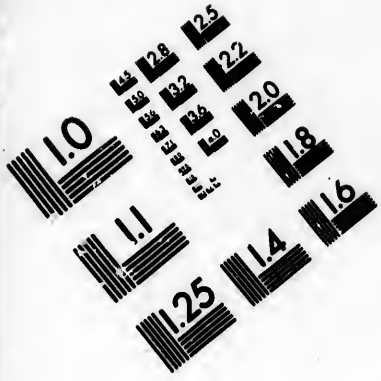

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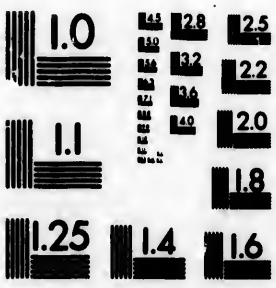

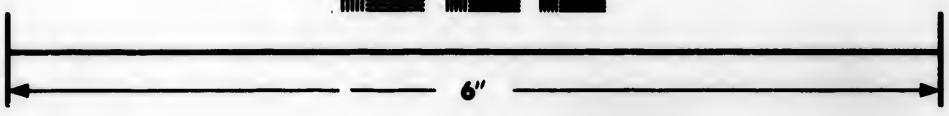

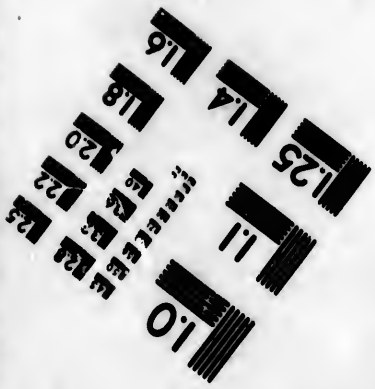

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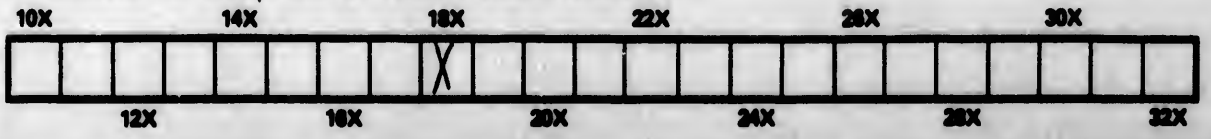

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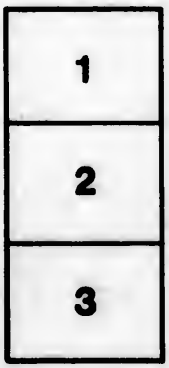

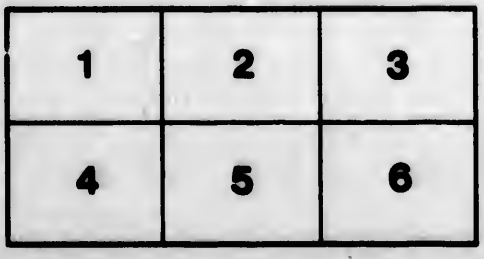

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AN

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TO

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WITH

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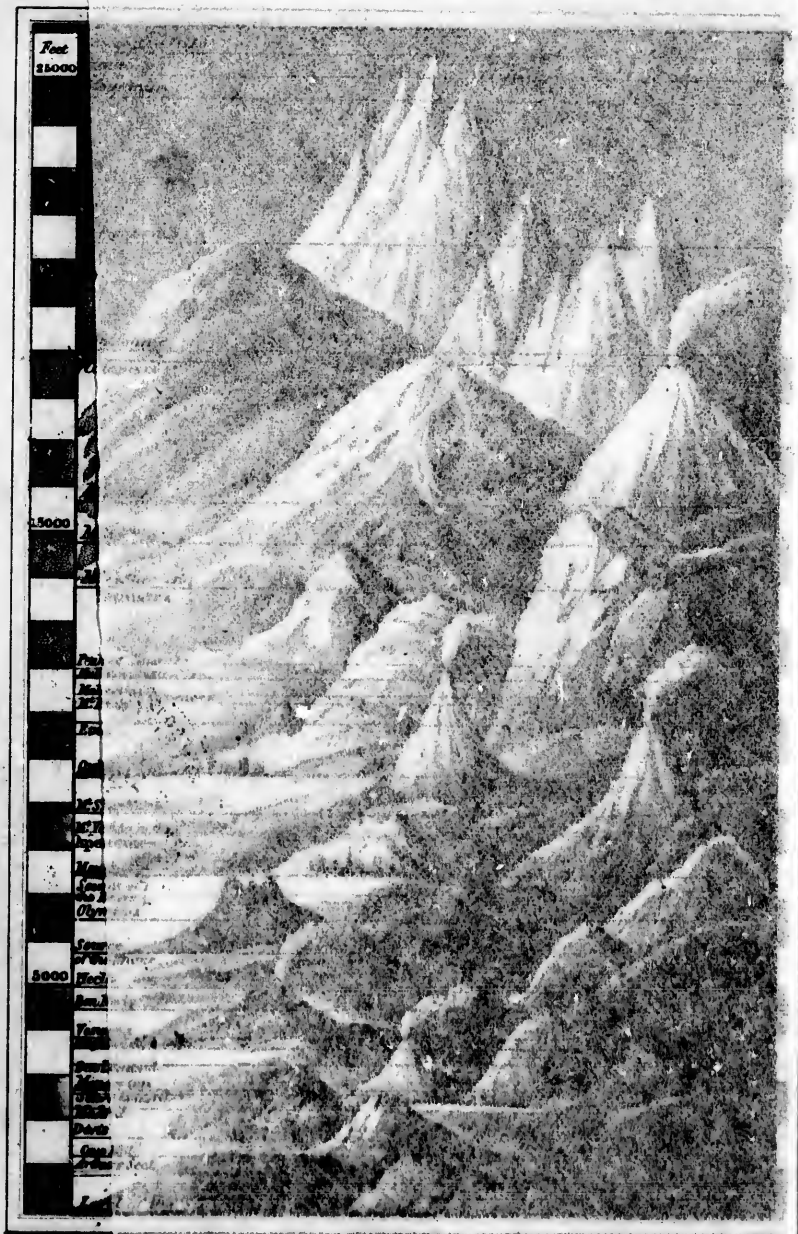

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CONTAINING

AN OUTLINE OF ASTRONOMY

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Third Edition.

BY JAMES THOMSON, LL.D.

Professor of Mathematics in Belfast College.

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AN ATLAS,

CONSISTING

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AND

USE OF THE GLOBES.

BY

1801.

In the following publication, the materials have been drawn from the latest and most authentic sources; and it has been the object of the Author to convey the information in a plain, familiar style, and to make such a selection as may interest and instruct the pupil.

The accounts of the several countries consist, in general, of two parts, distinguished by different kinds of type. The first, and perhaps the more important of these, is intended to assist the pupil in learning the relative situations of places; and is to be studied in connexion with maps. The second contains an outline of the natural and political geography of each country; and may either be studied along with the first, or may form a second course, perhaps in connexion with a repetition of the former. With the first three Sections, and with the General Views of the great divisions of the earth, the learner should be made accurately acquainted at the commencement; and the interesting and important subjects, treated of in the APPENDIX, should be studied as soon as the age of the pupil, or other circumstances, may render it advisable. It may also be advantageous, to enliven the study of the other parts, by intermixing with them a considerable portion of the lighter and more entertaining matter contained in the Notes.

In preparing the present edition for the press, the whole has been carefully revised, and various additions and improvements have been made. In compliance with the wish of the Publishers, and of several teachers, Questions for examination have been introduced, particularly on the more important parts of the Notes. These Questions—while some teachers will employ, in preference, those that may occur to themselves—will be serviceable to pupils in the preparation of their lessons; and it will be found to be a useful exercise for learners to extend the list, or to write out for themselves similar questions on the parts of the work, for which none are given. The Questions for exercise on the Maps are of a kind peculiarly useful; and it is easy to see how the number of these might be increased at pleasure by the teacher or the pupil.

College, Belfast, Feb. 1, 1829.

CONTENTS.

APPENDIX.

MODERN GEOGRAPHY.*

I.—INTRODUCTION.

1. THE figure of the earth is nearly that of a globe or sphere.†

2. In Geography and Astronomy, certain circles are supposed to be described on the sphere. Of these, any one whose plane‡ passes through the centre, and which therefore divides the sphere into equal parts, or hemispheres, is called a *great circle*. All others are called *small* or *less circles*.

3. If the circumference of a circle be divided into 360 equal parts, each of them is called a *degree*. Each degree is subdivided into 60 equal parts, called *minutes*; and each minute into 60 equal parts, called

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* 1. *Geography* is a description of the earth; and is distinguished by different names, according to the nature of the subjects considered. *Mathematical Geography* treats of the figure and magnitude of the earth, of the latitudes and longitudes of places; and of globes, maps, and other artificial contrivances and instruments for illustration. This part of Geography is connected, in a considerable degree, with Astronomy, especially when it is made to comprehend the consideration of the earth as a planet. *Physical Geography* treats of the materials of which the earth is composed; of the forms of the various parts of its surface; of the atmosphere; of climate; of the various productions, animal and vegetable, found on its surface; and of other particulars respecting its natural condition. *Political Geography* treats of laws, modes of government, religion, learning, customs, and other subjects arising from the agency of man considered as a moral and political being. Other names which are sometimes given to particular parts of Geography, such as *Ancient*, *Modern*, *Descriptive*, *Maritime*, &c. are easily understood from the terms.

† 2. A *globe* or *sphere* is a body of such a figure, that all points of the surface are equally distant from a point within it called the *centre*. The earth's diameter, or the line passing from one side to the other through the centre, is 7912 British miles.

‡ 3. A plane is a flat surface. The plane of a circle of the sphere is the section by which the sphere may be conceived to be cut through the circumference of the circle; and may be horizontal or vertical, or inclined in any way whatever.

*seconds.** Degrees, minutes, and seconds, are denoted by the characters, °, ′, ″. Thus, 23° 27′ 54″ means 23 degrees, 27 minutes, 54 seconds.

4. The earth performs a revolution round the sun in a year, moving in a path which is called its *orbit.*

5. While moving round the sun, the earth, each day, revolves on a line passing through its centre, and called its *axis.*

6. The points in which the axis cuts the surface, are called the *poles* of the earth: one of them the *north pole;* the other, the *south pole.*

7. A great circle which has all points of its circumference equally distant from the poles, is called the *equator.* This circle divides the earth into the northern and southern hemispheres.

8. A semicircle which extends from one pole to the other, and through any particular place, is called the *meridian* of that place.†

9. The *latitude* of a place on the earth's surface, is its distance from the equator, measured in degrees, on its meridian. Latitude is of two kinds, *north* and *south,* according to the situation of the place in respect to the equator.‡

10. The *longitude* of a place is the distance in degrees on the equator between its meridian, and another called the *first meridian.*§ Longitude is of

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* 4. A fourth part of the circumference is called a *quadrant:* a quadrant, therefore, contains 90°. It is evident that the magnitudes of degrees, minutes, and seconds, will depend on the magnitude of the circle of whose circumference they are parts. Thus, if the circumference be 360 yards, each degree will evidently be a yard: while, if the former be 180 miles, the latter will be half a mile. The average length of a degree on the earth's surface, is about 69 British miles and one twentieth.

† 5. The remaining part of the entire circle is sometimes called the *anti-meridian.* Sometimes also the *entire circle* is regarded as the meridian.

‡ 6. The less the latitude of any place is, the greater, in general, is the heat of its climate. This, however, is much modified by the elevation of the place above the level of the sea, the heat being less as the place is more elevated. The temperature is also influenced by contiguity to heated plains of sand, or to frozen regions; and places that are near the sea, enjoy a more equable temperature, than places more remote. It has been generally thought also, that the heat is considerably greater in the northern hemisphere, than in the corresponding latitudes in the southern. The difference, however, if there be any, is probably much less than is commonly supposed.

§ 7. The longitude of a place may also be defined to be the angle of inclination of the planes of its meridian and the first meridian; and this angle is measured

two kinds, *east* and *west*, according to the situation of the place in respect to the first meridian.

11. The meridian assumed as the *first meridian*, is usually that of some noted place. That which is now employed by British geographers, is the meridian of the Royal Observatory of Greenwich, near London.

12. Small circles, whose circumferences are every where equally distant from the equator, are called *parallels of latitude.*

13. The *tropics* are parallels of latitude, each 23° 28′ distant from the equator. The one which is north of the equator, is called the *tropic of Cancer;* the other, the *tropic of Capricorn.*

14. The *polar circles* are parallels of latitude, each distant 23° 28′ from one of the poles. That which is next the north pole, is called the *arctic circle;* the other, the *antarctic circle.*

15. The spaces between the polar circles and the poles, are called the *frigid zones;* the space between the tropics, the *torrid zone;* and the two remaining portions of the surface, the *temperate zones.**

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either by the part of the equator, or of a parallel of latitude, intercepted between those meridians. Latitude and longitude serve to determine the positions of places.

* 8. If the surface of the earth be divided into 100 equal parts, the torrid zone will contain about 40 of these parts, each of the temperate about 26, and each of the frigid about 4. In places of the ordinary level, the heat in the torrid zone, and the cold in the frigid, are in general great; while, in the temperate zone, both are commonly moderate: and hence the origin of their names. The zones are also distinguished for the different appearances exhibited by the sun in his apparent daily motion. Thus, in every part of the torrid zone, he appears part of the year north and part south of the zenith at noon; and is consequently vertical, or exactly over head, at any particular place, twice a year, once in passing northward, and again in passing southward: while, to the inhabitants of the northern temperate and the northern frigid zones, he appears always south of the zenith at noon; and to those of the other two zones, always north of it. In each of the frigid zones also, he continues moving round above the horison from day to day during part of the year, without ever descending so low as to set; and, at the opposite season, he is for a like period invisible, never ascending so high as to rise. Hence, the inhabitants of the frigid zones have been called *periscii;* those of the temperate, *heteroscii;* and those of the torrid, *amphiscii;*—the first, because, during the period of continual sunshine, their shadows move round them; the second, because their shadows at noon fall always in the same direction; and the third, because, at noon, their shadows fall sometimes northward, and sometimes southward. These last have also been called *ascii,* when the sun is vertical; as at that time a perpendicular line has no shadow. All these terms are compounded of the Greek word for a *shadow,* with other words prefixed; but they are now rarely employed.

16. The *artificial terrestrial globe* is a globe representing the earth, with its divisions, and the principal circles already described. It revolves in a brazen ring, called the *universal* or *brazen meridian*. Latitude is marked on this ring, and longitude on the equator.

17. A *map* is a representation of the whole earth, or of a part of it, on a flat surface. The top of a map is the north, the bottom the south, the right hand side the east, and the left the west. In a common map of the world, longitude is marked on the equator, and latitude on the circles that contain the two hemispheres. In maps of particular countries, longitude is generally marked at the top and bottom, and latitude at the sides.*

Questions on Section I.

1. What is the figure of the earth?
2, 3. What is a great circle? A small? A degree? Minute? Second? How are degrees, minutes, and seconds marked?
4— 6. What is the earth's orbit? Its axis? Its poles?
7. What is the equator? How does it divide the earth?
8—10. What is the meridian of a place? Its latitude? Longitude?
11. What is the first meridian?
12—16. What are parallels of latitude? The tropics, and the polar circles, with their names? The zones, with their number and names?
16. What is the artificial terrestrial globe? The universal meridian?
17. What is a map? What parts of a map correspond to the north, south, east, and west? Where are longitude and latitude marked on maps?

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* 9. It is evident that no map can be a correct representation of a sphere. If the country be small, however, the error is inconsiderable. A map of a particular country may be regarded as a part cut out of a map of the world. In a map of the world, the earth is supposed to be divided into two hemispheres, which are then placed on a plane, or flat surface, with their edges in contact; and the pupil will have a familiar idea of the nature of the map, by conceiving the hemispheres to be compressed or flattened, so as to coincide with the plane. He may also assist his conception of a map of the world, by supposing the hemispheres to be placed with their backs in contact, and to be inflated so as to form the surface of a globe.

Questions on the Notes to Section I.

1. What is Geography?
2. What is a globe? The earth's diameter?
3. What is a plane? What is the plane of a circle of the sphere?
4. On what do the magnitudes of degrees, &c. depend? What is the length of a degree on the earth's surface?
6. What circumstances influence the heat or cold of the climate in different places?
7. What purpose is served by latitude and longitude?
8. What are the comparative magnitudes of the zones? What are the appearances exhibited by the sun in the different zones?
9. What sort of map is least erroneous? How may a map of a particular country be regarded? What familiar idea may be had of a map of the world?

II.—OF THE NATURAL DIVISIONS OF THE EARTH'S SURFACE.

1. THE surface of the earth consists of land and water; rather less than one third being land, and the rest water.*

2. The various parts of the land are distinguished by different names, according to their extent or form. The principal of these are *continents*, *islands*, *peninsulas*, *promontories* or *capes*, and *isthmuses*.

3. The water, by a like distribution, consists chiefly of *oceans*, *seas*, *lakes*, *gulfs*, *bays*, and *straits*.

4. A *continent* is a tract of land, of large extent. An *island* is a smaller tract, entirely surrounded by water.

5. A *peninsula* is a portion of land nearly surrounded by water. If such a portion extend but a little way into the sea, it is called a *cape* or *promontory*, or simply a *point* or *head*.

6. An *isthmus* is a narrow neck of land, connecting two larger portions.

7. An *ocean* is an expanse of water, of large extent. A *sea* is a like portion, but smaller. The term *sea* is also frequently applied to the entire body of water connected with the earth.

8. A *lake* is a portion of water entirely surrounded by land.

9. A *gulf* is a portion of water nearly surrounded by land. A *bay* is a like portion, but smaller. If a gulf be very large, it is often called a *mediterranean* or *inland sea*.

10. A *strait* is a narrow portion of water, communicating at its ends with two seas, or two parts of the same sea. A *channel* is a like portion, but larger.†

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* 1. The earth's surface consists of nearly 200 millions of square miles; and of this, it is probable that nearly 60 millions are land.

† 2. The terms *road*, *port*, *haven*, *harbour*, and *creek*, are also applied to small portions of the sea. A road affords anchorage at a short distance from land, with

Questions on Section II.

1. What is the proportion of land and water on the earth's surface?
2, 3. What are the principal divisions of the land? Of the water?
4. What is a continent? An island?
5, 6. What is a peninsula? A cape? An isthmus?
7, 8. What is an ocean? A sea? The sea? A lake?
9. What is a gulf? A bay? A mediterranean or inland sea?
10. What is a strait? A channel?

III.—GENERAL VIEW OF THE EARTH.

1. *Divisions of the Land.*—The land on the earth's surface may be divided into five great parts; *Europe*, *Asia*, *Africa*, *America*, and *Oceanica*. The first three of these are connected together, and constitute what is called the *Old* or *Eastern Continent:* the fourth is composed of two great divisions, North and South America, and is called the *Western* or *New Continent:* and the fifth consists of a large island, called *New Holland;* and the numerous smaller islands situated in the great ocean between America, Asia, and Africa.*

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shelter from certain winds. A *port*, *haven*, or *harbour*, is a place where ships may lie in permanent security; and a *creek* is of the same kind, but smaller. When the mouth of a river widens, so as to admit the sea to a considerable distance into the land, it is called an *estuary* or *frith*.

It will be perceived, that several of the portions of land and water, above described, resemble each other. Thus, the continent, island, peninsula, and isthmus, correspond respectively to the ocean, lake, gulf, and strait.

It may also be remarked, that the terms above explained do not admit of being strictly defined; and their significations are often subject to much uncertainty, depending on the indefinite terms *large*, *small*, *narrow*, &c. Thus, there is no fixed limit to determine what is to be called a strait and what a channel, or what a channel and what a sea. *Bay* and *gulf* also are constantly confounded. It has been proposed to limit the signification of the term *peninsula*, by excluding from that denomination any projecting portion of land which is attached to the mainland by a greater extent of line than one fourth of its circumference. The term *continent* was originally applied to those parts of the land round which it was supposed to be impossible for a ship to sail.

Questions on the Notes to Section II.

1. What is the extent of the earth's surface? How much of this is land?
2. What is a road at sea? A port, haven, or harbour? A creek? An estuary or frith? What portions of land and water resemble each other? How has the signification of the term peninsula been proposed to be limited? What was the original meaning of continent?

* 1. The division here adopted is that of Malte Brun. Some think that New Holland, from its great magnitude, might be considered a third continent. Instead of *Oceanica*, Pinkerton employs the two divisions, *Australasia* (that is, *Southern Asia*), and *Polynesia*; the latter consisting of the numerous islands in the Pacific. Sometimes the term *Australia* is used instead of Australasia.

Of the land on the earth's surface, Europe and Oceanica probably contain about one sixteenth part each; Asia and America, each about a third part; and Africa, rather above a fifth.

2. *Oceans.*—There are five oceans: the Pacific, between Asia and America; the Atlantic, between Europe and Africa on the east, and America on the west; the Indian Ocean, between Asia, Africa, and New Holland; and the Northern and Southern Oceans, near the north and south poles.*

3. *Seas.*—From the oceans, various seas extend into the land. The principal of these are the Mediterranean and Baltic, from the Atlantic, on the east side; and the Gulf of Mexico and Hudson's Bay, on the west: the White Sea, from the Northern Ocean; the Gulf of California, from the Pacific, on the east side; and the Sea of Okhotsk, on the west: and the Red Sea and Persian Gulf, from the Indian Ocean.

