Chile is
first in South America in these industries, chiefly flour mills,
foundries, tanneries, spinning and weaving mills, potteries and
metal goods. As there is little interior navigation, railroads are
of great importance and fairly well developed. Over 4,000
miles are in operation. Steamers ply the coast trade. Races—
Spanish-American, German and Indian. Religion, Roman Cath-
olic. Foreign trade (1911)—imports, $127,381,500; exports,
$123,488,420.

Colombia.—A South American republic. Area, 486,827
square miles; population, (1912), 5,475,961. extends between 67°
and 79° west longitude and 12° north and 4° south latitude.
Low plains and valleys in the north give abundant pasturage
to cattle. South of Caribbean coast-lands the Cordilleras cover
about one-third of the state, and high plateaus among them yield
wheat and other temperate crops. Rainfall is very heavy on the
narrow Pacific slope, which is covered with dense tropical vegeta-
tion. East of the Cordilleras is a wide expanse of selvas (forested
plains), rich in rubber, also llanos, or grass plains, where cattle
graze. Coffee of good quality is cultivated at middle altitudes.
The great differences in altitude give Colombia all the climates
and a large variety of the vegetable products of the world. In
the coastal low grounds and river valleys the products are purely
tropical; between 3,000 and 6,500 feet, maize and coffee predom-
inate; between 6,500 and 10,000 feet, the climate is delightful,
and wheat, vegetables and Northern fruits are cultivated. Co-
lombia is the source of the world's supply of emeralds, but the
mining of gold, silver and coal and other important minerals is
little developed. The population live chiefly on the high plateaus and at the seaports. Few countries are so poorly provided with means of transportation. There are about 400 miles of railroad, almost no wagon roads, and only poor mule paths. The Magdalena River is navigable nearly to Honda, 600 miles, the Cauca to Caceras, and the Atrato to Quibdo; but the most populous regions among the highlands are reached only by mule trains. The coast towns import wheat more cheaply than they can bring it from their own highlands. The few industries are centered around Bogota, the capital; population, 120,000; Barranquilla, 55,000; Medellin, 53,000; Cartagena, 25,000; Bucaramanga, 25,000. Caribbean seaports—Cartagena (declined), Sabanilla (port of Barranquilla); Pacific, Buena Ventura. Races—Spanish-American and Indian. Religion, Roman Catholic. Foreign trade (1911)—imports, $18,108,863; exports, $22,375,000.

The Belgium Congo.—A Belgium colony in Africa, administered by a Governor General. Area, 939,292 square miles; population, estimated, 8,000,000, between 6° north and 14° south latitude and 12° and 32° east longitude. Boma, 50 miles up the Congo, is the capital. The colony is divided into 22 districts for administrative purposes.

The river basin is the second largest in the world, and most of it is included in the Congo state. The state is chiefly a high, flat table-land, bordered on the west by mountains, through which the river has cut its way for 270 miles, dropping to the coastal plain 1,800 feet in that distance. There is navigation up the lower Congo for 90 miles from its mouth; Matadi is the head of navigation for ocean steamers. The rapids through the mountains are circumvented by a railroad to Stanley Pool, above which about 8,000 miles of navigation are spread along the various branches of the upper Congo system. The climate is torrid, and, excepting at some places, unhealthy for the white races; but
the heat is tempered by the elevation of the plateau, and as the whites have learned the conditions of health, the mortality among them has been reduced more than one-half. Great tropical forests are found only in the east and northeast, the most of the state being rolling grass-lands, interspersed with areas of timber. The government has a large number of stations, and many posts are maintained by missionary and trading societies. A profusion of tropical plants and animals provides abundant food for the natives. The chief commercial products as yet are rubber, ivory and palm oil, but some cotton, coffee and tobacco plantations are beginning to flourish. The wealth in rubber is enormous. It is a misdemeanor to kill the rubber plant, and millions of them are being set out in plantations. European cattle, introduced at 70 stations, are doing well, though they are not succeeding in some districts. Gold, copper, silver and iron are the principal metals, and Katanga, the southeast district, has great mineral wealth. On the upper Congo and its tributaries are 100 small steamers and many tow-boats, which ply to the heads of navigation. Slave-raiding, cannibalism, human sacrifices, etc., are severely punished and suppressed wherever the government has brought the country under its influence. Many thousands of the younger natives are being taught trades, and all manual and considerable skilled labor is performed by natives under white supervision. Foreign trade (1911)—imports, $9,942,960; exports, $10,804,295, three-fourths rubber.