4. *Islands.*—The islands on the globe are extremely numerous. Some of these stand single, and remote from any other land; but they are much more commonly collected into groups. When the islands composing such collections are very numerous, the groups, or the seas in which they are found, are often called *archipelagoes.*† The principal groups are the East Indian Islands, or the Indian Archipelago, between New Holland and Asia; the West Indian Islands, or the Columbian Archipelago, between North and South America; the British Isles, west of Europe; the Society Isles, the Friendly Isles, the Sandwich Isles, and many others, in the Pacific.‡

5. *Population.*—The number of human beings that inhabit the earth, is very uncertain. It is stated by some as amount-

* 2. There is, in strictness, but one sea on the globe, as the oceans are all connected together; and by this fluid the continents, as well as the islands, are surrounded. The limits of the oceans, where they are connected together, are arbitrary; no precise boundary being pointed out by nature. In this uncertainty, we may perhaps assume, as the limit of the Southern Ocean, a circle passing through Cape Horn, the Cape of Good Hope, and Van Diemen's Land; while the Northern or Arctic Ocean may be considered as lying North of Europe, Asia, and America, and as joining the Pacific at Behring's Strait, and the Atlantic in a line drawn from the north of Lapland to Hudson's Strait. Pinkerton assumes the polar circles as the boundaries of these oceans; but this is unnatural.

† 3. So called from the Archipelago, a part of the sea between Europe and Asia, which abounds in islands.

‡ 4. It will be seen, by inspecting a terrestrial globe, or a map of the world, that far the greater portion of the land is in the northern hemisphere; none of much consequence or extent being south of the equator, except New Holland, and parts of South America and Africa. Much more of the land also lies east of the meridian of Greenwich, than west of it.

ing to 1000 millions; while others, with perhaps better reason, reduce it to 600 millions or 700 millions.*

6. *Religion.*—Of the human race, about a third part are Christians, above a sixth Mohammedans, and the rest idolaters of various kinds, with the exception of four or five millions of Jews.†

Questions on Section III.

1. Into what parts may the land on the earth's surface be divided? Of what is the Old Continent composed? The New? Oceanica?
2. What oceans are there? How is the Pacific situated? The Atlantic? The Indian? The Northern? The Southern?
3. What seas are connected with the Atlantic on the east side? What on the west side? What with the Northern Ocean? The Pacific? The Indian?
4. How are islands generally situated? What is an archipelago? What are the principal groups of islands?
5. What is supposed to be the population of the earth?
6. What are the principal religious denominations in the world? What are their supposed proportions?

Exercises on the Map of the World, or the Terrestrial Globe.

Show all the places mentioned in Section III. What countries and seas are in the torrid zone? In the northern temperate? In the southern temperate? In the northern frigid? Through what places does the equator pass? Through what places do the parallels of 45° pass? How are the Sandwich, Society, and Friendly Islands situated in respect to each other, and to the equator? In what ways may a ship sail from the British Isles to New Holland? How from the Baltic to the Persian Gulf? From the Mediterranean to China? What places have the same latitude as London? What are the latitudes of the most southern points of Africa and New Holland? What are the latitudes of the poles? What are the longitudes of the most western point of Africa, and the most eastern point of South America?

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* 5. Of this amount, about one half may perhaps belong to Asia, 200 millions to Europe, 50 millions to America, 60 or 70 millions to Africa, and 20 millions to Oceanica; but it is impossible to arrive at any thing approaching to certainty on the subject.

From the registers that have been kept in various places, it would appear, that the average length of human life is about 33 years, or that one individual dies each year out of every 33. Hence, if we suppose the whole human race to amount to 660 millions, the deaths will be about 20 millions each year, 55,000 each day, 2300 each hour, and 38 each minute; and, if the amount of the population remain nearly stationary, the number of births will be about the same. In these respects, however, there are considerable diversities in different places, arising from their degree of salubrity or fertility, or from wars, emigration, temperance, and various other causes.

Of children newly born, there are about 21 males for 20 females. At the age of fifteen, the number of the females is very little less than that of the males, in consequence of a greater number of the latter having died. After this, as many of the males are cut of by wars, shipwrecks, and various other means, the females are considerably more numerous, particularly after long wars.

† 6. Of the Christians, about 116 millions are Roman Catholics, of whom 66 millions are in Europe; 70 millions are of the Greek church; and 40 or 50 millions are Protestants. The estimates here given, respecting the religions of the world, are taken in substance from Malte Brun.

Questions on the Notes to Section III.

2. What may be assumed as the limits of the Southern Ocean? Of the Northern?
4. Is there more land in the northern or southern hemisphere? Is there more east or west of the meridian of Greenwich?
5. What population may probably belong to each of the great divisions of the earth? What is the average length of human life? How many persons die each year? Each day? Each hour? Each minute?
6. What are the divisions and proportions of Christians?

EUROPE.

IV.—GENERAL VIEW.

1. *Boundaries, &c.*—Europe is the north-western part of the Old Continent, and is much smaller than either Asia or Africa.* It is bounded on the north by the Northern Ocean, on the west by the Atlantic, and on the south by the Mediterranean Sea, which separates it from Africa. The eastern boundary is formed in part by the Archipelago, the Sea of Marmara, the Black Sea, and the Sea of Azov, with the connecting Straits of the Hellespont, of Constantinople, and Ienikale or Ienikali;† and partly by the Uralian Mountains, part of the river Don, and an uncertain line between them, coinciding for some length with the Volga.‡

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* 1. The length of Europe, from Cape St. Vincent to the north-eastern extremity of Russia, is about 3300 miles; and its breadth, from the Sea of Azov to the western coast of Norway, about 1650 miles, or half its length. It is situated between the thirty-sixth and seventy-first parallels of north latitude; and between the tenth degree of west, and the sixtieth of east longitude. Hence, it is all contained in the northern temperate zone, except a part of Lapland, and a small portion of Russia, which are in the northern frigid. The heat and cold are accordingly, in general, moderate; though the southern parts are hot in summer, and the northern very cold in winter.

† 2. The Archipelago, the name of which is probably a corruption of *Aryeiopelagus*, the *Argive* or *Grecian Sea*, was formerly called the Ægean Sea; the Sea of Marmara, the Propontis; the Black Sea, the Euxine Sea; the Sea of Azov, the Palus Mæotis; the Strait of Ienikale, the Cimmerian Bosphorus or Bospŏrus; and the Strait or Canal of Constantinople, the Thracian Bosphorus. The Hellespont is also called the Dardanelles, from Dardania, a place belonging to ancient Troy, which was near it. The Sea of Azov is shallow and muddy, and without rocks; and hence the origin of its ancient name, *palus* in Latin signifying a *marsh*, or *a pool of standing water*. The Hellespont is so narrow, that, besides others, Lord Byron swam across it of late, as Leander is said to have done in ancient times. At its narrowest part, it is about half a mile wide. The Strait of Constantinople is still narrower; so that birds can be heard singing and dogs barking across it, and persons on its opposite shores can converse with each other. Through both the Hellespont and Bosphorus, a current sets with considerable velocity towards the Archipelago; and a like current flows into the Mediterranean through the Strait of Gibraltar. The Strait of Ienikale, or Yenikale, is generally, but improperly, called the Strait of Caffa, the town of that name being at a considerable distance from it.

‡ 3. Malte Brun extends Europe to the Caspian Sea, taking as the boundary north of the Sea of Azov, "the Ural mountains, the river of the same name, the Caspian, and the lowest level between it and the Sea of Azov (a level indicated by the courses of the Manytch and the Kuma);" the Don forming a small part of the limit. The boundary adopted above is more generally received. The matter, however, is of small consequence; and its determination naturally rests principally with Russia.

2. *Seas, Straits, &c.*—Another sea of Europe is the Baltic, which is connected with the Atlantic by the Strait of the Sound, and the Great and Little Belts; and by a channel, the eastern part of which is called the Katte-Gat, and the western the Skager-Rack. There is also the White Sea, in the north of Russia; and from the Mediterranean, extend the Gulfs of Venice and Taranto. Particular names are also given to some parts of the Atlantic. Thus, the sea north of Spain and west of France, is called the Bay of Biscay; that which is east of Great Britain, is named the German Sea, and sometimes the North Sea; and the different parts of the sea between Britain and Ireland, are called St. George's Channel, the Irish Sea, and the North Channel. The sea south of England is called the British or English Channel, and its narrowest part the Strait of Dover. Other straits are the Strait of Messina, between Naples and Sicily; the Strait of Bonifacio, between Sardinia and Corsica; and the Strait of Gibraltar, between Spain and Africa.*

3. *Divisions.*—The following are the principal divisions of Europe, with their chief cities:

SOUTHERN.

DIVISIONS.	CHIEF CITIES.
Portugal	Lisbon
Spain	Madrid
France	Paris
Italy	Rome, Naples
Turkey	Constantinople
Greece	Napoli di Romania

* 4. The Baltic Sea is shallow, its general depth not exceeding 50 fathoms. A current sets out of it, through the Sound, into the German Sea. The width of the Strait of Dover is about 22 miles, of the Strait of Gibraltar 14 or 15 miles, and of the Strait of Messina about 2 miles.

The reason that currents flow into the Mediterranean at both extremities, seems to be, that all the rivers that flow into it, and all the rain that falls on its surface, are not sufficient to supply the evaporation from it, which must be great in so warm a climate. On a similar principle, the current *out* of the Baltic may be accounted for, on the supposition, that the evaporation is not sufficient to carry off the water poured into it by rains and rivers. Some have supposed, however, though perhaps without good reason, that the effects of these currents are compensated by under currents flowing in contrary directions.

MIDDLE.

DIVISIONS.	CHIEF CITIES.
England	London
Scotland	Edinburgh
Ireland	Dublin
Netherlands	Amsterdam
Germany, comprehending the kingdoms of Bavaria, Hanover, Saxony, &c.	Dresden, Hamburgh, Munich, &c.
Prussia	Berlin.
Poland	Warsaw
Switzerland	Bern
Austria	Vienna

NORTHERN.

Denmark	Copenhagen
Norway	Bergen
Sweden	Stockholm
Russia	St. Petersburg, Moscow
Lapland	Tornea, Vardehuus

4. *Islands.*—The principal islands of Europe, besides Great Britain and Ireland, are Sicily, Sardinia, Corsica, Candia, Majorca, Minorca, Iviça or Iviza, and Malta, in the Mediterranean; Negropont, and many others, in the Archipelago; Zealand and Funen, at the entrance of the Baltic; Gothland, and others, in the same sea; Iceland and Spitzbergen, in the Northern Ocean; and the Azores, or Western Islands, in the Atlantic, 700 or 800 miles west of Portugal.

5. *Peninsulas and Isthmuses.*—The chief peninsulas are Spain and Portugal, Italy, the Morea, the Crimea or Crim, and Jutland. Sweden and Norway also form a large peninsula.* Two of these are joined to the mainland by isthmuses: the Morea, by the Isthmus of Corinth; and Crimea, by the Isthmus of Perekop.

* 5. It is a remarkable fact, that all the principal peninsulas in the world point southward, except Jutland in Europe, and Yucatan in America; and these two are low, and are composed of sand and other alluvial matter.

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6. *Capes.*—Some of the principal capes are the North Cape, in Lapland; the Naze, south of Norway; Cape Finisterre, in Spain; Cape St. Vincent, in Portugal; Cape Spartivento, in Italy; and Cape Matapan, in the Morea.

7. *Mountains.*—The principal mountains are the Alps, which extend round the north and west of Italy, from the Gulf of Venice to the Mediterranean; the Pyrenees, between France and Spain; the Dovre Feld, and other mountains, between Sweden and Norway; the Carpathian, north and north-east of Hungary; the Ural, north-east of Europe; and the Apennines, which extend through the middle of Italy. Besides these, there are Mount Etna in Sicily, and Mount Vesuvius near Naples, which are the principal volcanoes, or burning mountains, in Europe.*

8. *Rivers.*—The chief rivers are the Volga, which flows south-easterly through the Russian dominions, out of Europe, into the Caspian Sea, in Asia; the Danube, or Donau, which, after passing easterly through part of Germany, and through the Austrian and Turkish territories, falls into the Black Sea; the Rhine, which flows north-westerly through Switzerland, Germany, and the Netherlands, into the German Sea; the Don, which flows through Russia into the Sea of Azov; the Dnieper, which passes through the same country, and falls into the Black Sea; the Rhone, Loire, and Seine, in France; the Tagus, Guadiana, and Ebro, in Spain; the Elbe and Oder in Germany, and the Po in Italy.†

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* 6. The Alps are the highest mountains in Europe. Two of their summits, Mont Blanc and Mont Rosa, are elevated nearly 16,000 feet, or almost three miles above the level of the sea. The heights of Mount Etna and of the highest of the Pyrenees are each about 11,000 feet, and that of Vesuvius about 3600 feet.

The learner will form the best conception of the heights of mountains by comparing them with the height of some mountain or hill with which he is acquainted. Thus, the height of Dovis, near Belfast, being about 1540 feet, it will appear that ten such mountains, piled on one another, would scarcely equal the height of Mont Blanc.

† 7. The most elevated part of a country may be known by its giving origin to rivers flowing in different directions. Hence, Switzerland will be seen to be the highest part of Europe, as in it the Rhine and Rhone, and the Inn, a principal branch of the Danube, have their sources.

As rivers derive their waters from the countries through which they pass, the

9. *Lakes.*—The principal lakes are those of Ladoga and Onega, in Russia; Wenern, Wettern, and Melern, in Sweden; and Geneva and Constance, at the south-western and north-eastern extremities of Switzerland.*

10. *Population and Army.*—The population of Europe is supposed to be rather more than 200 millions; and the amount of the armies of all the states is probably about two millions, or a hundredth part of the entire population.

11. *Religion.*—Christianity is established over all Europe, except Turkey; and even there, though the religion of the state is Mohammedanism, nearly two thirds of the people are Christians of the Greek church.†

12. *Governments.*—A greater degree of civil liberty is enjoyed in Europe, than in most other parts of the world; the governments of several of the most important states being limited monarchies.‡

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longer the course of any river is, or, rather, the greater the portion of country is that is drained by the river and its branches, the larger it may be expected to be; and hence we have the means of forming some estimate of the comparative magnitudes of rivers. Our conclusions, however, will be modified in some degree by the nature of the country; a river which flows through a dry and parched region, being necessarily smaller than one of the same length, or which drains an equal space, in a country in which there is more rain, or less evaporation.

* 8. Lakes may be regarded as portions of water, filling the bottoms of valleys, which are lower than any part of the surrounding country. In consequence of the greater inequalities of surface, lakes are generally more numerous in mountainous than in flat countries: and hence there are few lakes in England and France; and many in Scotland, Switzerland, and Sweden.

† 9. The established religion in Russia is also that of the Greek church. In the rest of Europe, after Russia and Turkey, the Roman Catholic religion prevails in the south, the Protestant in the north, and in the middle there is a mixture of both.

‡ 10. Europe, though much smaller than Asia, Africa, or America, is by far the most important division of the earth. In civilization, arts, science, literature, manufactures, commerce, and power, it stands unrivalled; and, compared with other parts apparently more favoured by nature, it affords a striking exemplification of the effects which man is able to produce when his energies are properly directed.

The number of reigning families in Europe is 53. The revenues of these, exclusive of private incomes, is upwards of 11 millions sterling.

In England, France, and Germany alone, the number of living writers exceeds 12,000,—a body, as has been remarked, that, were it not divided against itself, might govern the world.

About two thirds of the population are employed in agriculture, and 15 or 20 millions in manufactures.

The amount of annual taxes, paid by each individual at an average, in different countries of Europe, has been estimated as follows:

	£	s.	d.		£	s.	d.
England	3	13	4	Austrian Empire	0	12	6
France	1	8	4	Portugal	0	13	4
Netherlands	1	7	6	Russia	0	11	8
Denmark	0	18	4	Sweden, and State of the Church	0	10	0
Prussia	0	17	6	Naples	0	9	2
Spain	0	15	0	Tuscany	0	8	4

The amount expended in supporting the army in Europe, is about two fifths of the entire revenue.

Questions on Section IV.

1. How is Europe situated? How bounded on the north? On the west? On the south? On the east?
2. How is the Baltic connected with the Atlantic? Where is the White Sea? What gulfs extend from the Mediterranean? What parts of the Atlantic adjoining Europe have particular names? What are the other principal straits of Europe?
4. What are the principal islands in the Mediterranean? In the Archipelago? At the entrance of the Baltic and in it? In the Northern Ocean? Where are the Azores?
5. What are the chief peninsulas of Europe? Isthmuses?
7. How are the Alps situated? The Pyrenees? The Carpathian? The Uralian? The Apennines? What mountains are between Sweden and Norway? What are the principal volcanoes in Europe?
8. What are the course and termination of the Volga? The Danube? The Rhine? The Don? The Dnieper? What are the principal rivers in France? Spain? Germany? Italy?
9. What are the principal lakes of Russia? Of Sweden? Where are the lakes of Geneva and Constance?
10. What is the population of Europe? How many, and what proportion of the people, are soldiers?
11. What are the religions of Europe?
12. What is the condition of the people in respect to civil liberty?

Exercises on the Map of Europe.

Point out the various places named from the beginning of the foregoing section to the end of No. 9. Find the latitudes and longitudes of the chief cities. What countries have no sea-coast? How may a ship sail from the White Sea to the Sea of Azov? From the Gulf of Venice to the Gulf of Bothnia? How from Dublin to Petersburg? In travelling by the shortest route from Dublin to Constantinople, what seas and countries are passed over? Show the same in respect to the route from Bergen to the Morea. How might a person travel from Cape Matapan to the Naze, without crossing any sea, lake, or river?

V.—THE BRITISH ISLES.

1. *Names, &c.*—The British Isles are Great Britain and Ireland, with several smaller situated near

Questions on the Notes to Section IV.

1. What are the length and breadth of Europe, and whence measured? What are the extreme latitudes and longitudes? In what zones is it situated? What is the general nature of its climate?
2. What other name has the Hellespont? What is the nature of the Sea of Azov? What particulars are stated respecting the Hellespont and Bosphorus? What currents flow through them, and through the Strait of Gibraltar?
4. What is the general depth of the Baltic? What current sets through the Sound? What are the widths of the Straits of Dover, Gibraltar, and Messina? How may the currents above mentioned be accounted for?
5. What is the direction of the principal peninsulas in the world?
6. What are the heights of the highest of the Alps and Pyrenees? Of Mount Etna?
7. How may the highest part of a country be known? How may the magnitudes of rivers be estimated?
8. Where are lakes in general most numerous?
9. In what parts of Europe do the principal divisions of Christians reside?
10. How does Europe stand in comparison with the other parts of the world?
What is the number of reigning families in Europe, and what the amount of their revenues?
What number of living writers is there in England, France, and Germany?
What proportion of the people are employed in agriculture? How many in manufactures?
How much of the revenue is expended in supporting the army?

them; and they constitute the United Kingdom of Great Britain and Ireland, or, as it is frequently called, the British Empire. Great Britain is divided into two parts: the southern, called England; and the northern, Scotland.

2. *Situation and Boundaries.*—These islands are situated west of the middle, or main body of Europe. Great Britain is bounded on the east by the German Sea; on the south, by the English Channel; on the north, by the Atlantic Ocean; and on the west, by the same ocean at the north and south; and by St. George's Channel, the Irish Sea, and the North Channel, at the intermediate parts. The last three form the eastern boundary of Ireland, which is bounded on all the other sides by the Atlantic Ocean.

3. *Colonies.*—Besides the territories already mentioned, foreign possessions of unexampled extent belong to the British Empire, in the different parts of the world. The principal are India, Canada, many of the West Indian Islands, Hanover, New Holland, and the district of the Cape of Good Hope, which will be described in their proper places.

Questions on Section V

1. What are the British Isles? What do they constitute? Into what parts is Great Britain divided?
2. How are the British Isles situated? How is Great Britain bounded on the east? The south? The north? The west? How is Ireland bounded on the east? On the other sides?
3. What are the principal colonies belonging to the British Empire?

Exercises respecting the British Isles.

How are England, Scotland, and Ireland situated in respect to each other? What are the narrowest parts of the sea between Britain and Ireland? From what countries do the German Sea and the English Channel separate Britain?

VI.—ENGLAND.*

1. *Divisions.*—England consists of two parts, England Proper and Wales, the former of which is much

* 1. England is situated between the parallels of 50° and 56° north, and between 2 degrees of east, and 6 of west longitude. The length from the northern extremity

larger than the latter. England Proper is divided into 40 counties or shires, and Wales into 12; which, with their chief towns, are as follows:

SIX NORTHERN.

COUNTIES OR SHIRES.	CHIEF TOWNS.*
Northumberland .	*Newcastle-on-Tyne*, Berwick, *Alnwick*, Morpeth
Cumberland . . .	*Carlisle*, Whitehaven, Wigton, Keswick, Workington
Durham	Sunderland, *Durham*, Darlington, Barnardcastle
Westmoreland . .	Kendal, *Appleby*, Kirkby-Lonsdale, Burton
Lancashire	Manchester, Liverpool, *Lancaster*, Preston, Bolton, Blackburn, Wigan, Warrington
Yorkshire	Leeds, Sheffield, *York*, Hull or Kingston-upon-Hull, Whitby, Bradford, Huddersfield, Halifax, Doncaster, Scarborough, Harrowgate

FOUR NEXT WALES.

Cheshire	Stockport, *Chester*, Macclesfield
Shropshire	*Shrewsbury*, Wellington, Ellesmere
Herefordshire . .	*Hereford*, Leominster
Monmouthshire .	*Monmouth*, Abergavenny, Chepstow

TWELVE MIDLAND.

Nottinghamshire .	*Nottingham*, Newark-on-Trent, Mansfield
Derbyshire	*Derby*, Chesterfield
Staffordshire . . .	Wolverhampton, *Stafford*, Newcastle-under-Lyne, Litchfield, Burton-on-Trent

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to Portland Bill, the most southern point of Dorsetshire, is about 360 miles; and the breadth from the east of Suffolk to the west of South Wales, is above 200 miles. It is separated from Scotland by the river Liddal, the Cheviot Hills, and the Tweed.

* 2. In this article and in that on Ireland, the assize towns are in Italics, and the largest towns in capitals. In some counties of England, assizes are held in one town at one season, and in another at another season; and in some, they are held in different towns at the same time. In a first course of Geography, the teacher may perhaps consider it sufficient, for the pupil to point out on his map, in this and other sections, one or two of the towns given in each division.

COUNTIES.	CHIEF TOWNS.
Leicestershire . .	*Leicester*, Hinckley, Ashby-de-la Zouch, Melton Mowbray
Rutlandshire . . .	*Oakham*
Northamptonshire	*Northampton*, Wellingborough, Peterborough
Warwickshire . .	Birmingham, *Warwick*, Coventry
Worcestershire . .	*Worcester*, Dudley, Kidderminster
Gloucestershire . .	Bristol, Cheltenham, *Gloucester*
Oxfordshire	*Oxford*, Henley, Woodstock
Buckinghamshire .	*Aylesbury*, *Buckingham*, Marlow, Eton
Bedfordshire . . .	Biggleswade, *Bedford*, Dunstable
EIGHT EASTERN.	
Lincolnshire . . .	Boston, *Lincoln*, Gainsborough, Stamford
Huntingdonshire .	St. Ives, *Huntingdon*
Cambridgeshire .	*Cambridge*, Wisbeach, Ely, Newmarket
Norfolk	*Norwich*, Yarmouth, Lynn, *Thetford*
Suffolk	Ipswich, *Bury St. Edmunds*, Woodbridge
Essex	Colchester, *Chelmsford*, Harwich
Hertfordshire . . .	*Hertford*, St. Albans
Middlesex	LONDON, Brentford, Enfield, Uxbridge, Staines, Chelsea
THREE SOUTH-EASTERN.	
Surrey	Southwark, *Kingston*, *Guilford*, *Croydon*, Epsom
Kent	Greenwich, *Maidstone*, Woolwich, Rochester and Chatham, Deptford, Canterbury, Dover, Margate, Tunbridge
Sussex	Brighton, Chichester, *Lewes*, *Horsham*, Hastings
FOUR SOUTHERN.	
Berkshire	*Reading*, *Abingdon*, Windsor
Wiltshire	*Salisbury*, Bradford, Trowbridge
Hampshire	Portsmouth, *Winchester*, Southampton, Gosport
Dorsetshire	Pool, *Dorchester*, Bridport, Weymouth

THREE SOUTH-WESTERN.

COUNTIES.	CHIEF TOWNS.
Devonshire	PLYMOUTH, *Exeter*, Axminster
Cornwall	REDRUTH, *Launceston*, *Bodmin*, Penzance
Somersetshire . .	BATH, *Taunton*, *Bridgewater*, *Wells*

SIX IN NORTH WALES.

Flintshire	HOLYWELL, *Mold*, St. Asaph, Flint
Denbighshire . . .	WREXHAM, *Ruthin*, Denbigh
Caernarvonshire .	*CAERNARVON*, Bangor, *Conway*
Anglesea	HOLYHEAD, *Beaumaris*
Merionethshire . .	*DOLGELLY*, *Bala*
Montgomeryshire	*WELCH-POOL*

SIX IN SOUTH WALES.

Radnorshire . . .	RADNOR, *Presteigne*
Cardiganshire . .	ABERYSTWITH, *Cardigan*
Pembrokeshire . .	*HAVERFORD WEST*, *Pembroke*
Caermarthenshire	*CAERMARTHEN*
Brecknockshire .	*BRECKNOCK* or *BRECON*
Glamorganshire .	*CAERDIFF*, Swansea, Llandaff

2. *Islands.*—The principal islands near the coast of England, are the Isle of Wight, south of Hampshire; the Isle of Anglesea, in North Wales; the Scilly Isles, south-west of Cornwall; and Sheppey Isle, in Kent. The Isle of Man lies in the Irish Sea, at nearly equal distances from England, Scotland, Ireland, and Wales; and contains the towns of Ramsay, Douglas, Castletown, and Peel. The islands of Guernsey, Jersey, Alderney, and Sark, near the north-west coast of France, also belong to England. The capitals of the first three are St. Pierre, St. Helier, and St. Anne.*

* 3. Other islands are Holy Isle or Lindisfarne, and Coquet Isle, off Northumberland; and Lundy Isle, in Bristol Channel. The Isle of Wight is remarkably fertile, producing, it is said, as much grain in one year as would serve the inhabitants for ten. South of Cornwall, and at the distance of 12 miles, are the Eddystone rocks, which are remarkable for their lighthouse. They are exposed to the uncontrolled fury of the Atlantic; and they were formerly fatal to shipping, in numerous instances. To obviate this, the erection of a lighthouse, on the principal rock, was finished in the year 1700, by Mr. Henry Winstanley, of such strength, as he conceived, that he declared it was his most ardent desire to be in it during the most tremendous storm. Unfortunately, about three years after, he obtained his wish, and was buried in its ruins. After six years, another of wood was erected, which was destroyed by fire in 1755. In 1756, a third was finished by Mr. Smeaton, the celebrated architect, which seems likely to resist all the fury of the elements, and to be capable

3. *Seaports.*—The principal seaports are London, Liverpool, Bristol, Chester, Hull, Newcastle-on-Tyne, Sunderland, Shields, Lynn, Yarmouth, Harwich, Chatham, Dover, Portsmouth, Plymouth, Falmouth, Swansea, Milford, and Holyhead.

4. *Capes.*—Flamborough Head, Spurn Head, North Foreland, South Foreland, Beachy Head, Start Point, Lizard Point, Land's End, St. David's Head, St. Bee's Head, &c.

5. *Mountains, and Face of the Country.*—The principal mountains are the Cheviot Hills, on the borders of Scotland; Skiddaw and Crossfell, in Cumberland; the Peak, in Derbyshire; and Snowdon, and many others, in Wales. The country, however, except Wales and Cornwall, is in general free from mountains; and the eastern counties, from the Humber to the Thames, are generally flat, and in some parts marshy.

6. *Lakes.*—The most remarkable lakes are those of Cumberland and Westmoreland.*

7. *Rivers.*—The chief rivers are the Thames, which passes Oxford, Windsor, and London, and falls into the German Sea; the Severn, which falls into Bristol Channel; the Humber, north of Lincolnshire, and composed of the Northern Ouse, Trent, and other rivers; the Mersey, which falls into the Irish Sea at Liverpool; the Tyne, north, and the Tees, south of Durham; and the Southern Ouse, and other rivers, which flow into the Wash, south-east of Lincolnshire.†

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of being destroyed only by an earthquake. It is nearly 60 feet high, and is composed of stone joined together by a strong cement, and grooved into the rock in such a manner, that its parts adhere to one another and to the rock, perhaps more firmly than the parts of the rock itself.

* 4. These are much visited, on account of their beautiful and romantic scenery. The principal of them are those of Coniston, Ulswater, Windermere or Winandermere, and Derwent Water.

† 5. Other rivers are the Avons, one of which passes Stratford in Warwickshire, the town where Shakspeare was born; another, Bath; and a third Salisbury: the Welland, Witham, and Nen, which fall into the Wash; the Medway in Kent; the Dee which passes Chester; the Eden which passes Carlisle; the Teify in South Wales; and many others. Besides the rivers, there are great numbers of canals, which contribute much to the wealth and prosperity of the country.

8. *Cities and Towns.*—The capital is London, which has a population of a million and a quarter; and, in respect to commerce and wealth, surpasses every other city in the world. Other places of importance are Manchester, Liverpool, Birmingham, Bristol, Leeds, Plymouth, and Norwich, the population of each of which exceeds 50,000.*

9. *Climate, Soil, &c.*—The climate of England, though somewhat moist and variable, is good; not being subject to great heat in summer, nor to great cold in winter.† There are a few rude and barren districts: but most of the country is very fine, and its fertility great; and, in general, it is in a high state of cultivation, and is much ornamented with wood.

10. *Animals and Minerals.*—The horse in England is equal or superior to that of any other country, the finest species having been introduced from various places, to improve the breed. There are also excellent breeds of black cattle and sheep. The principal minerals are tin, iron, lead, and coals, which are found in great abundance, and contribute much to the wealth of the country.‡

11. *Population.*—According to the census of 1821, the population of England and Wales was nearly twelve millions.§

12. *Army and Navy.*—The army of the United Kingdom amounted in 1812, during the late war, to about 320,000. Be-

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* 6. In 1821, the population of Manchester was 134,000; of Liverpool, 119,000; of Birmingham, 107,000; of Bristol, 88,000; and of Leeds, 84,000. Liverpool ranks next to London for foreign trade.

† 7. In islands, the temperature is less variable than on continents; because, in passing over the sea around them, hot winds are cooled and cold winds warmed, the air always tending to assume the temperature of the bodies with which it is in contact. Extensive tracts of land, on the contrary, present sometimes large surfaces of snow, and sometimes great spaces of burning sand or parched country; and these impart their temperature to the wind, and by this medium to the adjoining countries. It is farther to be observed, that land changes its temperature much more rapidly than large masses of water.

‡ 8. In a work like the present, it would be vain to attempt even an enumeration of the animals, minerals, or other productions, of any particular country. Hence, nothing of this kind will be mentioned, except what is of an important or peculiar nature. In some of the luxuriant pastures of England, oxen attain an enormous magnitude; some of them having been known to weigh a ton and a quarter, and in some instances, it is said, considerably more. Race-horses have also been produced of almost inconceivable swiftness. The horse called Childers, carrying 9 stone 2 pounds, ran 4 miles in 6 minutes and 48 seconds, or at the rate of above 35 miles an hour.

The tin mines of Cornwall have been celebrated since the earliest times, and produce great quantities of excellent tin. The chief iron mines are those of Colebrookdale in Shropshire, Dean Forest in Gloucestershire, and Ulverston in Lancashire. Coal, which is of such vital importance to the manufactures of the country, is produced in vast quantities at Newcastle-on-Tyne, and in various other places.

England abounds in mineral waters, the principal of which are those of Bath, Bristol, Cheltenham, Tunbridge, Buxton, Harrowgate, and Scarborough.

§ 9. Accurately, England 11,261,437, and Wales 717,438; total, 11,978,875. In 1801 the population of both was 9,168,000, and in 1811 it was 10,497,000.

sides these, the local militia and the yeomanry, for the internal defence of the country, amounted to more than 360,000. The British fleet is by far the most powerful that has ever existed at any period of the world. In 1812, the men employed in it amounted to 180,000.*

13. *Government.*—The government is a limited monarchy, consisting of the king and parliament.†

14. *Manufactures, &c.*—The manufactures of England are the most flourishing and extensive in the world. Some of the principal are those of cotton goods, the centre of which is Manchester; of woollens, the centre of which is Leeds; of hardware, the chief seats of which are Birmingham and Sheffield; and of pottery, which is principally established in Staffordshire. The tin mines of Cornwall give employment to 100,000 men; and many are employed in different parts of the kingdom in collieries, and in iron, lead, and other mines.

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* 10. During the late war, the navy sometimes consisted of more than 1000 vessels, of which upwards of 250 were ships of the line, that is, ships of more than 50 guns; above 30 were fifty-gun ships; and nearly 200 were frigates. The superiority of England at sea, arises, in a great degree, from the extent of its commerce, as the merchant vessels always furnish an ample supply of experienced seamen for the navy.

† 11. There are two houses of parliament; the house of lords or peers, and the house of commons. The members of the former are the dukes, marquises, earls, viscounts, and barons of England, or of the United Kingdom; also, the archbishops and bishops of England and Wales. It contains also 16 peers for Scotland, and 32 for Ireland. As the king has the power of creating new peers, the number of members may vary: it is now about 380. The house of commons consists of 658 members. Of these, 489 are for England, 24 for Wales, 45 for Scotland, and 100 for Ireland.

Each branch of the legislature has its peculiar powers and privileges. The king has power to make war or peace; to enter into alliances and treaties; to raise soldiers, and impress seamen; to assemble, adjourn, prorogue, or dissolve parliament, whenever he thinks proper; and to give his assent to acts of parliament, without which they are not valid. He appoints all magistrates, all officers of state, and of the army and navy; as also all the superior, and many of the inferior clergy. His person is accounted sacred; and even to imagine or intend his death, is a capital crime. The succession to the crown is hereditary, but may be limited or changed by parliament. The king is bound, by the coronation oath, to govern according to the laws and customs of the realm; to maintain the Protestant religion, as established by law; and to preserve to the bishops, clergy, and churches, their rights and privileges.

Peers cannot be arrested, except for treason, and some other high crimes; and they can be tried only by a jury of peers, who give their verdict, not upon oath, but upon their honour. Peers can also vote by proxy, which the commons cannot.

The commons enjoy freedom of speech, and cannot be questioned out of the house for any thing said within it. Their own persons also, and those of their servants, are free from arrest in civil causes, while on their journey to parliament or from it, and during their attendance there. They can impeach any of the king's ministers, and order him to be tried by the peers. With them, also, all bills for levying money off the nation must originate; and they allow the peers to make no change on such bills.

A proposed law or act, or, as it is called, a *bill*, must be submitted to the consideration of the members, or, as it is termed, *read*, three times in one house of parliament; and, if on each reading it be agreed to by a majority of the members, it is submitted to the other house. If, on being three times read in this house, it pass in like manner, it requires only the assent of the king to make it a part of the law of the land. The royal assent has not been withheld since the time of William III.; though, in theory, it may. It may also be observed, that if, at any reading, a majority of either house vote against a bill, it then falls to the ground. It may be introduced, however, during some following session; but every thing must recommence from the beginning.

15. *Commerce.*—The commerce of England exceeds that of any other country in ancient or modern times, extending to every part of the earth that presents an inducement, particularly to the United States of America, the East and West Indies, and almost every country of Europe.*

16. *Universities, &c.*—There are two universities in England; one in Oxford, and one in Cambridge. Other seminaries are the Royal Military Academy, at Woolwich; the Royal Military College, at Sandhurst, in Berkshire; the Naval College, at Portsmouth; and the East India College, at Hertford.† Education is much attended to among the higher and middle classes; and the country contains a great number of learned men, and excellent writers on almost every subject.

17. *Religion.*—The religion established by law is the Protestant, under the episcopal form, or that in which the affairs of the church are managed by archbishops and bishops. There are two archbishops, those of Canterbury and York; and in the province of the former there are twenty-one bishops, and in that of the latter four.‡ From the established religion, there are many Dissenters, of various sects, which are all tolerated.

18. *Character.*—England having been long a civilized country, the people are accustomed to habits of good order and industry. They have also perhaps higher ideas of comfort, in their mode of life, than the inhabitants of any other country; and are tenacious, in a high degree, of their civil rights.

19. *Curiosities.*—The principal curiosities are Stonehenge§ in

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* 12. The commerce of England first began to flourish, in any considerable degree, in the reign of James I. It was checked, however, by the turbulent times that succeeded, but revived and increased greatly during the Commonwealth and the reign of Charles II.; and since that time it has continued gradually to advance to its present astonishing extent.

† 13. There are also the great Schools of Westminster, St. Paul's, Eton, Winchester, and Harrow. These are of long standing, and of great celebrity as seminaries for classical education. The number of distinguished men produced in England, in modern times, is extremely great. Her men of science, taste, and literature; her poets, statesmen, orators, warriors, and lawyers, have been very numerous, and many of them have not been surpassed in ancient or modern times. Some of the most eminent are Newton, Shakspeare, Milton, Pope, Addison, Johnson, Lord Chatham, the Duke of Marlborough, and Blackstone.

‡ 14. The bishoprics in the province of Canterbury, are those of (1) London, (2) Winchester, (3) Litchfield and Coventry, (4) Lincoln, (5) Ely, (6) Salisbury, (7) Exeter, (8) Bath and Wells, (9) Chichester, (10) Norwich, (11) Worcester, (12) Hereford, (13) Rochester, (14) Oxford, (15) Peterborough, (16) Gloucester, (17) Bristol, (18) Llanduff, (19) St. David's, (20) St. Asaph, (21) Bangor; and in the province of York there are those of (1) Durham, (2) Carlisle, (3) Chester, (4) Sodor and Man in the Isle of Man. The bishop of this last diocese is the only one that has not a seat in parliament. The other dignitaries of the church are deans, prebendaries, and archdeacons; and the inferior clergy are rectors, vicars, and curates. The archbishops and bishops, and many of the other clergy, as already mentioned, are appointed by the king. The chief classes of Dissenters are Baptists, Independents, Methodists, and Roman Catholics.

§ 15. Stonehenge is a remarkable remnant of antiquity, the original use of which is unknown. It consists principally of two concentric circles of huge upright stones, which support as many others of great magnitude. The diameter of the

Wiltshire, the Peak in Derbyshire, and the lakes and scenery of Cumberland.

20. *Historical Sketch.*—The Romans, under Julius Cæsar, invaded Britain 55 years before Christ. Having afterwards conquered it, they at length relinquished it in the year 448. After this, it was invaded by bands of the Saxons, a people who inhabited the north of Germany. By these adventurers, England was conquered, and was divided into seven small kingdoms, called the Saxon Heptarchy. These were all united into one kingdom, about the year 827. The next invaders were the Danes, who, after various struggles, were at length so successful, that the throne was filled by some of their princes. The Saxon monarchy was, however, again restored, and continued till 1066, when William, duke of Normandy, afterwards called William the Conqueror, gained the battle of Hastings, and by it obtained the throne.* The most remarkable events in English history that have since taken place, are, the annexing of Ireland to England in the reign of Henry II.; the granting of the Magna Charta by John, in the year 1215; the successful invasions of France by Edward III. and Henry V.; the wars between the princes of the houses of York and Lancaster, which distracted the kingdom in the fifteenth century; the introduction of the Reformation, in the reign of Henry VIII.; the union of the crowns of England and Scotland, under one sovereign, James I. in 1603; the beheading of his son, Charles I. in 1649, and the establishment of the Commonwealth; the Restoration

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greater circle is about 108 feet, and that of the interior about 90 feet; and within them are two elliptical figures of similar formation, the one within the other. Some of the upright stones are 22 feet high, and support others 8 feet high. About 140 of these great stones still remain, standing or fallen; but many of them have been removed.

* 16. *List of the Kings of England, since the Norman Conquest, with the times at which they began to reign.*

William I.	1066	11th century.
William II.	1087	
Henry I.	1100	
Stephen	1135	12th century.
Henry II.	1154	
Richard I.	1189	
John	1199	
Henry III.	1216	13th century.
Edward I.	1272	
Edward II.	1307	14th century.
Edward III.	1326	
Richard II.	1377	
Henry IV.	1399	
Henry V.	1413	15th century.
Henry VI.	1422	
Edward IV.	1461	
Edward V.	1483	
Richard III.	1483	
Henry VII.	1485	
Henry VIII.	1509	16th century.
Edward VI.	1547	
Mary I.	1553	
Elizabeth	1558	
James I.	1603	17th century.
Charles I.	1625	
Charles II.	1649	
James II.	1685	
William III. and Mary II.	1688	
Anne	1702	18th century.
George I.	1714	
George II.	1727	
George III.	1760	
George IV.	1820	19th century.

of the kingly government, under Charles II. in 1660; the Revolution, in which James II. lost the crown, and was succeeded by his daughter Mary, and her husband William III.; and the accession of George I. elector of Hanover, the first of the present reigning family, in 1714.*

Questions on Section VI.

1. Into what two parts is England divided? Into how many counties are these subdivided?
2. What are the principal islands near the coast of England? Where is the Isle of Man? What towns does it contain? What islands near France belong to England? What are their principal towns?
5. What are the principal mountains? What is the general character of the country in respect to mountains? What parts are flat?
6. Where are the principal lakes situated?
7. What is the course of the Thames, and into what sea does it fall? Into what sea does the Severn fall? Where is the Humber, and of what is it composed? Into what sea does the Mersey fall, and where? Where are the Tyne? The Tees? The Southern Ouse?
8. What is the capital of England? What is the population of that city? In what does it surpass every other city? How many, and what towns of England have 50,000 inhabitants or upwards?
9. What is the nature of the climate of England? What is the general character of the country in respect to fertility, and to cultivation? How is it ornamented?
10. What sort of horses, black cattle, and sheep, are in England? What are the principal minerals? What is their effect on the country?