**Corea.**—Practically a Japanese colony in Asia. Area, 84,400 square miles; population (1912), 13,832,376; government, imperial, strongly under Japanese influence. Between 34° and 44° north latitude and 125° and 131° east longitude. Capital, Seoul; population, 193,640. A very mountainous peninsula, about 600 miles long and 135 miles wide at its broadest part. It has a few excellent harbors and a good climate. Most of the
people are farmers, and agriculture thrives best in the southern half of the peninsula, rice and beans being the chief crops. The industry is greatly hampered by lack of room, as the valleys are narrow. Many mountain-sides are terraced and cultivated. Gold and coal has been found in many places, and a number of foreign companies, especially Americans, are beginning to work concessions. Railway lines are gradually being built. See Panama Canal Globe. Ponies, wheelbarrows, and sedan-chairs are used for most of the freightage and passenger traffic. The important ports, Fusan, Chemulpo, Mokpo and Wunsan, are open to foreign traders. Besides Coreans, 242,000 Japanese, 16,000 Chinese, and a few hundred Americans and Europeans live in the country. Religions—Buddhism, Confucianism, 58,800 Roman Catholics and 28,000 Protestants. Trade (1912)—imports, $27,405,500; exports, $12,301,825.

Costa Rica.—A Central American republic. Area, 18,400 square miles; population in (1911) 388,266. Between 8º and 13º north latitude and 81º and 86º west longitude. Two parallel mountain ranges cross Costa Rica, with the depression of Cartago between them. Several active volcanoes are in the northern range, and among them Turrialba and Irazu are over 11,000 feet in height. The southern chain also has lofty mountains. A third of the population live on the Pacific or dry side of the mountains, many having relations with the coffee plantations that supply Costa Rica with more than half of her exports. Coffee is the largest crop, and is noted for its excellence. It constitutes 46% of the republic's exports. Cattle are herded on the uplands, but the home supply of beef is not equal to the demand. San José, the capital, on the table-land, in the heart of the coffee district, has 24,963 inhabitants, and is connected by rail with Puerto Limon, the Atlantic port. There are about 400 miles of railroad lines in the country. Punta Arenas is the Pacific port.
Races, Spanish-American and Indian. Religion, Roman Catholic. The imports are hardware and manufactures, more than half coming from the United States. Foreign trade (1911)—imports, $8,967,561; exports, $9,020,150.

Cuba.—Area, 40,000 square miles; population (1910), 2,220,278. Between 19° and 23° north latitude and 74° and 85° west longitude. Havana is the capital; population, 297,000. Other large ports, Cienfuegos, 30,000; Santiago, 45,478; Matanzas, 45,282. Cuba is the largest island of the West Indies and the largest fertile island of America. It embraces nearly half the land surface of the West Indies. Its deeply indented coasts provide many excellent harbors, which is one of its great commercial advantages. In the west are the low mountains, Sierra de los Organos, on whose southern slopes (Vuelta Abajo) the most highly prized tobacco of Cuba is raised. In the east are higher mountains, where agriculture is much diversified, but this region yields less for export than other parts of the island. Between the eastern and western mountains are the rich central plains that produce the great sugar crop of Cuba and give pasturage to large numbers of cattle. The climate is tropical, tempered by the northeast trade winds so that the white race can live in any part of the island. The cities in which sanitary regulations are now enforced have become healthful. Sugar from sugar-cane and tobacco are the two great crops. About two-thirds of the tobacco crop is exported. Cocoanuts and bananas are exported from the eastern part of the island. In the last decade the banana trade has declined because of the larger returns of the land planted to cane. The eastern mountains yield prime iron ore and manganese. In 1910 new iron mines were discovered in the vicinity of Mora on the north coast. Short railroads cross the island from north to south, and the line from Havana to Santiago was completed in 1903. Wagon roads are still very poor.
Steamers in the coastal trade make the circuit of the island. About two-thirds of the people are Spanish-Americans, 142,000 foreign whites, 234,000 negroes, 271,000 mixed blood, and 14,000 Chinese. Religion, chiefly Roman Catholic. Havana is the great tobacco and Matanzas the sugar port, the United States having the greater part of the trade. Foreign trade mainly with the United States. In 1910 this country took 86 per cent. of the Cuban exports and supplied 50 per cent. of the imports. (1911)—imports, $113,055,774; exports, $125,943,652.