* 17. The English language owes its copiousness, and other excellencies, in a great degree, to the events mentioned above, particularly to the conquests of the country by the Saxons and Normans, deriving from the former its connexion with the northern languages of Europe, and from the latter most of the numerous words which it contains of Latin origin.

Questions on the Notes to Section VI.

1. What are the extreme latitudes and longitudes, and the length and breadth of England? How is it separated from Scotland?
3. Where are the Eddystone rocks? What lighthouses have been erected on them?
4. What are the principal lakes of Cumberland and Westmoreland? For what are they remarkable?
5. What river passes the birthplace of Shakspeare?
7. What difference is there between the climate of islands and continents? What is the cause of this difference?
8. What weight have oxen been known to attain in England? At what rate has a race-horse been known to run? What are the principal mineral waters?
10. Of what did the British navy sometimes consist during the late war? What contributes to the superiority of England at sea?
11. How many houses of parliament are there? Who are the members of these? What is the number of members in each?
    What powers and privileges has the king? How is the succession to the crown regulated? To what is the king bound by the coronation oath?
    What are the privileges of the peers?
    What privileges and powers belong to the commons?
    How is a law made? Is the royal assent often withheld?
13. What are some of the great schools of England? Who were some of the most eminent men produced in England?
14. What are the dignitaries of the church of England? What are the inferior clergy? What classes of the clergy are appointed by the king? What are the principal classes of Dissenters?
16. Of what does Stonehenge consist? What are the dimensions of the circles? What is the height of some of the stones?
17. What effect was produced on the English language by the leading events in the history of the nation?

11. What was the population of England and Wales in 1821?
12. What was the army of the United Kingdom in 1812? What number of men were employed in the British fleet the same year?
13. What is the nature of the British government? Of what is it composed?
14. What are the principal manufactures of England, and where are they severally carried on? How many men are employed in the tin mines of Cornwall?
15. In what state is the commerce of England? With what countries is it principally carried on?
16. What are the English universities? What are the other principal seminaries of a public character? What is the state of education among the higher and middle classes?
17. What is the established religion? What archbishops are there? How many bishops are under each? Are there dissenters from the established church? Are they tolerated?
18. What is the character of the people of England?
19. What are the principal curiosities?
20. When did the Romans invade Britain, and under whom? When did they leave it? Who next invaded it? What was the result of this invasion? When was England formed into one kingdom? Who next invaded England, and with what success? When was the Saxon monarchy terminated, and by what means? What remarkable events took place in the reign of Henry II.? Of John? Of Edward III. and Henry V.? In the fifteenth century? In the reign of Henry VIII.? Of James I.? What was the fate of Charles I.? What followed his death? When was the Restoration of the kingly government? When was the Revolution, and what were the principal events brought about by it? When did the present reigning family come to the throne?

Exercises on the Map of England.

What counties of England and Wales have no sea-coast? What is the most central county? What are the southern maritime counties? The eastern? The western? What counties are on the border of Scotland? What is the most direct route from Berwick to the Isle of Wight? From the Land's End to Hull? From Liverpool to Dover? What is the largest county? The smallest? Where do the Severn and Trent approach nearest each other? Measure, by the scale of the map, the distance from the Isle of Man to England, Ireland, Scotland, and Wales; also, from London to Oxford, Cambridge, and Brighton.

As, from the uniformity of plan observed in the composition of the several sections, the questions on each would necessarily bear a close resemblance to each other, and as specimens have now been given of the mode in which such questions may be formed, none will be given hereafter, except those on the notes, together with the exercises on the maps. The teacher, indeed, cannot be at a loss with respect to the formation of such questions, as they will be suggested by the titles of the several paragraphs in the text. The direction to point out the various places mentioned in the section will also be omitted, as it is uniformly to be understood, that this exercise will constitute a regular and principal part of the pupils' employment, while learning the rudiments of Geography.

VII.—SCOTLAND.*

1. *Divisions, &c.*—Scotland is divided into thirty-three counties or shires, which, with their principal towns, are as follows:

* 1. The mainland of Scotland is situated between the parallels of 54° 57′ and 58° 36′ north; and between 1° 44′ east, and 2° 30′ west longitude. Its greatest length and breadth are about 280 and 160 miles; and it contains about 19 millions of English acres, or nearly 30,000 square miles.

SEVEN NORTHERN AND NORTH-WESTERN.

COUNTIES.	CHIEF TOWNS.
Orkney	Kirkwall, Lerwick
Sutherland . .	Dornoch
Caithness . . .	Wick, Thurso
Ross	Dingwall, Tain
Cromarty . . .	Cromarty
Inverness . . .	Inverness, Fort George, Fort Augustus, Fort William, Culloden
Argyle	Inverary, Campbelltown

NINE SOUTH-WESTERN.

Dumbarton . .	Dumbarton
Stirling	Stirling, Falkirk
Bute	Rothsay
Renfrew	Renfrew, Paisley, Greenock, Port Glasgow
Lanark	Glasgow, Lanark, Hamilton
Ayr	Ayr, Kilmarnock, Irvine
Wigton	Wigton, Stranraer, Portpatrick
Kirkcudbright .	Kirkcudbright, Castle Douglas
Dumfries . . .	Dumfries, Annan, Moffat

SEVEN SOUTH-EASTERN.

Roxburgh . . .	Jedburgh, Kelso, Hawick, Melrose
Peebles	Peebles
Selkirk	Selkirk, Galashiels
Berwick	Greenlaw, Dunse, Coldstream *
Linlithgow, or West Lothian	Linlithgow, Bo'ness or Borrowstoness, Queensferry
Edinburgh, or Mid Lothian	EDINBURGH, Leith, Musselburgh
Haddington, or East Lothian	Haddington. Dunbar, North Berwick

TEN EASTERN.

Clackmannan .	Clackmannan, Alloa
Kinross	Kinross
Fife	St. Andrew's, Cupar, Dunfermline, Kirkaldy
Perth	Perth, Dunkeld, Dumblane, Scone
Angus	Montrose, Dundee, Forfar

* 2. The town of Berwick was formerly one of the four principal boroughs of Scotland; but it has long been annexed to England, with a small district extending three or four miles north of the Tweed.

COUNTIES.	CHIEF TOWNS.
Kincardine . .	Bervie, Stonehaven
Aberdeen . . .	New Aberdeen, Old Aberdeen, Peterhead
Banff.	Banff
Murray	Elgin, Forres
Nairn	Nairn

2. *Islands.*—The islands of Scotland, which are extremely numerous, are comprehended chiefly in three groups: the Western Isles, or Hebrides, or Hebudes, to the west; the Orkney Isles, to the north; and the Shetland or Zetland Isles, in the same direction, but more remote. The two latter groups form the shire of Orkney. The chief of the Hebrides are Lewis and Harris (which are joined by an isthmus), North Uist, South Uist, Skye, Mull, Islay, Jura, Iona or Icolmkill; and, in the Frith of Clyde, Arran and Bute. The largest of the Orkneys are Pomona or Mainland, Hoy, and Sanda; and of the Shetland Isles, Mainland, Yell, and Unst.

3. *Seaports.*—The principal ports, and places of resort for shipping, are Glasgow, Greenock, Port-Glasgow, Ayr, Lamlash, Loch Ryan, and Campbelltown, on the Frith of Clyde; Musselburgh, Leith, Kinghorn, and Dysart, on the Frith of Forth; on the rest of the eastern coast, Dunbar, Dundee, Perth, Aberbrothick or Arbroath, Montrose, Aberdeen, Peterhead, Inverness, Cromarty, and Dornoch; on the northern coast, Thurso; and on the western, Portpatrick.

4. *Capes.*—Cape Wrath, Dunnet Head, Duncansby Head, Kinnaird's Head, Buchan Ness, Fife Ness, St. Abb's Head, Burrow Head, Mull of Galloway, Mull of Cantire, Ardnamurchan Point, &c.

5. *Mountains.*—The surface of Scotland is extremely varied, and two thirds of it are mountainous. The Grampian chain, extending from Dumbarton nearly to Aberdeen, forms part of the south-eastern boundary of the Highlands. Ben Nevis, near Fort William, is higher than any other mountain in Great

Britain or Ireland. Of the other mountains, some of the most remarkable are Cairngorm, Ben Lawers, Schihallion, Ben Lomond, and Ben Ledi.*

6. *Lakes.*—Scotland abounds in lakes, or lochs, as they are generally termed there. The most remarkable are Lochs Lomond, Katrine, Achray, and Venachor, at the south of the Highlands, celebrated for the beauty of their scenery; Awe in Argyleshire, Tay and Earn in Perthshire, Ness and Lochy in Inverness-shire, and Leven in Kinross-shire. Besides these *freshwater* lakes, there are numerous *inlets of the sea,* many of which are also called *lochs.* Such are Lochs Fyne, Long, Goil, and Gare, off the Frith of Clyde; Tarbet, Etive, Linnhe, and others, in the Western Highlands; and Beauly, off Murray Frith.

7. *Rivers.*—The Tay in Perthshire; the Forth, which flows into the German Sea, through the Frith of Forth; the Spey, which empties itself into the German Sea, between Murray and Banff; the Clyde, which passes Hamilton, Glasgow, and Greenock; the Tweed, which forms part of the boundary of England; and the Dee and Don, which respectively pass New and Old Aberdeen.

8. *Towns.*—The principal cities and towns are Edinburgh, Glasgow, Paisley, Aberdeen, Dundee, Greenock, and Perth.†

9. *Climate and Soil.*—The climate of Scotland is colder than that of England; and the mountainous districts are barren: but

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* 3. The Highlands consist of the counties of Sutherland, Ross, Inverness, and Argyle; of the western part of Perthshire; and of the mountainous parts of Murray, Banff, and Aberdeen shires. The height of Ben Nevis is 4350 feet. of Cairngorm 4000 feet, of Ben Lawers 4015 feet, of Schihallion 3564 feet, of Ben Lomond 3202 feet, of Ben Ledi 3009 feet, of the Paps of Jura 2476 feet; of Ailsa, in the Frith of Clyde, 940 feet; and of Arthur's Seat, near Edinburgh, 814 feet.

+ 4. In 1821 the population of these towns was as follows: Edinburgh, 138,235 (of which Leith contained 26,000); Glasgow, 147,043 (including 51,919 belonging to the Barony parish, much of which is in the country); Paisley, 47,003; Aberdeen, New and Old, 44,796; Dundee, burgh and parish, 30,575; Greenock, 22,088.

The new part of Edinburgh is extremely beautiful. The old town is of a singular and striking appearance; being built on very uneven ground, and having houses of great height, some of them from ten to fourteen stories. Glasgow, the most populous town in Scotland, is handsome and well built, and has an extensive commerce. Paisley is the first manufacturing town in Scotland, particularly in silk and cotton goods, the annual value of which is thought to be nearly a million sterling. Greenock has much commerce, depending chiefly on Glasgow.

much of the east coast, and of the country between the Friths of Clyde and Forth, is fertile.

10. *Natural Productions, &c.*—The principal crops which are cultivated are those of oats, wheat, barley, and potatoes; and the chief minerals are iron, lead, coal, granite, and other kinds of stone, of a valuable or precious nature.

11. *Population.*—In 1821, the population of Scotland was nearly two millions one hundred thousand.

12. *Agriculture, Manufactures, &c.*—In the more fertile districts, agriculture is in a very advanced state. One of the principal manufactures is that of cotton goods, which extends for a considerable space round Glasgow. Linen is also manufactured in some parts; and there are extensive iron-works.

13. *Universities, Learning, &c.*—In Scotland there are five universities; namely, those of Edinburgh, Glasgow, Old Aberdeen, New Aberdeen, and St. Andrew's. Each parish has a school, established by law, for teaching the primary branches of education. Hence, the number of learned men is great; and the lower classes are perhaps better informed than those of any other country.*

14. *Religion.*—The established religion is Calvinism, under the Presbyterian form of church government. There is also a considerable number of Dissenters.†

15. *Character.*—The Scotch are in general an industrious,

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* 5. Instruction is obtained, in the parish schools, on very moderate terms; as the masters have free houses and gardens, and small salaries, exclusive of the fees of their pupils. These schools are therefore of the highest value to the country, as they bring education within the reach of all the inhabitants, and thus tend to render them an intelligent, orderly people. Besides the parish schools, there are many seminaries belonging to private individuals, where such appear to be required, or where encouragement is given for establishing them. The universities produce so many men of liberal education, beyond the number required at home, that learned Scotchmen are found in almost every part of the world, filling the situations of clergymen, physicians, teachers, editors, and several others. Of the numerous men of learning and distinction produced in Scotland, it may suffice to mention Buchanan, Napier, the Gregorys, Maclaurin, Dr. Simson, Reid, Smith, Beattie, Dugald Stewart, Smollet, Hume, Robertson, Burns, and Munro.

† 6. In the presbyterian form of church government, the affairs of the church are managed by the clergy at large, among whom there is no difference in rank, and by persons called elders, appointed by the laity from among themselves. There are different courts of lower or higher powers, such as the session or committee of a congregation; a presbytery, composed of ministers and elders from several congregations; a synod, consisting of several presbyteries; and, in Scotland, a supreme court, called the General Assembly, composed of deputies from all the presbyteries in the kingdom. The number of synods in Scotland is 15, which are composed of 78 presbyteries; and the number of parishes is 942. Of the Dissenters in Scotland, those called Seceders are the most numerous body, their ministers amounting to above 300. Another body, called the Synod of Relief, consists of nearly 80 ministers; and the Reformed Synod, vulgarly called Cameronians or Covenanters, is composed of about 20 ministers. These three bodies subscribe the same doctrines as the members of the Established Church, and have the same forms of church government; but dissent principally because the established clergy are appointed by patrons, and not chosen by the people. There are also 6 bishops, and 60 chapels belonging to the episcopal church in Scotland; but the number of people in their communion is small. Besides these bodies, there are Roman Catholics, Independents, and other sects; but their numbers are not considerable.

steady, and prudent people; religious and moral in their habits, and strongly attached to their native country.

16. *Language.*—The Highlanders generally speak the Gælic, a language which is nearly the same as the ancient Irish and Welch; but the majority of them understand English. In the Lowlands, English is universally understood and spoken; but a dialect is used, particularly by the lower ranks, which differs from it in a considerable degree.*

17. *Curiosities.*—Some of the chief natural curiosities are, the basaltic columns and the cave of Fingal, in the island of Staffa; the Fall of Fyers, near Loch Ness; and the Falls of Clyde, near Lanark.† There are many remains of antiquity, such as those of the great Roman wall, built by Antoninus Pius, between the Friths of Clyde and Forth; Roman and Danish camps; and Roman ways.

18. *Inland Navigation.*—The principal canals are the Caledonian Canal, extending from Inverness to Fort William; and the Great Canal, joining the Friths of Forth and Clyde.‡

19. *Representation in Parliament.*—By the act of Union, the peers of Scotland elect, at the commencement of each parliament, 16 of their own number to represent them in the house of lords. In the house of commons, there are 45 members for Scotland; 30 of whom represent the counties, and 15 the royal burghs.§

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* 7. Specimens of this dialect will be found in the writings of Ramsay and Burns, and in Sir Walter Scott's Novels.

† 8. The columns in Staffa resemble those of the Giant's Causeway in Ireland. The Cave of Fingal is one of the most remarkable in the world, and is of great magnitude; being 227 feet long, from 20 to more than 50 feet broad, and from 66 to nearly 100 feet high. Staffa lies about 15 miles west of Mull. At the Fall of Fyers, the water descends at a single bound, through the height of more than 200 feet.

‡ 9. The distance from Fort William to Inverness is 59 miles; and the Caledonian Canal is carried through Loch Lochy, Loch Oich, and Loch Ness, which occupy 37 miles, and leave only 22 miles which required to be cut. The canal will admit a thirty-two gun frigate; its depth being 20 feet, and its width at top 100 feet, and at bottom 50 feet. The rise on the eastern side is 94 feet, and on the western 90 feet. It has for some time been open for vessels, though it is not yet finished. The work has been carried on by parliamentary grants; and the entire cost will exceed a million sterling.

The Great Canal was commenced in 1768, under the inspection of Mr. Smeaton, and finished in 1790. It cost upwards of £200,000, the greater part of which was raised by subscription. Its general depth is 8 feet, and its general width at the surface 56 feet. It has been productive of great advantage to the part of Scotland through which it passes.

Besides these canals, there are the Union Canal, extending from the Great Canal to Edinburgh; the Monkland Canal, which joins the Great Canal near Glasgow; the Ardrossan Canal, which is partly made, and is to extend from Ardrossan to Glasgow; and the Crinan Canal, which is 9 miles in length, and crosses the peninsula of Cantire.

§ 10. The right of voting for members of parliament is confined to a very small number of the people; the thirty county members being elected by 2368 individuals, and the fifteen for the burghs by 1287. The number of the royal burghs is 66, and there is consequently only one member elected for several of them; except in the case of Edinburgh, which elects one for itself. The peers of Scotland are 80 in number.

20. *Historical Sketch.*—The early history of Scotland is very uncertain. Of well-authenticated events, some of the most important are those which took place in the wars with England, in the reigns of Edward I. Edward II. and Edward III.; and in which Bruce and Wallace were peculiarly distinguished. In 1542, Mary, celebrated for her beauty and misfortunes, succeeded to the throne on the death of her father, James V. a few hours after her birth. During her minority, under the regency of her mother, Mary of Guise, the Reformation made much progress in Scotland. She was at length deposed by her subjects; and her son, James VI. while an infant, made king in her stead. After an unsuccessful attempt to recover the throne, she took refuge in England, under the protection of queen Elizabeth, by whom she was kept as a prisoner for nineteen years; and she was at length beheaded in 1587. At the death of Elizabeth, in 1603, James succeeded to the throne of England, in virtue of his descent from Henry VII. Since that time, the two kingdoms have continued under the same sovereign; and the principal events have been the unsuccessful attempts of the Stuart family, in the seventeenth century, to establish episcopacy; the union of the parliaments of England and Scotland, in 1707; and the rebellions in Scotland, in 1715 and 1745, with a view to restore the Stuart family to the throne.

Exercises on the Map of Scotland.

What counties of Scotland have no sea-coast? What are the northern maritime counties? The western? The eastern? What counties border on England? What parts are nearest Ireland? How are the Orkney Isles separated from the mainland? Where do the Friths of Forth and Clyde make the nearest approach?

VIII.—IRELAND.*

1. *Divisions.*—Ireland is divided into the four provinces of Ulster, Leinster, Munster, and Connaught,

Questions on the Notes to Section VII.

1. What are the extreme latitudes and longitudes of Scotland? Its greatest length and breadth? Its content?
4. What is remarkable in respect to Edinburgh? Glasgow? Paisley?
5. What are the nature and effect of the parish schools? Who were some of the most eminent men produced in Scotland?
6. What is the nature of the Presbyterian form of church government? What are the principal bodies of Dissenters in Scotland?
8. What are the dimensions of the Cave of Fingal? What is the height of the Fall of Fyers?
9. What is the length of the Caledonian Canal? Its depth and width? Its cost? What was the cost of the Great Canal?
10. By how many individuals are the county members of parliament elected in Scotland? The burgh members? How many peers are there in Scotland?

* 1. Ireland is situated between the parallels of 51° 23′ and 55° 23′ north, and between 5° 20′ and 10° 20′ west longitude. Its length between the extreme north-

which contain thirty-two counties. These, with their principal towns, are as follows:

ULSTER, NORTH, NINE COUNTIES.

COUNTIES.	CHIEF TOWNS.
Donegal	BALLYSHANNON, Letterkenny, Raphoe *Lifford*
Londonderry	*LONDONDERRY*, Coleraine, Magherafelt Newtonlimavady
Antrim	BELFAST, Lisburn, *Carrickfergus*, Ballymena, Larne, Antrim, Ballycastle
Tyrone	STRABANE, Dungannon, *Omagh*, Newtonstuart
Down	NEWRY, *Downpatrick*, Newtonards, Bangor, Donaghadee, Dromore, Banbridge
Fermanagh	*ENNISKILLEN*
Cavan	*CAVAN*, Cootehill, Belturbet, Kingscourt
Monaghan	*MONAGHAN*, Clones, Carrickmacross, Ballybay
Armagh	*ARMAGH*, Lurgan

LEINSTER, EAST, TWELVE COUNTIES.

Longford	*LONGFORD*, Granard
West Meath	ATHLONE,* *Mullingar*, Kilbeggan, Castlepollard
East Meath	KELLS, *Navan*, *Trim*
Louth	*DROGHEDA*, Dundalk, Ardee, Carlingford
King's County	TULLAMORE, Birr or Parsonstown, Bannagher, *Philipstown*
Queen's County	*PORTARLINGTON*, *Maryborough*, Mountrath, Mountmellick
Kildare	*ATHY*, *Naas*, Kildare, Maynooth
Dublin	DUBLIN, Balbriggan, Skerries, Swords
Wicklow	ARKLOW, *Wicklow*, Bray
Kilkenny	*KILKENNY*, Callan, Thomastown
Carlow	*CARLOW*, Tullow
Wexford	*WEXFORD*, New Ross, Enniscorthy

eastern and south-western points, is about 300 miles; and its breadth from Hoath Head to Urris Head in Mayo, about 170 miles. Its content is about 19,000,000 acres, or upwards of 30,000 square miles.

* 2. Athlone contains about 9000 inhabitants, and rather more than half of it is in county Roscommon. Hence it is also mentioned among the towns of that county.

MUNSTER, SOUTH, SIX COUNTIES.

COUNTIES.	CHIEF TOWNS.
Clare	*Ennis*, Kilrush, Killaloe
Limerick	*Limerick*, Rathkeale, Newcastle
Tipperary . . .	*Clonmell*, Carrick-on-Suire, Roscrea, Tipperary, Nenagh, Thurles, Cashel
Kerry	*Tralee*, Killarney, Dingle
Cork	*Cork*, Bandon, Youghall, Kinsale, Fermoy, Cove, Mallow
Waterford . . .	*Waterford*, Dungarvan, Lismore, Tallow

CONNAUGHT, WEST, FIVE COUNTIES.

Mayo	*Castlebar*, Ballina, Westport, Ballinrobe
Sligo	*Sligo*
Leitrim	*Carrick-on-Shannon*, Manorhamilton
Galway	*Galway*, Loughrea, Tuam, Gort, Ballinasloe
Roscommon . .	Athlone, Boyle, *Roscommon*

2. *Bays and Seaports.*—Carrickfergus, Belfast, Bangor, Donaghadee, Newry, Dundalk, Drogheda, Dublin, Wicklow, Arklow, Wexford, Waterford, Dungarvan, Youghall, Cork, Kinsale, Bantry, Dingle, Limerick, Galway, Sligo, Donegal, Killybegs, Lough Swilly, Londonderry, Coleraine, &c.

3. *Capes.*—Bengore Head, Fair Head, Hoath Head, Wicklow Head, Carnsore Point, Cape Clear, Mizen Head, Kerry Point or Cape Lean, Loop Head, Slyne Head, Achill Head, Urris Head, Malin Head, &c.

4. *Face of the Country, &c.*—The principal mountains are Magillicuddy's Reeks and Mangerton in Kerry, Croagh Patrick in Mayo, the Mourne Mountains in Down, and the Wicklow Mountains. Far the greater part of the country, however, is free from mountains, and fit for cultivation.*

* 3. The highest point in Ireland is the summit of Magillicuddy's Reeks, which is 3610 feet above the level of the sea. The height of Slieve Donard, the highest of the Mourne mountains, is 2954 feet. The heights of Devis and the Cave Hill, in the neighbourhood of Belfast, are 1542 and 1160 feet respectively.

Another feature of Ireland is its extensive bogs, which occupy nearly three millions of acres of its surface. These are principally situated in a belt formed by lines drawn from Wicklow Head to Galway, and from Heath Head to Sligo.

5. *Lakes.*—The principal lakes, or, as they are generally termed in Ireland, *loughs*, are Neagh * and Erne, in Ulster; Allen, Ree, and Derg, on the line of the Shannon; Corrib in Galway; another Lough Derg, near Lough Erne; and the Lakes of Killarney, in Kerry, celebrated for the great beauty of their scenery.

6. *Rivers.*—The principal rivers are the Shannon, which flows into the Atlantic by Limerick; the Barrow, Nore, and Suire, which unite, and fall into Waterford haven; the Bann, which flows through Lough Neagh; the Boyne, which passes Drogheda; the Black Water, which falls into Youghall harbour; the Liffey, which flows through Dublin; the Slaney, which falls into Wexford harbour; the Foyle, which passes Londonderry; the Lagan, which falls into the sea at Belfast; and the Lee, which passes Cork.†

7. *Chief Towns.*—The principal cities and towns are Dublin, Cork, Limerick, Belfast, Waterford, Drogheda, Londonderry, and Galway.‡

8. *Climate and Soil.*—The climate of Ireland is mild, but variable, and is more moist than that of Britain. The soil is in general rich and fertile, and the pastures excellent.§

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* 4. Lough Neagh is the largest lake in the United Kingdom, being about 22 miles long and 12 broad, and having a surface of more than 95,000 acres, or nearly 150 square miles. Petrified wood is often found in this lake, and the adjoining country.

† 5. The Shannon has a course of more than 170 miles, and is larger than any river in Britain. It is navigable for vessels of considerable burden to Limerick, which is upwards of 50 miles from the sea. The Boyne is remarkable for the victory gained on its banks near Drogheda, in 1690, by William III. over James II.

‡ 6. In point of size, Dublin is the second city in the United Kingdom; having a population of 227,335. It is finely situated, and is remarkable for the beauty of its public buildings. Cork has an immense trade in the export of provisions; no fewer, it is supposed, than 100,000 head of cattle being annually slaughtered and salted between the months of August and January. Its population is 100,658. Limerick has a population of 59,045, and its chief trade is in provisions. The population of Belfast, in 1821, was upwards of 37,000; and, if to this the population of the suburb of Ballymacarrett were added, the amount would exceed 40,000. The town has since rapidly increased, and the population at present is probably from 45,000 to 50,000. It has an extensive trade in linen, provisions, American produce, &c.; and is a well-built, flourishing town. Waterford has a population of 28,679, and is much engaged in the provision trade. The population of Kilkenny is 23,230, of Drogheda 18,118, and of Derry 16,971. The amounts of population above stated are according to the census of 1821.

§ 7. The moistness of the climate is thought to arise from the vapour which is carried, by the prevailing westerly winds, from the Atlantic. The rain and dew which are thus produced, prevent the ground from being parched in such a degree as it frequently is in England; and produce those excellent pastures, and that perpetual verdure, for which Ireland is so remarkable.

9. *Produce.*—The principal productions are, vast quantities of cattle, butter, and pork. Much grain and potatoes are also produced; and, by better cultivation, the quantity might be greatly increased. Iron is found in many districts; also marble and limestone.*

10. *Population.*—By the census of 1821, the population was nearly seven millions.†

11. *Manufactures and Commerce.*—The principal and most valuable manufacture of Ireland is linen, the chief seat of which is in the north. Considerable quantities of cotton are manufactured, particularly about Belfast; and beautiful silk goods are manufactured in Dublin. These articles, with provisions of various kinds, form the principal exports; and most of the direct commerce of the country is with Great Britain and America.

12. *Colleges, Learning, &c.*—The only university in Ireland is Trinity College, Dublin; but there are colleges in Maynooth, Belfast, and Carlow. Education has been greatly neglected, particularly among the lower classes; it is now beginning, however, to be much more attended to.‡

13. *Religion.*—The established religion in Ireland is the same as in England, and the churches of the two countries are united. In Ireland there are four archbishops, those of Armagh, Dublin, Cashel, and Tuam; and eighteen bishops. The great majority of the people, however, are Roman Catholics; and there are many others who are not connected with the Established Church, particularly Presbyterians.§

14. *Character, &c.*—The lower Irish are considered a lively, shrewd people, and warm in their attachments and antipathies.

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* 8. Gold has been found, in considerable quantities, in county Wicklow; silver in Antrim, Tipperary, and Sligo; and copper in Cork, Kerry, and Wicklow. Coal has been found in several places; but not in such quantity or kind, as yet, as to be of much advantage to the country at large. Marble is found principally in Kilkenny and Galway.

† 9. According to the returns, 6,846,949.

‡ 10. Trinity College, founded in the reign of Elizabeth, is the most flourishing and extensive seminary in Ireland. Maynooth is supported by a parliamentary grant; and has for its object the education of clergymen for the Roman Catholic church. Carlow has the same object. The Institution of Belfast was established by public subscription; and affords extensive courses of lectures, with corresponding examinations, on Latin, Greek, Hebrew, Logic and Belles Lettres, Moral Philosophy and Metaphysics, Mathematics, Natural Philosophy, Theology, Anatomy, and other subjects. This seminary is open to persons of all religious denominations, and is adopted in particular by the Presbyterians of Ireland as a place of education for their clergy. It has also a series of schools for the primary branches of education, and for languages, ancient and modern. It was opened for teaching in 1814. Its College department is supported by a grant from parliament.

Notwithstanding the disadvantages under which the inhabitants of Ireland have long laboured, in respect to education, and to opportunities for calling their abilities into exertion, many of them have attained high distinction for talents and learning. Of these it may be sufficient to mention Usher, Boyle, Ware, Farquhar, Swift, Steele, Hutcheson, Berkeley, Goldsmith, Burke, Sheridan, Curran, and Grattan.

§ 11. The Presbyterians are chiefly seated in Ulster; and most of them are descended from Scotch settlers, who emigrated to Ireland in the reigns of James I. Charles I and Charles II. They are divided into different parties, as in Scotland.

In many instances, however, they commit acts of turbulence and cruelty, arising from bad education and habits. These, it is to be hoped, will gradually yield to the active means, now employed by different parties, for the improvement of the population.*

15. *Curiosities.*—The most remarkable natural curiosity is the Giant's Causeway, at the northern extremity of county Antrim. Curious round towers, of great antiquity, are found in many parts of the kingdom, the uses of which are unknown.

16. *Inland Navigation.*—The principal canals are the Royal and Grand Canals, from Dublin to the Shannon; and the canals from Lough Neagh to Belfast and Newry.

17. *Representation in Parliament.*—By the act of Union, the temporal peers of Ireland† elect 28 of their own number for life, to represent them in the house of lords; in which also one of the archbishops, and three of the bishops, have seats by annual rotation. In the house of commons, there are 100 Irish members; two for each of the thirty-two counties, two for the city of Dublin, one for Trinity College, two for the city of Cork, and one for each of thirty-one cities and boroughs.

18. *Historical Sketch.*—In the reign of Henry II. Ireland was annexed to the English crown. James I. introduced colonies from England and Scotland, caused justice to be regularly administered, and promoted civilization and general improvement. In 1641, in the reign of Charles I. Ireland, as well as England, was involved in a civil war, which was terminated by Cromwell. At the Revolution in 1688, the Catholics supported James II. in opposition to his successor, William III.: the latter, however, was finally successful. In 1782 the British parliament surrendered their claim to controul or modify the decisions of the parliament of Ireland. In 1798 there was a rebellion, which was soon suppressed; and, at the beginning of the present century, the Union of Great Britain and Ireland took place, from which time Ireland has ceased to have a separate legislature. In 1829, the Roman Catholics of the United Kingdom were relieved from the disabilities to which they had been previously subject on account of their religion.

Their numbers are supposed to be about equal to those of the established church, and the number of their congregations is between three and four hundred.

The bishoprics in the established church are as follows: Under the archbishop of Armagh, the primate of the kingdom, (1) Meath, (2) Clogher, (3) Down and Connor, (4) Derry, (5) Raphoe, (6) Kilmore and Ardagh, (7) Dromore and Clonmacnoise; under the archbishop of Dublin, (1) Kildare, (2) Leighlin and Ferns, (3) Ossory; under the archbishop of Cashel, (1) Limerick, Ardfert, and Aghadoe, (2) Waterford and Lismore, (3) Cork and Ross, (4) Cloyne, (5) Killaloe and Kilfenora: and under the archbishop of Tuam, (1) Elphin, (2) Clonfert and Kilmacduagh, (3) Killala and Achonry. The Roman Catholics have, in their church, about the same number of dignitaries, under the same titles.

* 12. The ancient Irish language, which is considered the best preserved dialect of the Celtic, is very generally spoken by the Roman Catholics, who are descended from the original inhabitants of the country; and many of whom, in the remoter districts, are unacquainted with English.

† 13. The temporal peers of Ireland are nearly 220 in number.

Exercises on the Map of Ireland.

What are the northern counties of Ireland? The southern? The eastern? The western? What are the inland counties? What are the distances, by the scale of the map, from Athlone to Dublin, Belfast, Cork, and Sligo? From Limerick to Cork and Londonderry? Through what places does the shortest route from the Giant's Causeway to Killarney pass? What are the latitudes and longitudes of Belfast, Dublin, Limerick, Cork, and Waterford?

IX.—FRANCE.

1. *Boundaries.*—France is bounded on the south by the Mediterranean and the Pyrenees; on the west, by the Bay of Biscay; on the north-west, by the English Channel; on the north-east, by the Netherlands; and on the east, by Germany, Switzerland, and Italy.*

2. *Divisions.*—France was formerly divided into large parts, called *provinces;* but in 1790 it was divided into smaller portions, named *departments.*† These divisions are as follows:

Questions on the Notes to Section VIII.

1. What are the extreme latitudes and longitudes of Ireland? Its length and breadth? Its content?
3. What are the heights of some of the principal Irish mountains? What is the situation of the principal bogs of Ireland? What is their extent?
4. What are the dimensions of Lough Neagh?
6. What are the populations of the principal towns in Ireland? For what is Dublin remarkable? What constitutes the chief trade of Cork? What cattle are slaughtered in it? What trade has Belfast?
8. Where have minerals been found in Ireland?
10. What is the principal seminary in Ireland? What is the object of Maynooth College? What is taught in the Belfast Institution? Who were some of the most distinguished men produced in Ireland?
11. Where are the Presbyterians chiefly seated? What is their origin? The number of their congregations?
13. What is the number of the Irish temporal peers?

* 1. The inland boundary of France, except where it is formed by the Pyrenees, has been subject to great variations, according to the fortune of war. At present, it commences seven or eight miles east of Dunkirk, and passes between Lille and Tournay, and between Valenciennes and Mons. It then crosses the Meuse, a little north of Givet; and, turning first southward and then eastward, it passes a little north of Sedan, crosses the Moselle at Sierck, and reaches the Rhine about the forty-ninth degree of latitude. The boundary then coincides with the Rhine as far as the vicinity of Basil; after which it passes south-westerly, between lake Neufchatel and Mount Jura, and a little west of Geneva; then, following the course of the Rhone for about 50 miles, and crossing the Isere, it reaches the Mediterranean at the mouth of the Var.

France is situated between the parallels of 42° 22′ and 51° 2′ north, and between 4° 49′ west, and 8° 15′ east longitude; and its length and breadth are each nearly 600 miles. Its surface is supposed to be about 200,000 square miles.

† 2. The departments are named chiefly from rivers and mountains. It is proper to retain the ancient divisions, from the frequent references to them, particularly in history.

PROVINCES.	DEPARTMENTS.	CHIEF TOWNS.
Bretagne, or Brittany	Ille and Villaine	Rennes
	North Coast	St. Brieux
	Morbihan	Vannes
	Finisterre	Quimper
	Lower Loire	NANTES
Normandy	Lower Seine	ROUEN
	Calvados	Caen
	The Channel	Coutances
	Orne	Alençon
	Eure	Evreux
Picardy	Somme	Amiens
French Flanders	North	LILLE, Douay
Artois	Strait of Calais	Arras
Anjou	Mayenne & Loire	Angers
Maine	Sarthe	Le Mans
	Mayenne	Laval
Isle of France	Seine	PARIS
	Seine and Oise	VERSAILLES
	Oise	Beauvais
	Aisne	Laon
	Seine and Marne	Melun
Aunis, and part of Saintonge	Lower Charente	Saintes
Poitou	Vendée	Fontenay le Comte
	Two Sevres	Niort
	Vienne	Poitiers
Touraine	Indre and Loir	Tours
Orleanois	Loiret	Orleans
	Eure and Loir	Chartres
	Loire and Cher	Blois
Champagne	Marne	Châlons, Rheims
	Ardennes	Mézière
	Aube	Troyes
	Upper Marne	Chaumont
Lorraine	Meuse	Bar sur Ornain
	Moselle	Metz
	Meurthe	Nancy
	Vosges	Epinal

PROVINCES.	DEPARTMENTS.	CHIEF TOWNS.
Alsace	Upper Rhine	Colmar
	Lower Rhine	Strasbourg
Rest of Saintonge, with Angoumois	Charente	Angouleme
Marche	Upper Vienne	Limoges
	Creuse	Gueret
Berry	Indre	Chateauroux
	Cher	Bourges
Nivernois	Nièvre	Nevers
Bourgogne, or Burgundy	Yonne	Auxerre
	Côte d'Or	Dijon
	Saône and Loire	Macon
	Ain	Bourg
Franche Compté	Upper Saône	Vesoul
	Doubs	Besançon
	Jura	Lons le Saunier
Limousin	Correze	Tulle
Bourbonnois	Allier	Moulins
Auvergne	Puy de Dôme	Clermont
	Cantal	St. Flour
Lyonnois	Rhône	Lyons or Lyon
	Loire	Monbrison
Guienne and Gascogne or Gascony	Dordogne	Perigueux
	Gironde	Bordeaux
	Lot and Garonne	Agen
	Lot	Cahors
	Aveiron	Rhodez
	Gers	Auch
	Landes	Mont de Marsan
	Upper Pyrénées	Tarbe
County of Foix	Arriege	Tarascon, Foix
Béarn	Lower Pyrénées	Pau, Bayonne
Languedoc	Upper Garonne	Toulouse
	Aude	Carcassone
	Tarn	Alby, Castres
	Gard	Nismes
	Lozere	Mende
	Ardéche	Privas
	Upper Loire	Le Puy
	Herault	Montpellier

PROVINCES.	DEPARTMENTS.	CHIEF TOWNS.
Dauphiné	Upper Alps	Gap
	Drôme	Valence
	Isére	Grenoble
Rousillon	East Pyrénées	Perpignan
County of Venaissin	Vaucluse	Avignon
Provence	Mouths of the Rhone	Aix, MARSEILLES
	Lower Alps	Digne
	Var	TOULON

3. *Islands.*—The principal islands belonging to France, are Ouessant or Ushant, Belleisle, Noirmoutier, Re, and Oleron, off the western coast; and the d'Hieres, near Toulon.

4. *Seaports.*—Dunkirk, Calais, Boulogne, Dieppe, Havre de Grace, Cherbourg, St. Malo, on the English Channel; Brest, on the Atlantic; L'Orient, Quiberon, Nantes, Rochelle, Rochefort, Bordeaux, Bayonne, on the Bay of Biscay; and Marseille, Toulon, Frejus, on the Mediterranean.

5. *Mountains.*—France is in general a level country, particularly the northern and western parts. The chief mountains, besides the Alps and Pyrenees, are the Cevennes, west of the Rhone; the Vosges, near the Rhine; and Mount Jura, near Switzerland.*

6. *Rivers.*—The rivers are, the Loire, which flows through the middle, and the Garonne through the south of France, into the Bay of Biscay; the Rhone, a rapid river, which flows through the Lake of Geneva, and then southward into the Mediterranean; the Seine, which flows north-westerly by Paris, and falls into the English Channel; the Somme, which

* 3. The top of Mont Perdu, one of the highest of the Pyrenees, is upwards of 11,000 feet above the level of the sea. The highest summits of these mountains are covered with perpetual snow; and seashells have been found near their tops. The Pyrenees have glaciers and avalanches, or lavanges, like those of the Alps, which will be mentioned hereafter. The length of the chain of the Pyrenees is 212 miles. The highest of the Cevennes is little more than 6000 feet high; and none of the summits of Jura, or the Vosges, have so great a height. About one eighth of the surface of France is covered with forests.

falls into the same sea, north-east of the Seine; and many others.*

7. *Canals.*—The principal canals [illegible], that of Languedoc, which opens a passage from the Mediterranean to the Atlantic; that of Burgundy, which joins the Loire and the Saone; and those of Briare and Orleans, which unite the Loire and Seine.†

8. *Towns.*—The principal cities and towns are PARIS, Lyons, Marseille, Bordeaux, Toulon, Rouen, Toulouse, Nantes, Lille or Lisle, and Versailles.‡

9. *Colonies.*—The French had formerly extensive colonies in different parts of the world; but most of them were lost in wars with England. They have now Corsica, a few islands in the West Indies, and part of Guiana.

10. *Climate and Soil.*—The climate of much of France, especially the middle and south, is considered fine, and very favourable to health. The heat in summer, however, and the cold in winter, are in most places greater than in the British islands.

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* 4. The Garonne and Dordogne unite near Bordeaux; and, from thence to the sea, their united stream is called the Gironde. The Loire receives in its course the Sarthe, Loir, one of the Sevres, the Creuse, Indre, Cher, and Allier. The Garonne receives the Gers, Lot, and Tarn; the Rhone is increased by the Saône, Isere, Drome, Ain, Ardeche, and Durance; and the Seine receives the Oise, Eure, and Yonne. The valleys, which are watered by some of the French rivers, particularly the Loire, Seine, and Rhone, are extremely rich and beautiful. France has no lakes of importance.

† 5. The canal of Languedoc, one of the great works of the reign of Louis XIV. is 150 miles long, 6 feet deep, and 60 broad. It was finished in 1681; and had employed 12,000 men, for fifteen years, in its construction. It cost £1,200,000; and the annual expense of keeping it in repair is £12,000.

‡ 6. The population of none of these is under 50,000. That of Paris was 715,000 in 1817, and is now perhaps 800,000. Before the Revolution, Lyons contained 150,000 inhabitants, a number which was reduced to 75,000 by the ruin to which the city was then subjected. It has, however, been fast recovering, and in 1820 it contained 120,000 inhabitants. The population of Bordeaux nearly equals, and that of Marseille exceeds 100,000. Paris is remarkable for the beauty and splendour of its public buildings, several of which exceed the finest in London. Some of the principal are the palaces of the Tuileries, and Luxembourg; the Louvre, which is used as a repository for objects of taste and art; and the church of Notre Dame. The houses in Paris are built of freestone, taken from beneath the city. The subterranean excavations, thus formed, are used as catacombs, or repositories for the dead. Several of the streets are magnificent; but, in general, they are not furnished with sidepaths for foot-passengers.