Canada, Dominion of.—A British colony, with the executive government vested in the British sovereign, and legislative functions in a parliament, of which the House of Commons is elected by popular vote. Area, 3,745,574 square miles; population, (1911), 7,205,364. Capital, Ottawa; population, 86,340; Montreal, 466,197; Toronto, 376,240; Quebec, 78,067; Hamilton, 81,879; Halifax, 46,081. It extends from 42° north latitude to the Arctic Ocean, above 77° north latitude, and from 52° to 141° west longitude. It includes nine provinces, British Columbia, Manitoba, Nova Scotia, Ontario, Quebec, New Brunswick, Prince Edward Island, Saskatchewan, and Alberta (the last two organized in 1905), and the Northwest Territories and Yukon. The boundaries of the eastern provinces were changed in 1912 as shown on the Panama Canal Flat-Globe. The area of both Manitoba and Quebec provinces was considerably increased by extension of territory to the north. It has the ocean on three sides, and the Great Lakes on the south. The Atlantic ports are nearer to European markets than are those of the United States. Canada is a broad, low plain, excepting in British Columbia, which is the mountain region. The southern part of the eastern plain, once heavily forested, has been largely cleared for farms. The south central plain, extending into Athabasca from the southern border, is a comparatively level prairie with deep rich soil, one
of the finest farm and grazing regions in the world. This region is attracting large immigration. About 70 per cent. of the population are farmers, with wheat, oats, barley and maize as the great grain crops. Fruit raising is important in Ontario and Nova Scotia. Wide areas of forest in northern Quebec and Ontario and in British Columbia yield great wealth in lumber, and the manufacture of wood pulp for paper making is very large. The mountain plateau is the source of most of the metals, though iron is mined on the east coast. Canada is usually the fourth or fifth country in the annual world-product of gold, is one of the two largest producers of nickel, and mines much coal. The fisheries employ 80,000 persons. The annual value of this trade exceeds $34,500,000. The vast regions north of the forests are not likely to be of great value unless mineral wealth is discovered. The St. Lawrence and Great Lakes afford large facilities for transportation. Railroads are well developed in the southeast, and the Canadian Pacific Railroad is the only transcontinental line in America owned by one company. Another transcontinental line (The Grand Trunk Pacific Railroad) from Quebec through Winnipeg to Prince Rupert is in construction. The mileage constructed by June, 1911, was 25,406 miles. Races—British-American, French and Indian. Religions, Protestant and Roman Catholic. Foreign trade (1911)—imports, $559,320,544; exports, $315,317,250.

Denmark.—A limited monarchy. Area, 15,289 square miles; population, (1911) 2,757,000. Between 54° and 58° north latitude and 8° and 13° east longitude. Capital, Copenhagen; population, 462,000. Other large cities—Aarhus, 62,000; Odense, 42,000. Copenhagen is one of the free ports of Europe, all goods admitted to the free port being exempt from customs duties. Thus they may be reshipped to foreign ports without examination but if sent into Denmark outside of the free port, they must pay
The kingdom is entirely lowland, and the west coast is protected from the sea by dikes at many points. The Baltic islands, excepting Bornholm, are flat and fertile, but large areas of moor and sand are met in Jutland. The climate is oceanic, mild for the latitude, but great storms sometimes lash the coasts. The very prosperous Danes have agriculture and cattle breeding as their chief resources. Two-thirds of the land is fertile, the pastures are large and rich, and stock farming is the special sphere of the Danish farmer. The export of butter and eggs is enormous. The kingdom is poor in minerals and entirely wanting in metals. As fourth-fifths of the inhabitants are agriculturists, manufacturing has only a minor role, and industrial establishments are mainly supported by the farming and sea-faring interests. Beet sugar is refined, flour mills are numerous, factories make sail-cloth, leather, and prepare tobacco and the brewing and distilling interests are large. Copenhagen and Odense, where manufacturing is mainly confined, produce also machinery, porcelain and cloth. On the whole, Denmark supplies its own wants but poorly, and most manufactures are imported. The rail and wagon roads are adequate and excellent.