Other considerable towns are Rouen, Nantes, Strasbourg, and Orleans. The last of these is a very ancient town; deriving its name from the Roman emperor Aurelian, by whom it was founded, or rather restored. The steeple of the cathedral of Strasbourg rises to the great height of 574 feet. The clock of this cathedral is extremely curious, showing the motions of the earth and planets, and the increase and decrease of the moon: the day of the month is pointed out by a statue; each hour is announced by a golden cock, and struck on the bell by one angel, while another turns an hour-glass as soon as the clock has finished striking: the quarters are also struck, the first by a child with an apple, the second by a youth with an arrow, the third by a man with a tip-staff, and the fourth by an old man with a cane.

Many parts are fertile; but, in general, the system of agriculture is not good.*

11. *Produce, Animals, and Minerals.*—Different kinds of grain, and excellent wines, are some of the most important productions of the country. Besides horses, black cattle, and sheep, there are wolves, bears, wild boars, and serpents of various kinds. France is rich in minerals, particularly lead, coal, and iron.

12. *Population, Army, and Navy.*—The population is supposed to be nearly 30 millions, and the standing army is about 150,000. The navy, compared with that of Britain, is inconsiderable.†

13. *Government.*—At the restoration of the Bourbon family, in 1814, a new system of government was established, which nearly resembles the government of Britain, in its general outline and character.‡

14. *Manufactures and Commerce.*—The chief manufactures of France are woollens, silks, linens, laces, hardware, cotton goods, and porcelain. During the Revolution, the commerce of France, which was formerly very extensive, was nearly annihilated; but it is now beginning to recover.

15. *Learning, &c.*—France has produced many men of great talents and learning. The instruction of the peasantry, which was never well attended to, was almost entirely neglected during

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* 7. In the western parts, near the Bay of Biscay, the climate is very moist. In the department of Finisterre, there is nearly a constant mist; and at Brest and Morlaix, it rains almost incessantly. In all the countries south of the Loire, there are often most destructive storms of hail and rain. These, it is computed, annually damage a tenth part of the produce of the south of France; and a single storm of this kind has been known to sweep across an entire zone of the kingdom, and to do injury to the amount of some millions. In France the harvest usually begins, in the north, about the 20th or 25th of July; and in the south, about the end of June.

† 8. In 1794, during the revolutionary war, the French army consisted of 1,400,000 men; and in 1812, in the zenith of Napoleon's power, there was a standing army of 1,200,000;—amounts, perhaps, unequalled in ancient or modern times. At the period of the Revolution, the French fleet consisted of 73 men of war and 67 frigates, besides smaller vessels; and many millions were expended on it during the war. It was nearly annihilated, however, by Britain; the loss, from the commencement of the war till the peace of Paris in 1814, having been 97 men of war, 219 frigates, and many other vessels.

‡ 9. There are, as in Britain, two houses of legislature; the chamber of peers, and the chamber of deputies; the former corresponding to the house of lords, and the latter to the house of commons. No law can be made without the concurrence of the king and both houses. The king proposes the law; but the houses have the privilege of entreating the king to propose it, and to suggest to him the points which they think it should contain. If both houses agree, the proposition is laid before the king. He may reject it, however; and in that case it cannot be again proposed during the same session.

The peers are appointed by the king, either for life, or their dignity is made hereditary, and their number is unlimited. They have a deliberative voice at the age of thirty. The princes of the blood are peers by birth; but have seats in the chamber, only in virtue of an order from the king, each session. No deputy is admitted under forty, nor unless he pay direct taxes to the amount of 1000 livres; and no person under thirty can vote for deputies, nor unless he pay 300 livres in direct taxes. The deliberations of the peers are secret; those of the deputies public: the latter, however, may render theirs private, on the demand of five members. Judges in the courts of law are appointed by the king; and he can pardon offences, and commute punishments. Trials are conducted by juries.

the revolutionary wars; and, in consequence of this, nearly two thirds of the population can neither read nor write. During the ascendancy of Napoleon, the mathematical sciences were cultivated with the utmost care, and with extraordinary success.*

16. *Religion.*—The religion of the state is by law the Roman Catholic, and the great majority of the people are of that religion; but, according to the constitution agreed to by Louis XVIII. at his restoration, other sects are tolerated, and all Frenchmen are equally admissible to civil and military employments.†

17. *Character, &c.*—The French are in general sprightly, and fond of amusement; ingenious and polite; and strongly influenced by a love of distinction and glory.‡

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* 10. Before the Revolution, there were 30 universities in France; one of the principal of which, particularly in theology, was the Sorbonne, in Paris. These were overturned at the Revolution; and, after some time, a new system of education was planned, and partly carried into effect. This system was admirably fitted for the promotion of science, particularly in its application to engineering, and every thing connected with military tactics; but was little calculated for the advancement of general literature. At present there are 26 universities, or, as they are called, academies. There are also 36 *lycées*, or royal colleges; 6 *facultés*, and 41 schools of theology; and, of late, many schools have been established on the systems of Lancaster and Bell. Of the distinguished men produced in France, may be mentioned Calvin, Sully, Des Cartes, Pascal, Massillon, Fenelon, Poussin, Voltaire, and Laplace; also, Corneille, Racine, Moliere, Bossuet, Bourdaloue, Saurin, Fermat, Clairault, D'Alembert, Rollin, Buffon, and many others.

† 11. Since the period of the Reformation, France has always contained a considerable number of Protestants. These have, at different times, suffered severe persecutions. At the massacre of St. Bartholomew's day, on the 24th of April, 1572, ninety thousand Protestants were sacrificed in France, in the most insidious and cruel manner. After various struggles, the famous Edict of Nantes was passed, in 1598, by Henry IV. in favour of the Protestants, which secured to them liberty of conscience and civil rights. After many infringements of this edict, it was formally revoked, in 1685, by Louis XIV. This event gave rise to an active and severe persecution, in which great numbers lost their lives; and above 500,000 of the most industrious and valuable inhabitants were driven into exile, to the lasting injury of France, and to the great advantage of Britain and other countries in which they settled, and where they introduced and established several manufactures before unknown. Since that time the Protestants have been often exposed to severe treatment; but they are now, in principle, tolerated and protected under the new constitution. Their present number is about two millions.

The number of Catholic archbishops is 18, and of bishops 74. Since the Revolution, these have no voice or seat in the house of peers. The nomination of all clergymen, whether Catholic or Protestant, belongs to the crown.

Soon after the commencement of the Revolution, amid the frenzy and impiety of the time, the Christian religion was formally abolished in France, and all the revenue and property of the church were seized by government. The priests were subjected to a severe persecution; in which, between 1792 and 1795, nearly 3000 were put to death, and about 30,000 were obliged to save themselves by flight. These proceedings were followed up by the consecration of *Reason*, as an object of worship; and a festival in honour of her was celebrated in the cathedral of Paris. For some years, one impiety succeeded another; till Bonaparte, in 1800, re-established the Roman Catholic religion, with toleration for others; and in that state, matters continue to be at present.

‡ 12. The religious and moral feelings and principles of the people were greatly affected by the irreligion and general laxity of the Revolutionary times; and the effects, thus produced, may be expected to be long felt, particularly on a people naturally and habitually lively. Even the sanguinary scenes of the Revolution were unable to check the universal love of amusement. At that time, 24 theatres were

18. *Curiosities, &c.*—In Foix there is a natural cavern capable of containing 2000 men. The cascade of Gavarnée, in the Pyrenees, is said to be 1266 feet in height. The fountain of Vaucluse, celebrated by Petrarch, presents, in its ordinary state, a great many little streams issuing from the bottom of a rock 600 feet high; but, in spring, it becomes a vast cascade, from the melting of the snows.

19. *Historical Sketch.*—France was subdued, about 60 years before Christ, by the Romans under Julius Cæsar, and long continued to be a province of the empire. In 481 Clovis laid the foundation of the French monarchy, and in 496 introduced Christianity. In 768 Charles, son of Pepin, became king; and, from his success in war, was called Charlemagne, or Charles the Great. He greatly extended his dominions, and founded the German empire, which was soon separated from France. In 987 Hugh Capet supplanted the reigning family, and made himself king. Among the succeeding events in French history, may be mentioned the wars with Edward III. and Henry V. of England, which were so disastrous to France, that, in the former war, John, the French monarch, was made prisoner; and, in the latter, on the death of Henry V. his son Henry VI. was crowned king of France. The English, however, soon lost all they had acquired, and Charles VII. recovered the throne of his ancestors. The reign of Henry IV. of Bourbon, called Henry the Great, commenced in 1597, and contributed much to the prosperity of the kingdom. He was assassinated in 1608. Louis XIV. began to reign in 1643, at the age of five years, and died in 1715. In his reign, France made great advances in literature and science, and assumed a high rank among the nations of Europe. In 1789, the ancient government was overturned by one of the most remarkable revolutions on record. The king, Louis XVI. was beheaded in 1793, and a republic established, which in its turn was subverted; and Napoleon Bonaparte, a Corsican, became the supreme ruler of the nation, under the title of First Consul, in 1799; and then of Emperor, in 1804. At length, the ancient royal line was restored in 1814, in the person of Louis XVIII. when Bonaparte was obliged to abdicate the throne, and retire to the island of Elba. Having escaped from this retreat in 1815, he made an unsuccessful attempt to recover his former power; and, after the famous

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open in Paris every night, and were numerously attended; and persons of every time of life, from childhood to old age, spent a great part of their leisure hours, particularly on Sunday, in dancing. To these scenes of pleasure, which were allowed to usurp such a portion of valuable time, in so unprofitable a manner, and more especially on that day which should be sacred to better objects, may be added gaming, and various kinds of debauchery, which prevailed in Paris to a degree, not equalled, perhaps, in any other place. Such, however, were the spirit and habits of the people, that one of the most unpopular acts of Louis XVIII. before the return of Bonaparte from Elba, was an attempt to cause the shops to be closed on Sundays and holidays, and to make the days be observed with external decency.

battle of Waterloo, he surrendered to the prince regent of England, and was sent a prisoner to St. Helena, where he died in 1821.

Exercises on the Map of France.

What parts of France lie east of the Rhone? Measure the distances from Paris to Calais, Dieppe, Rheims, and Dijon. What are the latitudes and longitudes of Paris, Lyons, and Marseille? What proportion of the boundary of France is seacoast? What parts of France are on the parallel of 45°? What on the meridian of Greenwich?

X.—SPAIN.

1. *Boundaries.*—Spain is bounded on the north by the Bay of Biscay, and the Pyrenees; on the east, by the Mediterranean; on the south, by the Mediterranean, the Strait of Gibraltar, and the Atlantic; and on the west, by the Atlantic and Portugal.*

2. *Divisions.*—Spain is divided into 14 provinces;

Questions on the Notes to Section IX.

1. What are the extreme latitudes and longitudes of France? Its length and breadth? Its content?
3. What is the height of Mont Perdu? What has been found near the tops of the Pyrenees? What proportion of France is covered with forests?
5. What are the dimensions of the Canal of Languedoc? When was it finished? How many men were employed in its construction, and how long? What did it cost? What is the expense of keeping it in repair?
6. How many towns in France have 50,000 inhabitants or upwards? What is the population of Paris? For what is Paris remarkable? What is the population of Lyons? How high is the steeple of the cathedral of Strasbourg? Describe the clock in that cathedral.
8. What were the amounts of the French army in 1794 and 1812? Of what did the French fleet consist at the Revolution? What was the amount of its losses in the late war?
9. How are laws proposed in France? How are peers appointed? What are the qualifications necessary to entitle a person to be a deputy? What are the qualifications of voters for deputies?
10. How many universities were in France before the Revolution? How many are there now? What was the character of the system of education established after the Revolution? Who were some of the most distinguished men that have been produced in France?
11. Give a sketch of the history of the French Protestants. Have the French bishops and archbishops seats in the house of peers? By whom are the clergy nominated? What was done respecting the Christian religion in France after the Revolution? How were the priests treated? What was done in respect to *Reason*? How were matters finally settled by Bonaparte?
12. What effect was produced on the moral and religious principles of the people by the Revolution? In what amusements were the people very generally employed at that time?

* 1. Spain lies between the parallels of 35° 57′ and 43° 44′ north; and between 3° 8′ east, and 9° 18′ west longitude. Its length, from Cape Creux to Cape Ortegal, is about 640 miles; its breadth, from the Strait of Gibraltar to Cape de Penas, about 530 miles; and it contains a surface of nearly 230,000 square miles.

which, with some of their principal subdivisions, are as follows:

FOUR NORTH.

PROVINCES.	SUBDIVISIONS.	CHIEF TOWNS.
Galicia		Santiago, Lugo
Asturias	Oviedo	Oviedo
	Santillana	Santillana
Biscay	Guipuzcoa	Tolosa, St. Sebastian
	Biscay Proper	Bilboa
	Alava	Vittoria
Navarra		Pampeluna, Tudela

FOUR EAST.

Arragon		Saragossa, Huesca
Catalonia		Barcelona, Tarragona, Tortosa
Valencia		Valencia, Alicant
Murcia		Murcia, Cartagena

TWO SOUTH.

Granada		Granada, Malaga
Andalusia	Seville	Seville, Cadiz, Gibraltar
	Cordova	Cordova
	Jaen	Jaen

FOUR MIDLAND.

Leon	Salamanca	Salamanca, Ciudad Rodrigo
	Zamora	Zamora
	Palencia	Palencia
	Toro	Toro
Old Castile	Burgos	Burgos
	Segovia	Segovia
	Soria	Soria
	Valladolid	Valladolid, Tordesillas
	Avila	Avila
New Castile	Madrid	MADRID, Escurial
	Toledo	Toledo
	Cuença	Cuença
	La Mancha	Ciudad Real
	Guadalaxara	Guadalaxara
	Molina	Molina
Estremadura		Badajos, Alcantara

3. *Islands.*—Majorca, Minorca, Iviza or Iviça, and Fromentera, in the Mediterranean.*

4. *Seaports and Bays.*—Passages, Bilboa, Santander, Ferrol, Corunna (called by English seamen, the Groyn), Vigo, Cadiz, Gibraltar, Malaga, Almeria, Cartagena, Alicant, Valencia, Murviedro,† Tortosa, Tarragona, Barcelona, Mataro.

5. *Capes.*—Ortegal, Finisterre, Trafalgar, De Gata, De Palo, St. Sebastian.

6. *Mountains, &c.*—The principal mountains of the peninsula of Spain and Portugal, are the Santillanos, or Sierra of Biscay and Asturias, a continuation of the Pyrenees; the Sierra de Estrella, and its continuation, the Castilian Mountains; the Sierra de Toledo; the Sierra Morena; and the Sierra Nevada.‡

7. *Rivers.*—The Tajo or Tagus, Duero, Guadiana, Guadalquivir, Minho, and Ebro.§

8. *Chief Towns.*—Madrid, Barcelona, Seville, Valencia, Granada, Cadiz, Saragossa, Salamanca, and Gibraltar.‖

9. *Colonies.*—The principal remains of the former

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* 2. These are often called the Balearic Isles. The principal towns are, in Majorca, Palma; in Minorca, Ciudadella and Port Mahon; and the chief town of Iviza is of the same name. The city of Cadiz is also in an island called Leon.

† 3. Murviedro is built on the site of the ancient Saguntum.

‡ 4. In the Spanish language, the term *sierra* is used to denote a chain of mountains; because their successive summits present to the eye, at a distance, the appearance of a saw, the name for which, in Spanish, is *sierra*. The mountains of the peninsula consist chiefly of such chains, disposed in nearly parallel directions, and extending from east to west, with a slight inclination to the south-west. Some peaks of the Sierra Nevada, or Snowy Mountains, are higher than any mountains in Europe, except the Alps. Veneta and Mulhacen, in particular, are each nearly 12,000 feet high.

§ 5. The Ebro flows south-easterly into the Mediterranean, through the north-east of Spain. The other principal rivers of the peninsula flow in a westerly or south-westerly direction, through the spaces between the chains of mountains, and discharge themselves into the Atlantic. Spain and Portugal have no lakes that merit particular notice.

‖ 6. The population of these towns is supposed to be as follows: Madrid, 200,000; Barcelona, 100,000; Seville, Valencia, and Granada, 60,000 each; Cadiz, 70,000; Saragossa, 50,000; Salamanca, 24,000; Gibraltar, 12,000, exclusive of the garrison.

Madrid, the capital, is a handsome city, with regular streets and many magnificent buildings; and, from its elevated situation, it enjoys pure air.

Gibraltar, one of the strongest fortresses in the world, has belonged to Britain since 1704. Since that time, it has been repeatedly besieged, but never taken. The last siege commenced in 1779, and ended in 1783; and is one of the most remarkable that has ever taken place, both for the magnitude and vigour of the means employed by the Spaniards, for reducing the town; and the courage and ingenuity displayed by the British, in its defence.

vast foreign possessions of Spain, are Cuba and Porto Rico, in the West Indies; the Canary Isles; and some settlements in the Philippine Islands.

10. *Climate, Soil, and Produce.*—Spain is a warm country; and the soil, in many places, is rich and fertile, producing excellent wheat, barley, and other kinds of grain; besides good fruit, oil, and wine.*

11. *Animals and Minerals.*—Spain is remarkable for its excellent breeds of horses and sheep: and it contains various mines of gold and silver; and of copper, lead, and tin.†

12. *Population.*—The population of Spain is very small, compared with the size and fertility of the country, being only eleven or twelve millions.‡

13. *Army and Navy.*—The army, in the time of peace, amounts to about 60,000. The navy was formerly considerable; but it suffered severely during the late war, and is now small.

14. *Government.*—Before the late war, Spain was an absolute monarchy. Since that time, it has undergone great changes; and it cannot be regarded as settled at present.

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* 7. Spain is not so warm as Italy, and some other countries in the same latitudes. This is occasioned, on the coasts, by the influence of the sea; and, in the interior, by the elevation of the country. The Castiles, in particular, consist of a plateau, or elevated plain; the ordinary height of which, above the level of the sea, is nearly 2000 feet. In the south, however, for three months of the summer, the heat is very oppressive, and produces contagious distempers. Of the fruits may be mentioned oranges, lemons, citrons, almonds, raisins, dates, and pomegranates.

† 8. Some of the sheep remain constantly in the same place, and are housed during the winter: these have coarse wool. Others set out in the beginning of autumn, from the cool northern districts near the Bay of Biscay; and, by the middle of winter, have reached the warm southern plains of Andalusia and Estremadura. After remaining there for some time, they return homeward in spring; and thus, at all times, enjoy a mild and nearly uniform temperature. These sheep, which are very small, live always in the open air; and their wool is celebrated for its fineness. It is supposed, that, in the sixteenth century, upwards of seven millions of sheep went on this annual migration; but, since that time, the number has diminished to four or five millions. They constitute, collectively, what is called the *mesta*; and are composed of flocks of 10,000 each, belonging to the nobility, and other persons of power and influence, and to rich monasteries. The flock is subdivided into ten tribes; and each tribe is under the care of five shepherds and five dogs. The entire flock is under the superintendence of one man; and there is a regular tribunal for managing the affairs of the mesta. The system has been long felt to be highly oppressive by those who live in the line of movement, though a trifling compensation is paid to them by the proprietors of the sheep. The power of the nobles and other proprietors, however, have thus far prevented the abolition of the system.

In ancient times, Spain was celebrated for its gold and silver mines, and supplied a great part of what was in use; but, since the discovery of America, they have been neglected, in consequence of the great facility with which the precious metals are procured there.

‡ 9. The scantiness of the population is supposed to arise from different causes: from contagious fevers, in the southern parts; from the frequency of intestine wars; from emigration to America; from the effect of the mesta, in causing so much of the land to be employed in pasturage; from the great number of unmarried ecclesiastics; and from the expulsion of the Jews and Moors. In the time of the Romans, the population is said to have been forty or fifty millions. This statement is probably exaggerated; yet, from the great armies furnished by Spain in the Punic wars, the inhabitants must have been very numerous. In 1786, the number of the clergy, monks, and nuns, was stated to be 188,035, or one out of every fifty-four of the entire population.

15. *Agriculture, Manufactures, and Commerce.*—The agriculture and manufactures of Spain, though the country possesses great natural advantages for both, are far from being in a prosperous state; and its commerce is very limited.

16. *Literature, &c.*—Spain has 24 universities; and yet literature, science, and the arts, are in a very low state in the country.*

17. *Religion.*—The established, and only tolerated religion in Spain, is the Roman Catholic.†

18. *Character, &c.*—The Spaniards are represented as being in general proud and indolent, slow in their movements, solemn in their appearance, and moderate in eating and drinking. They are excessively fond of bull-fights, which, however, the government has latterly discountenanced.‡

19. *Historical Sketch.*—Spain was conquered by the Carthaginians, and taken from them by the Romans. The latter held it till the decline of the Roman empire, when it was seized by the Vandals and other tribes, and divided into several kingdoms. These were all united into one in 584, by Leovigild, a leader of the Visigoths, who made himself king. This monarchy continued till 713, when Spain was invaded by the Saracens of Barbary; and it was soon all reduced under their power, except some of the northern districts. The inhabitants of these parts continued long, with various fortune, to make war against the Saracens, or, as they were generally called, the Moors; and formed some kingdoms, the boundaries of which, by subsequent success, were gradually enlarged. The Moors were finally conquered in 1492, under Ferdinand and Isabella, who, by their marriage, and by the success of their arms, united the kingdom into one monarchy. In their reign, the Inquisition was established, and America discovered. In the reign of Philip III. in the beginning of the seventeenth century, the descendants of the Moors were banished from the kingdom, on the pretext that they were not real Christians. By this means, Spain was deprived of a million of the most intelligent and industrious of her subjects;

* 10. Of these universities, the chief is Salamanca, which has sometimes had 16,000 students. In 1785, however, their number was less than 2000. The system of education is said to differ little from that of the schools before the revival of literature. The most noted Spanish writer, in modern times, is Cervantes, the author of Don Quixote. The Spanish language is principally derived from the Latin, which it much resembles.

† 11. The Inquisition has been long established in Spain; and in no country has its power been exerted so cruelly and so effectually against any deviation from the doctrine and discipline of the Romish church. The number of archbishops is 8, and of bishops 46.

‡ 12. The men, especially in the higher classes, were formerly extremely jealous; and kept the females confined in the houses almost as in prisons, scarcely ever allowing them to be seen. Even when they were permitted to go out, they were veiled, and were guarded by duennas or governesses, who also attended them in the same capacity at home. Since the accession of the Bourbon family, however, there has been a gradual relaxation, and the ladies are now allowed nearly the same freedom as in Britain.

a loss which is perhaps still felt. On the death of Charles II. in 1701, Philip V. grandson of Louis XIV. of France, ascended the throne, and succeeded with great difficulty in maintaining his claim. This prince was the first of the Bourbon, or present reigning family. In 1808 Bonaparte seized the royal family, and placed his brother Joseph on the throne. By the exertions of the Spaniards however, and more especially by the bravery and efforts of the British under the Duke of Wellington, the French were expelled, and Ferdinand VII. recovered the throne of his ancestors.

Exercises on the Map of Spain.

Trace the courses of the several chains of mountains, and of the rivers that flow between them. How far is Madrid from the sea? How far is Cadiz from Gibraltar? What are the latitudes and longitudes of Madrid, Barcelona, Cordova, and Salamanca? Through what parts of Spain does the meridian of Greenwich pass? What parts have the same longitude as Dublin?

XI.—PORTUGAL.*

1. *Boundaries.*—Portugal is bounded on the north and east by parts of Spain, and on the south and west by the Atlantic.†

2. *Divisions.*—Portugal is divided into six provinces, which, with their chief towns, are as follows:

Questions on the Notes to Section X.

1. What are the extreme latitudes and longitudes of Spain? Its length and breadth? Its content?
2. What are the principal towns in the Balearic Isles? On what island is Cadiz?
4. How are the mountains of Spain and Portugal disposed? What are the heights of some of the principal of them?
6. What are the populations of the principal towns of Spain? Give an account of Madrid. Of Gibraltar.
7. Why is Spain not so warm as some countries of the same latitude? What are some of the fruits produced in Spain?
8. Give an account of the *mesta*.
9. What causes the smallness of the population of Spain? What is the population said to have been in ancient times? What proportion of the people were clergymen, monks, or nuns, in 1768?
10. What is the principal Spanish university? What number of students has it had? Who was the most distinguished Spanish author in modern times?
12. What was formerly the condition of the females in Spain? What is it now?

* 1. Portugal derives its name from Porto Calle (the port Calle); as Calle, now Oporto, which was of some consequence in the time of the Romans, afterwards, in the middle ages, attracted so much attention as to give name to the surrounding district, and at length to the whole kingdom. The name Oporto signifies simply *the port*; and hence is derived the name of *port wine*, as if Porto wine.

† 2. Portugal is situated between 37° and 42° 10′ north latitude, and between 7° 20′ and 9° 40′ west longitude. Its length and breadth are about 360 and 120 miles respectively; and it contains about 37,000 square miles.

PROVINCES.	CHIEF TOWNS.
Entre Douro e Minho .	Porto or Oporto, Braga, Viana
Traz-os-Montes	Braganza, Miranda
Beira	Coimbra, Guarda, Almeida
Estremadura	Lisbon or Lisboa, Setuval or St. Ubes, Santarem, Cintra
Alentejo	Evora, Elvas
Algarva	Tavira, Lagos, Faro

3. *Seaports.*—The chief seaports and bays are Oporto, Lisbon, St. Ubes, Faro, Viana, and Tavira.

4. *Capes.*—The principal capes are Mondego, Roca or the Rock of Lisbon, St. Vincent, and Santa Maria or St. Mary.

5. *Chief Towns.*—Lisbon, Oporto, St. Ubes.*

6. *Colonies.*—The Cape Verde Islands, the Azores, the Madeiras,† Angola, Mozambique, Goa, &c.

7. *Population.*—The population is supposed to exceed three millions and a half. The army, in time of war, amounts to about 30,000; and the fleet, to about twelve or fourteen sail of the line, and as many frigates.

8. *Commerce.*—The commerce of Portugal is now inconsiderable, and is chiefly with England and the Portuguese colonies.

9. *Literature, &c.*—The only university is that of Coimbra; and education is much neglected.‡

10. *Historical Sketch.*—Portugal began to be recovered from the Moors in 1050; and in 1254 the kingdom attained its present magnitude, by the conquest of Algarva. In the course of the fifteenth century, the Portuguese made great maritime dis-

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* 3. The population of Lisbon is about 230,000, of Oporto about 65,000, and of St. Ubes 12,000. In 1755, a great part of Lisbon was destroyed by a dreadful earthquake, and about 30,000 of the inhabitants perished. The part of the city since built, is neat and regular; but, in most of the old part, the streets are so narrow and the houses so high, that the sun never shines on the pavement except at noon.

† 4. The Azores, or Western Islands, lie in the Atlantic Ocean, at nearly equal distances from Europe, Africa, and America. Their names are St. Mary, St. Michael, Tercera, St. George, Gracioso, Fayal, Pico, Flores, and Corvo. They are situated in nearly 40° of north latitude, and 30° of west longitude; and contain 60,000 or 70,000 inhabitants. The Cape Verde Islands and the Madeiras will be mentioned among the islands of Africa.

‡ 5. The country produces few authors, because the number of literary men is small; and even those who might be qualified to write well, are deterred by the expense of publication, which they can scarcely expect to be repaid, so small is the number of readers. The most distinguished writer produced in the country, was the poet Camoens, author of the Lusiad. The Portuguese language, as may be expected, bears a near resemblance to the Spanish. It is very little studied by foreigners.

For information respecting climate and other heads omitted above, the account of Spain, given in the last section, must be consulted, as it will serve equally for Portugal.

coveries; tracing the western coast of Africa, and finally discovering, under the command of Vasco de Gama, in 1497, the passage to India by the Cape of Good Hope; an event which produced effects little inferior in importance to those which resulted from the discovery of America. John III. who died in 1557, established the Inquisition. His son, Sebastian, invaded Barbary; but was defeated and slain, with most of his nobility and army; and Philip II. of Spain, husband of Sebastian's sister, made himself master of Portugal. The Portuguese, however, after some unsuccessful attempts, expelled the Spaniards in 1640; and John, duke of Braganza, was made king. The crown has since continued in his family; but the country has greatly declined in importance. In the invasion of the peninsula by Bonaparte, Portugal shared the same fate with Spain, and had a similar deliverance by the British under Wellington.

XII.—NETHERLANDS.

1. *Boundaries.*—The Netherlands are bounded on the north and west by the German Sea; on the east, by Germany; and on the south, by France.*

NORTHERN.

DIVISIONS.	CHIEF TOWNS.
Friesland . .	Leeuwarden, Franeker
Groningen .	Groningen
Drenthe . . .	Assen
Overyssel . .	Deventer, Campen
Holland . . .	AMSTERDAM, Leyden, Rotterdam, Hague, Delft, Dort, Haerlem

Questions on the Notes to Section XI.

1. Whence is port wine so called?
2. What are the extreme latitudes and longitudes of Portugal, and its dimensions?
3. What are the populations of the principal towns of Portugal? Give an account of Lisbon.
4. What is the population of the Azores?
5. Who was the most distinguished Portuguese writer?

* 1. The Netherlands, or Low Countries, now called the United Kingdom of the Netherlands, are so named from the lowness of their situation. The extreme latitudes are 49° 28′ and 53° 29′ north, and the extreme longitudes 2° 30′ and 7° 10′ east. The length of the kingdom, from north to south, is nearly 280 miles; its greatest breadth about 160 miles; and it contains about 24,000 square miles.

The inland boundary agrees with that of France, already given, as far as the Moselle. It then extends, in an irregular direction, northward; and, crossing the Meuse near Ruremonde, again meets it near Groningen. It then leaves Nimiguen a little to the west, and turns eastward till it nearly reaches the seventh degree of longitude; and extends thence, in an irregular northerly direction to the sea, a little west of the Ems.

DIVISIONS	CHIEF TOWNS.
Utrecht . . .	Utrecht
Gelderland .	Nimiguen, Zutphen, Arnheim
Zeeland . . .	Middelburg, Flushing
MIDDLE.	
Antwerp . .	Antwerp
Brabant . . .	Brussels, Breda
Flanders . .	Ghent, Bruges, C[illegible]euport, Dixmude, Ypres, Courtray, Ou[illegible]arde
SOUTHERN.	
Hainault . .	Mons, Fontenoy, Malplaquet, Enghien
Namur . . .	Namur, Charleroi
Liege	Liege
Limburg . .	Limburg, Maestricht
Luxemburg .	Luxemburg*

2. *Islands.*—The principal islands are South Beveland, North Beveland, Walcheren, and several others, at the mouths of the Scheldt, Waal, and other rivers; and the Texel, Ameland, &c. at the entrance of the Zuider Zee.

3. *Seaports.*—The chief ports and places of trade are Amsterdam, Enkhuizen, Campen, Hoorn, Schiedam, Rotterdam, Dort, Hellevoetsluis, Bergen-op-zoom, Flushing, Antwerp, and Ostende.

4. *Rivers.*—The chief rivers are the Rhine, the Maes or Meuse, and the Scheldt or Escaut.†

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* 2. The Netherlands, with the part of Germany west of the Rhine, were called Gallia Belgica by the Romans, and were afterwards divided into 17 provinces. These were the same as the divisions here given, with the exception of Liege, which was not a distinct province; and with the addition of Artois, Cambresis, and Zutphen, the last of which, being politically united to Gelderland, was not reckoned a separate province. The provinces of Friesland, Groningen, Overyssel, Holland, Utrecht, Gelderland, and Zeeland, formerly constituted the republic of the Seven United Provinces. This was often named simply Holland, and its inhabitants are called Dutch. The name *Netherlands* was generally confined to the remaining ten provinces, and their inhabitants are called Flemings.

† 3. The Rhine, near Nimiguen, divides into three branches: the Yssel, which flows northward into the Zuider Zee; and the Leck and Waal, which flow westward into the German Sea. The two latter also separate into various other branches, and the Waal unites with the Maes. The Scheldt receives the Lys at Ghent; and the Maes, the Sambre at Namur. The entire tract of country between the Yssel, the Waal, and the sea, may be regarded as the delta of the Rhine; and, as in similar tracts elsewhere, the mouths of the Rhine and the streams which join it, have at different times undergone great changes, some of them being wholly or partially stopped up, others enlarged, and in several instances new channels opened.

5. *Lake.*—The sea of Haerlem is the principal lake.

6. *Chief Towns.*—Amsterdam, Brussels, Antwerp, Liege, Ghent, Rotterdam, Leyden, Hague, and Haerlem.*

7. *Colonies.*—To this kingdom belong Surinam in South America, and several settlements in the East and West Indies, with some on the Guinea coast.

8. *Face of the Country.*—The country is extremely flat, especially Holland and Flanders, containing no mountains, and scarcely any thing that deserves the name of hill. There are great numbers of dikes to prevent inundations, and numerous canals for the conveyance of goods and passengers. The country is finely cultivated, and is full of neat, elegant villas, and comfortable farm-houses and cottages, amid groups of trees.†

9. *Climate.*—The climate in the south is mild; but in the north it is moist, with much cold and frost in winter.‡ The

* 4. Amsterdam contains about 200,000 inhabitants; Brussels, 80,000; and each of the others, 40,000, or upwards. Amsterdam, Rotterdam, and several other towns, have numerous canals passing through the streets; and, in many instances, with a row of trees on each side. In the sixteenth century, Antwerp was the first commercial city in Europe, and contained a population of more than 200,000. It had generally 2500 vessels lying in its roads, and it was usual for 500 to go and come in a day. By the exertions of the Dutch, however, an article was agreed on in the peace of 1648, prohibiting any large vessel from sailing with a cargo to Antwerp; and the Dutch erected forts to enable them to carry this unjust measure into effect. By this means, the trade was transferred to Amsterdam; and Antwerp rapidly declined, till its population was reduced to 50,000. The navigation of the Scheldt, however, has been open since 1794, when the forts were dismantled by the French; and Antwerp, having now a free trade, has begun to recover, and contains sixty or seventy thousand inhabitants.

† 5. None of the Netherlands, except the eastern parts, have any hills; and even there, the eminences are of the most trifling kind. Hence the country, though finely cultivated, and beautified by art, is too uniform in appearance, and wants all the grander features of nature. There are some large forests in Flanders, Luxemburg, and other parts in the south.

In Holland, the canals are as numerous as the roads, and are supplied with boats drawn by horses, which have fixed hours of departing and arriving; and are used, almost universally, for travelling. The canals communicate with the Rhine and other large rivers; and thus, productions of every kind can be transported, at moderate expense, through the Netherlands and a great part of Germany.

The dikes are generally 30 feet high, and 70 feet broad at the bottom. They are formed of clay, fenced on the land side with wood and stone, and next the sea with mats of rushes or flags, or with sea-weed, which last is found to be the best protection for dikes against the waves. In some parts, the men employed to take care of the dikes cover them, in the times of storms, with sails. It often happens, however, that all precautions fail in preventing inundations, and some of these are attended with dreadful consequences. In 1568, some of the islands of Zeeland, a great part of the coast of Holland, and almost all Friesland, were laid under water; 72 villages were inundated; and, in Friesland alone, above 20,000 people were drowned.

‡ 6. In Holland and the other northern provinces, north-easterly winds prevail during the winter; and, blowing from the frozen regions of the north, occasion so much cold, that the canals, rivers, and the Zuider Zee, are generally frozen over. At these times, the inhabitants have recourse to skating, not merely as an amusement, but as a mode of travelling; and the country girls proceed in this way to market, carrying baskets of eggs or other articles on their heads.

country is in general fertile; but even naturally barren districts are rendered productive by the great industry of the people, and the excellence of their system of agriculture.

10. *Produce.*—Besides grain of various kinds, great quantities of flax, madder, and butter, are produced.

11. *Population, Army, &c.*—The population is above six millions, and the standing army about 50,000. The navy consists of 12 sail of the line, and above 20 frigates.

12. *Government.*—The new constitution, which was agreed on in 1815, considerably resembles that of Britain, but gives the king much more power.*

13. *Commerce and Manufactures.*—This country was long famous for its trade with every part of the world. Its commerce was greatly injured, however, by the wars which followed the French Revolution; but it is now gradually recovering. The manufactures of earthenware in the north, and of fine linens in the south, have long been celebrated.†

14. *Literature.*—The northern or Seven United Provinces have produced many men of great learning, particularly in the ancient languages; while the other provinces have been chiefly distinguished for painting and polite literature.‡

15. *Religion.*—The prevailing religion in the seven northern provinces is Calvinism; and, in the rest of the kingdom, Roman Catholic. Persons of other denominations, however, are not only tolerated, but are eligible to all employments in the state.§

16. *Character, &c.*—The Dutch are remarkable for industry and love of gain. The Flemings possess the same qualities, but in a less degree. Both are greatly distinguished for their habits of order, neatness, and cleanliness.‖

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* 7. The house of peers consists of between 40 and 60 members, who are not hereditary, but are chosen for life by the king. The other house consists of 110 members, of whom about a third are annually changed. The peers receive yearly salaries of £270 each, and the members of the other house £220 each.

† 8. A well-known species of earthenware derives its name from the town of Delft, where it was originally made; and *cambric* is so called from Cambray, the centre of the district, in the south of the Netherlands, in which it was extensively manufactured, and so successfully, as not to be equalled in any other country.

‡ 9. There are six universities; those of Leyden, Utrecht, Groningen, Louvain, Ghent, and Liege. Besides these, the religious bodies have, in several instances, seminaries of their own; and there is a military academy at Dort, and a naval one at Sluys.

Of the eminent men of these provinces, it may be sufficient to mention Erasmus, Scaliger, Huyghens, Leuwenhoek, Boerhaave, Grotius, Rubens, Vandyke, and Rembrandt. It is to be regretted, that the universities in the Netherlands have greatly declined in character, and have not kept pace with the modern advances of science.

§ 10. The church government among the Calvinists, resembles that of the church of Scotland; and there are 9 synods, and 1570 ministers. In the Catholic provinces, there are 3 archbishops and 9 bishops. The number of Protestants is thought to be about half that of the Catholics. The Arminians or Remonstrants have 84 congregations; and there are Lutherans, Baptists, Jews, &c. The clergy are all paid by the state, and receive annual salaries, which are of different amounts, between £70 and £200. The entire sum thus paid annually for the support of religion, is about £270,000. The religion of the court is Calvinism.

‖ 11. The Dutch universally smoke tobacco, and are considered silent and unso-

17. *Historical Sketch.*—After the fall of the Roman empire, the Netherlands were seized by the Goths and other northern hordes, who divided them into several petty states. After various changes, the whole country became united under the house of Burgundy, in 1433. By the marriage of Mary of Burgundy with the emperor Maximilian, it was joined to the German empire. It then passed into the possession of Spain; and, after forming a part of the vast dominions of the emperor Charles V. it became subject to his son, Philip II. This prince persecuted the Reformers, and thus excited a rebellion, which terminated in the formation of the Seven United Provinces into a separate state, the independence of which was finally acknowledged in 1648. The other ten provinces remained in the possession of Spain, till the war of the duke of Marlborough; after which they were yielded up by Spain, partly to the emperor of Germany, partly to the Dutch, and partly to the French. In the late revolutionary war, the whole country was conquered by France; and, after various arrangements, was annexed to that country by Bonaparte. On his fall, however, all the provinces were formed into a kingdom for the Prince of Orange, under the title of the Kingdom of the United Netherlands.

Exercises on the Map of the Netherlands.

What is the breadth of the narrowest part of the Zuider Zee? What are the distances from Amsterdam to Dort and to Antwerp? What are the latitudes and longitudes of Amsterdam, Brussels, Ghent, and Waterloo?

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cial. From the dampness of the climate, which causes metals to rust, and wood to mould, the Dutch have found it necessary to pay great attention to the washing and scouring of their furniture and other articles; and hence they have derived those habits of cleanliness for which they are so remarkable.

Questions on the Notes to Section XII.

1. Why are the Netherlands so named? What are the extreme latitudes and longitudes of the kingdom? Its extent?
2. What constituted the republic of the Seven United Provinces? Who are the Dutch? The Flemings?
4. What is the population of Amsterdam? Of Brussels? How many towns in the Netherlands have each 40,000 inhabitants or upwards? What is remarkable in the streets of several of the towns? Give an account of Antwerp.
5. What are generally the dimensions of the dikes? Of what are they made? How are they defended against the sea? Give an account of the inundation of 1568.
6. For what purpose is skating employed in Holland?
7. How many members compose the houses of legislature?
8. What towns of the Netherlands give names to two species of manufacture?
9. What universities are there in the Netherlands? What is the present character of those seminaries? Who were some of the most eminent men produced in these provinces?
10. By whom are the clergy paid? What salaries do they receive? What is the religion of the court?
11. What practice is universal among the Dutch? Whence have they derived their habits of cleanliness?

XIII.—GERMANY.*

1. *Boundaries.*—Germany is bounded on the north by the German Sea, Denmark, and the Baltic; on the east, by Hungary, and part of the Prussian dominions; on the south, by Italy and Switzerland; and on the west, by France and the Netherlands.

2. *Divisions.*—Germany was formerly divided into large portions, called *circles:* three northern, Westphalia, Lower Saxony, and Upper Saxony; three in the middle, Lower Rhine, Upper Rhine, and Franconia; and three southern, Swabia, Bavaria, and Austria. The following are the principal divisions, as settled by the Congress of Vienna, in 1815:

DIVISIONS.	CHIEF TOWNS.
Austrian Possessions . . .	Vienna, &c.
Prussian Possessions . . .	Berlin, &c.
Kingdom of Bavaria . . .	Munich, Augsburg
——— Hanover . . .	Hanover, Hildesheim
——— Wirtemburg . .	Stutgard, Hailbron
——— Saxony . . .	Dresden, Leipzig
Baden	Carlsruhe, Manheim
Hesse Cassel	Cassel, Hanau
Hesse Darmstadt	Mentz, Darmstadt
Mecklenburg Schwerin . .	Schwerin
Mecklenburg Strelitz . . .	Strelitz
Nassau	Wiesbaden
Brunswick Wolfenbuttle . .	Brunswick, Wolfenbuttle
Holstein Oldenburg . . .	Oldenburg
Saxe Weimar	Weimar, Jena
Saxe Gotha	Gotha

To these may be added, the four free imperial cities of Frankfort on the Mayne, Hamburg, Bremen, and Lubec, with their respective territories.†

* 1. Germany lies between 45° and 55° of north latitude, and between about 6° and 20° of east longitude. Its length and breadth are each above 600 miles; and its content is about 250,000 square miles. In treating of the geography of this interesting portion of Europe, it will be proper, first, to give a general view of the country at large, and then to consider some of the more important divisions separately.