Race, Danish. Religion, chiefly Lutheran. Trade (1911)—imports, $192,525,000; exports, $172,585,000.

Dutch East Indies.—Colonial possessions of the Netherlands. Area, 384,000 square miles; population (1911), 39,079,000. Between 5° north latitude and 11° south latitude and 95° and 131° east longitude. Batavia is the capital; population, 138,000. Other largest towns in Java—Surabaja, 150,000; Surakarta, 118,000. This group of islands comprises Java, Madura, Sumatra, most of Borneo, Banka, Billiton, Celebes, Rian, Lingga, the Molucca Archipelago, and the small Sunda Islands. Java is the most important, and produces large quantities of sugar, tea, indigo, cinchona bark, and tobacco. Sumatra is where a
tobacco prized for cigar wrappers is grown. The Dutch are very skillful in their colonial policy, which is based upon the maxim, "The Dutch colonies for the Dutch." The Dutch protect the natives from arbitrary oppression and spoliation, and have made the East Indies an inexhaustible source of wealth for the mother country. The climate is tropical, but all the islands are mountainous, and cool retreats are accessible. Java (population, 30,098,000) is the most densely peopled land near the equator. Next to Cuba, it is the largest producer of cane-sugar. Java coffee is sent to all parts of the world. The island is the largest producer of quinine, and the tea plantations yield important returns. Sumatra's products are like those of Java, but it grows a far larger amount of tobacco. A large part of the spices, tortoise-shell and pearl-shell in the world's trade comes from the other Dutch islands. Batavia, in Java, is the commercial center of the colony. Four-fifths of all products are sent to Rotterdam and Amsterdam, where they are greatly enhanced in value by manufacture and preparation for market. Dutch merchants sell these products in many lands, and send to the East Indies great quantities of cottons and other manufactures; so that the Dutch East Indies are the best customers of the Netherlands, excepting Europe. Race, Malayan stock. Trade (1910)—imports, $144,664,500; exports, $188,575,000.

Ecuador.—A South American republic. Area, 116,000 square miles; population, 1,500,000, (1910 estimate). Between 2° north latitude and 5° south latitude and 74° and 81° west longitude. Capital, Quito; population, 50,000. Other cities, Guayaquil, 51,000; Cuenca, 30,000; Riobamba, 18,000. Ecuador, so called because it lies under the equator, illustrates the influence of altitudes on climate and production. On the narrow Pacific coast plain there are tropical forests, high grasses, rubber, cacao and many other products of the hot lands. The people live in thin-
walled houses. Only 70 miles to the east is the high plateau of Ecuador, between the Cordilleran ranges, where the population is housed in stone and adobe dwellings amid fields of wheat, barley, potatoes and alfalfa. Further east the land slopes to another forested tropical plain. The lowland east of the excellent port of Guayaquil and the plain of the Rio Guayas are a continuous garden, rich in tropical vegetation. Here sugar-cane is cultivated, but above all cacao, which is the principal wealth of the country, and Ecuador is the largest source of supply. Cacao is over three-fourths of the total exports. They need wheat on the coast, but the wheat-fields of the high plateau have been inaccessible because only mule paths connected the high with the low-lying regions. The railroad from Guayaquil has been pushed to the plateau of Quito. The eastern lowlands have rubber and gold still almost inaccessible. The coast Indians produce the famous Panama hats from the fine straw of the toquilla, called Panama simply because they are forwarded to market through that port. There are few other manufactures except the products of a small number of woolen and cotton mills, saw mills, chocolate works, and soap factories, chiefly at Guayaquil, which has the best harbor on the west coast of South America, and handles nearly all the foreign trade. The imports are mainly manufactures and foodstuffs. Races, Spanish American and Indian. Religion, chiefly Roman Catholic. Foreign trade (1910) — imports, $8,024,105; exports, $13,666,371.

Egypt.—A tributary state of Turkey, with a Khedive as sovereign, but in its financial and economic administration under the control of Great Britain. Between 22° and 32° north latitude and 24° and 38° east longitude. Area, 383,000 square miles, including the deserts. The area of the cultivated and densely populated land is only 10,000 square miles, a narrow strip along the banks of the Nile about the size of our state of New Hampshire.