† 2. Other smaller divisions are Saxe Saalefield Coburg, Saxe Meinungen, Waldeck, Reuss, Lippe, Schaumburg, Hohenzollern, Schwartzberg, Anhalt, Isemburg, Hesse Homburg, and Saxe Hildburghausen.

3. *Mountains, &c.*—In general, the north of Germany is flat, and the south hilly and mountainous. The chief mountains are those of Tyrol and Carinthia, in Austria; and the Erzegebirge, between Saxony and Bohemia. In some parts of the country, there are extensive forests. The mountains are also, in many instances, covered with pines and other trees.

4. *Rivers.*—The chief rivers are the Danube, which flows eastward, from near Friburg, by Ulm, Ratisbon, and Vienna; and, passing through Hungary and Turkey, falls into the Black Sea: the Rhine, which, rising in Switzerland, passes through the Lake of Constance; then, flowing northerly, forms the western boundary of Baden; and, after receiving the Mayne, Moselle, and other smaller rivers, flows through the Netherlands by several mouths into the German Sea: the Elbe, which flows north-westerly, by Dresden and Hamburg, into the same sea: and the Oder, which runs northerly into the Baltic, through Pomerania.

5. *Climate, &c.*—In the middle of Germany, the climate is good, and the soil productive: but in the north, and in the mountainous districts, it is colder, and the soil is less fertile. The ordinary productions are cattle, timber, wine, and various kinds of grain. Agriculture is, in general, in rather a backward state.

6. *Mineral Waters.*—Germany contains more mineral waters and baths than all the rest of Europe. The principal are those of Spa, Aix-la-Chapelle, Pyrmont, and Baden.

7. *Population.*—The population is supposed to exceed thirty millions.

8. *Science, &c.*—Germany has many universities, and has produced a vast number of learned and eminent men.*

9. *Religion.*—In the southern parts of Germany, the prevailing religion is the Roman Catholic; in the northern, it is Protestantism in its different shades; and, in the middle, there is a pretty equal mixture of both.

* 3. Some of the principal Protestant universities are Leipzig, Jena, Wittenberg, Gottingen, Halle, and Marpurg; and of the Catholic, Vienna, Ingolstadt, and Saltzburg. The German scholars have directed their attention chiefly to metaphysics, criticism, antiquities, theology; and latterly to poetry, chemistry, and natural history. Of the learned and eminent men of Germany, it may be sufficient to mention Kepler, Luther, Melancthon, Leibnitz, Klopstock, Werner, Griesbach, Mosheim, Schiller, Herder, Wieland, Goethe, and Heyne.

10. *Character, &c.*—The Germans are in general a plain, unaffected people, more given to thinking than speaking, and faithful in the performance of their engagements. They generally conduct themselves well, and there are few instances of the deeper class of crimes.

11. *Constitution.*—While the several states of Germany have their respective constitutions and laws, the general affairs of the country are regulated by what is called the Germanic Confederation. This is simply a union of the several states of Germany; and the public enactments are made in an assembly, called the Federative Diet.*

12. *Historical Sketch.*—A large portion of Germany was conquered, though with much difficulty, by the Romans. After the fall of their empire, nothing of much consequence occurred till the time of Charlemagne, who was crowned emperor of Germany in the year 800, having united the entire country under his own sway. Several of his successors had violent, and generally unsuccessful struggles with the Popes for political power. In 1519, Charles V. was elected sovereign, and became the most powerful and distinguished of all the emperors. The Reformation was commenced in 1517, by Luther, a native of Saxony, and continued to be propagated extensively during the reign of Charles. In the year 1740, Charles VI. died, leaving no male issue; and the right of his daughter, Maria Theresa, to the crown, was disputed in a war in which most of the powers of Europe were involved. This war terminated in 1748, in the peace of Aix-la-Chapelle, when the husband of Maria Theresa was acknowledged emperor, under the title of Francis I. In 1806, Francis II. after the almost total conquest of his dominions by Bonaparte, was obliged to exchange the title of emperor of Germany, for that of emperor of Austria, which is still retained.

Exercises on the Map of Germany.

What are the latitudes and longitudes of Vienna, Dresden, Hamburg, and the two Frankforts? Through what places does the parallel of 50° pass? What places are passed through in travelling by a direct route from Konigsberg to Trent? From Vienna to Bremen?

* 4. In the Federative Diet there are seventeen votes; of which, Austria, Prussia, Bavaria, Saxony, Hanover, Wirtemburg, Baden, Electoral Hesse, the Grand Dutchy of Hesse, Denmark (for Holstein), and the Netherlands (for Luxemburg), have each one vote; while the remaining six votes are divided among the minor states, two or more of these appointing a representative to support their interest, and vote in their behalf. At the meetings of the diet, Austria presides; but has no farther power, except a simple vote. When fundamental laws are to be made or altered, the diet resolves itself into a general assembly, in which Austria, Prussia, Bavaria, Saxony, Hanover, and Wirtemburg, have each four votes; Baden, Electoral Hesse, the Grand Dutchy of Hesse, Holstein, and Luxemburg, three each; Brunswick, Mecklenburg Schwerin, and Nassau, two each; and several minor states, one each; making in all, sixty-nine votes. By a special article, also, Catholics and Protestants are to be on an equal footing in all the states. This new system was established in 1814, and confirmed in 1815; and may be regarded as a substitute for the old system, which was overturned by the French in 1806.

XIV.—AUSTRIAN EMPIRE.*

1. *Divisions.*—The Austrian empire consists of parts of Germany, Poland, and Italy, with Hungary, and some places of minor consequence. These, with their chief towns, are as follows:

IN GERMANY.

DIVISIONS.	CHIEF TOWNS.
Archdutchy of Austria	Vienna or Wien, Linz
Stiria	Gratz
Carinthia	Villach, Clagenfurt
Tyrol	Inspruck, Trent
Carniola	Laybach, Trieste
Saltzburg	Saltzburg
Bohemia	Prague
Moravia	Brunn, Olmutz
Austrian Silesia . .	Troppau

IN POLAND.

Galitzia†	Lemberg or Leopol, Jaroslav
Bukovina	Suxawa

IN ITALY.

Kingdom of Lombardy and Venice . . .	Milan, Venice, Brescia, Pavia, Mantua, Verona, Vicenza

HUNGARIAN STATES.

Hungary	Pesth, Buda or Ofen, Presburg or Posony
Slavonia	Posega, Gradiska
Croatia	Agram, Carlstadt
Transylvania . . .	Kronstadt, Hermanstadt
Dalmatia	Sebenico, Zara

Questions on the Notes to Section XIII.

1. What are the situation, length, breadth, and content of Germany?
3. To what subjects have the German scholars principally directed their attention? Name some of the most distinguished men produced in Germany.
4. Describe the Federative Diet. What are the relative situations of the Catholics and Protestants in the German states?

* 1. The boundaries of this extensive empire, may be traced on a map by means of the divisions here given. The entire content has been computed to be about 240,000 square miles; of which the German dominions constitute about 70,000, the Hungarian about 110,000, the Polish above 30,000, and the Italian nearly 30,000.

† 2. Galitzia or Galicia, and Bukovina, formed a part of the kingdom of Poland, till the partition of that country in 1773, between Russia, Austria, and Prussia. They now belong to Austria, and their population is supposed to be nearly four millions.

2. *Seaports.*—Trieste and Venice, on the Gulf of Venice.

3. *Face of the Country.*—The principal mountains are the Erzegebirge, Sudetic, and Carpathian or Crapak, to the north and east; and the Brenner Mountains, or Alps of Tyrol, in the circle of Austria. In Hungary there are extensive marshes; and it contains two of the greatest plains in Europe, one of them being 350 miles in length, and the other above 100.

4. *Lakes.*—The principal lakes are the Balaton Tava or Platten See, and the Neusiedel, in Hungary.

5. *Rivers.*—The Danube, Elbe, and others, in Germany: the Po and Adige, in Italy: and the Save, Drave, and Inn, which flow into the Danube, on the southern side; and the Teisse, or Tisza, or Theis, on the opposite side.

6. *Towns.*—The principal cities and towns are Vienna, Venice, Milan, Prague, Lemberg, Brescia, Gratz, Pavia, Pesth, Buda, and Presburg.*

7. *Climate.*—In the mountainous districts, the winter is cold and stormy; but, in the low parts of the country, particularly about the Danube, the heat in summer is very great.

8. *Population and Army.*—The population is computed to be twenty-nine or thirty millions. The army, in time of war, has sometimes amounted to 500,000; while the peace establishment is supposed to be nearly 300,000.

9. *Manufactures.*—There are manufactures of woollens, linens, silks, and various other articles. In these, however, this country is far behind England and France.

10. *Religion.*—The established religion is the Roman Catholic; but, since the time of Joseph II. who died in 1791, all others are tolerated, and their members are free from restrictions on account of their religious belief.

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* 3. The population of Vienna is very differently stated; some writers making it 300,000, and some little more than 200,000. The populations of Venice and Milan are each about 150,000, of Prague 80,000, Lemberg or Leopol 50,000, Brescia 48,000, Gratz 35,000, Pavia 30,000, Presburg 27,000, Pesth 53,000, and Buda 32,000. These two last are on opposite sides of the Danube, and may be regarded as forming one town, with 85,000 inhabitants. They communicate by a bridge of boats three quarters of a mile long. Trent is celebrated as being the place where the last general council of the Roman Catholic Church was held, soon after the commencement of the Reformation.

Exercises on the Map of Austria.

Find, by the scale of the map, how far the Danube flows through the Austrian territories. What are the distances from Vienna to Buda, and from Buda to Belgrade? Through what places will the most direct route from Milan to Suxawa pass? What part of the Austrian dominions has seacoast? What are the latitudes and longitudes of Buda and Trieste?

XV.—KINGDOM OF PRUSSIA.*

1. PROVINCES.	CHIEF TOWNS.
Eastern Prussia . . .	Konigsberg
Western Prussia . . .	Dantzig
Posen	Posen
Pomerania	Stettin, Stralsund
Silesia	Breslau
Brandenburg	BERLIN, Potsdam, Frankfort-on-the-Oder, Brandenburg
Dutchy of Saxony . .	Magdeburg, Erfurt
Westphalia	Munster
Juliers, Cleves, and Berg	Cologne, Dusseldorp
Lower Rhine	Aix-la-Chapelle, Coblentz, Treves
District of Neufchatel .	Neufchatel

2. *Seaports.*—Memel, Konigsberg, Elbing, Dantzig, Colberg, Stralsund, Stettin.

3. *Face of the Country.*—Prussia has no mountains, except about its boundaries; and the country is in general extremely flat. Seventeen millions of acres are computed to be covered with forests.

4. *Rivers and Lakes.*—The principal rivers are the Elbe, Oder, and Vistula; and there are numerous shallow lakes, in consequence of the water becoming stagnant from the flatness of the country.

Questions on the Notes to Section XIV.

1. What is the magnitude of the Austrian Empire?
2. What is the population of the Polish part of the Austrian dominions?
3. What are the populations of the principal towns? For what is Trent famous?

* 1. The boundaries of this kingdom are very irregular, and could not be given in small compass. To assist in determining their general outline, however, it may be proper to state, that the Prussian territories extend from the Niemen or Memel on the east, to the Yssel on the west; and that the inland boundary passes near Grodno, Warsaw, Cracow, Glatz, Leipzig, Erfurt, Cassel, Coblentz, Treves, and Aix-la-Chapelle. The content is thought to exceed 100,000 square miles. Some parts are detached from the rest, as Neufchatel.

5. *Chief Towns.*—Berlin, the capital, has a population of about 160,000. Other considerable towns are Breslau, Konigsberg, Dantzig, and Cologne.*

6. *Climate, Soil, &c.*—Much of the country is rather cold and moist, from the forests and undrained marshes. Silesia, Posen, and the countries about the Rhine, are fertile, particularly in grain. There are few minerals, except amber, which is found on the sea-shore, and in coal mines.

7. *Population and Army.*—The population is about eleven millions; and the army, in time of peace, is at present about 160,000.

8. *Manufactures and Commerce.*—The chief manufactures are those of linen† and broad cloth. The commerce is considerable; and much linen, timber, and corn, are exported.

9. *Literature.*—The literature of Prussia is in so advanced a state, as perhaps not to be surpassed by that of any other country. By law, a school is established in every village; and there are several universities, the principal of which are Berlin, Konigsberg, Breslau, Halle, and Frankfort-on-the-Oder.‡

10. *Religion.*—All sects are not only tolerated, but are admissible to every office in the state. Nearly one third of the people are Roman Catholics, and the rest are principally Lutherans and Calvinists.§

11. *Historical Sketch.*—In 1701 Prussia was erected into a kingdom, under Frederick I.; having been formerly only a dukedom. In 1740 Frederick II. deservedly called Frederick the Great, ascended the throne; and, by his extraordinary talents as a statesman and a warrior, he raised Prussia to a high degree of consequence among the nations of Europe. He added Silesia to his dominions; encouraged literature among his subjects; and improved his kingdom, by clearing waste lands, making canals,

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* 2. The respective populations of these are about 63,000, 55,000, 45,000, and 39,000. To these may be added Magdeburg, Aix-la-Chapelle, Halle, Stettin, and Posen, none of which has a population of less than 20,000. The number of towns that contain 10,000 inhabitants or upwards is twenty-six.

† 3. Linen is the staple manufacture, and the Prussian damask is preferred to any other. The commerce is greatly injured by restrictive laws and duties on various articles.

‡ 4. For the masters of the schools above mentioned, a competent support is provided, by a tax laid on the lord of the village, and such of his tenants as are able to pay; and any parent or guardian who neglects to send a child to school without proper cause, is obliged to pay a double tax. The children of the poor are taught free. There are also in the kingdom 105 gymnasiums, each containing from four to twelve masters. In these are taught classics, mathematics, modern languages, drawing, &c. Of the learned men produced in this country, it may be sufficient to mention Copernicus, Cluverius, Muller or Regiomontanus, Wolff, Mendelsohn, Klaproth, and Humboldt. Frederick the Great, also, was distinguished not only as a warrior and statesman, but as the author of several works of high character.

§ 5. The two latter bodies formed a union in 1817, the three-hundredth anniversary of the Reformation; and there is perhaps no country in which the different religious sects live in such harmony as in Prussia.

rebuilding and repairing desolated cities, and by various other means. He also acquired a part of Poland, in the partial dismemberment of that unfortunate country, in 1772. The present king, Frederick William III. ascended the throne in 1797. In 1806 and 1807, he was deprived by Bonaparte of almost all his dominions, and reduced to such a state of distress and humiliation, as to be obliged to receive £80,000 from the British treasury, for the support of his family and household. He afterwards assisted, however, in overthrowing the power of Bonaparte; and, at the congress of Vienna in 1815, all his former possessions, except a part of Poland, were restored to him; and his dominions were farther increased by the Lower Rhine, Juliers, Cleves, and Berg, Munster, Thuringia, Upper and Lower Lusatia, and Menneberg. At the same time, he acquired Swedish Pomerania, and the island of Rugen, from Denmark, partly by exchange, and partly by purchase.

XVI.—KINGDOM OF BAVARIA.

1. *Situation, &c.*—This country, which was erected into a kingdom by Bonaparte in 1806, lies between Bohemia, Austria, Wirtemburg, and Hesse.

2. *Face of the Country, Soil, &c.*—Bavaria is mountainous on the south. The rest of it is a flat country, at the height of more than 1600 feet above the level of the sea. Much of the soil is barren, and the fertile parts are badly cultivated.

3. *Chief Towns.*—MUNICH, Augsburg, Nuremburg, Ratisbon, Ulm, Wurtzburg, Bamberg, Anspach, Bayreuth.*

4. *Population.*—The population is thought to exceed four millions.

5. *Government.*—The government is a limited monarchy.

6. *State of Education.*—There are five universities; but there

Questions on the Notes to Section XV.

1. What is the content of Prussia?
2. What are the populations of the principal towns? How many towns have 10,000 inhabitants or upwards? How many 20,000 or upwards?
3. What is the chief Prussian manufacture?
4. Who were some of the most eminent men produced in Prussia?

* 1. Munich is one of the finest and most beautiful cities in Germany, and has a population of 40,000 or 50,000. The population of Augsburg is about 36,000; of Nuremburg, 30,000; of Ratisbon, above 20,000; and the other towns above mentioned, contain from 10,000 to 20,000.

are scarcely any schools for the education of the poorer classes, who are consequently very ignorant.

7. *Religion.*—The religion is in general the Roman Catholic, in its strictest form.

XVII.—KINGDOM OF HANOVER.

1. *Situation.*—This kingdom, which belongs to the king of England, is situated between the German Sea, the Elbe, Prussia, and the Netherlands.

2. *Face of the Country, Soil, &c.*—Most of the country is flat, and some of it marshy. A considerable part of it is covered with wood, and much of it is barren.

3. *Chief Towns.*—HANOVER, Hildesheim, Lunenburg, Zell, Gottingen, Klausthal, Emden, Osnaburg.*

4. *Population and Government.*—The population is a million and a quarter; and the government has been lately changed, so as to resemble that of England.

5. *State of Education.*—The only university is that of Gottingen, which is very flourishing.† There are many academies; and, in all the villages, there are elementary schools.

6. *Religion.*—The established religion is Lutheranism; but Calvinists, Roman Catholics, and all others, are now free from penalties or privations, on account of their religious belief.

7. *Historical Sketch.*—In 1692 Hanover was made an electorate; and in 1714 the second elector, George Lewis, was made king of England, in virtue of his descent by his mother from James I. of that country. Since that time, Hanover has continued subject to the king of England; and in 1815 it was elevated to the rank of a kingdom, while his present majesty was prince regent.

XVIII.—KINGDOM OF WIRTEMBURG.

1. *Situation, Soil, &c.*—Wirtemburg, which was made a kingdom by Bonaparte in 1806, lies west of

* 2. Hanover contains about 25,000 inhabitants; Hildesheim, about 13,000; and the other towns mentioned above, from 7000 to 10,000.

† 3. This university, which was founded by George II. of England, in 1734, has 42 professors; and the number of students in 1816 was 1152, about two thirds of whom were foreigners. The library is one of the most valuable in Europe. Of the eminent men connected with this seminary, may be mentioned Mosheim, Michaelis, Haller, John Mathew Gesner, and Tobias Mayer.

Bavaria, and north of Switzerland. It is one of the finest and most fertile parts of Germany; producing grain, fruit, and rich wines, in great abundance.

2. *Chief Towns and Population.*—The chief towns are STUTGARD, Hailbron, and Hall;* and the population of the kingdom is rather above a million.

3. *Religion and Literature.*—The established religion is Lutheranism, without any distinction of rank among the clergy. The only university is that of Tubingen.

XIX.—KINGDOM OF SAXONY.

1. *Situation, Soil, &c.*—The kingdom of Saxony is situated between the Prussian dominions and Bohemia.† The climate is excellent; and the soil very fertile, except on the frontiers of Bohemia. The mines are also very valuable, particularly for silver, tin, copper, iron, and lead.

2. *Chief Towns.*—DRESDEN, Leipzig, Freyberg, Chemnitz.‡

3. *Population and Religion.*—The population is about one million; and the inhabitants are for the most part Lutherans, though for more than a hundred years the reigning princes have been Roman Catholics.

4. *Literature.*—Science and literature have long been cultivated, with peculiar care, in Saxony; and there the German language is spoken in the greatest purity. The only university, in the present Saxon dominions, is that of Leipzig; but there are many schools and academies.

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* 4. The population of Stutgard is nearly 20,000, and of Hailbron and Hall about 7000 each.

† 5. The bonndary passes near Leipzig, Weissenberg, and Gorlitz, on the north and east; and near Plauen and Hof, on the west. Much of the best part of the Saxon territories was given to Prussia by the congress of Vienna in 1815.

‡ 6. Prior to 1813, Dresden was one of the finest cities in Germany; containing many beautiful public buildings, and a population, according to some writers, of more than 100,000, while others state it at 60,000. In that year, it was taken by the allies from the French, after a long blockade, and several destructive bombardments, the effects of which will long be felt. Leipzig has a population of nearly 40,000. It is one of the principal trading towns of Germany; and is remarkable for its three great fairs, which are held at the beginning of the year, at Easter, and at Michaelmas, and continue a fortnight each. These are attended by more than 800 merchants from almost every country of Europe, and even by some from Asia, as also by nearly 300 booksellers; and articles of almost every kind are exposed to sale. Printing is carried on here so extensively, that about 10,000 volumes are published every year. Freyberg and Chemnitz have each about 10,000 inhabitants.

5. *Historical Sketch.*—The inhabitants of Saxony are of the same stock as the tribes who established the heptarchy in England. After a long contest, the country was conquered by Charlemagne, and the inhabitants embraced the Roman Catholic faith. At the commencement of the Reformation, in the sixteenth century, Frederick, elector of Saxony, was the friend and protector of Luther; and his subjects became Protestants. In 1697 Frederick Augustus abjured the Protestant religion, with a view, it is said, to obtain the throne of Poland; and all the sovereigns, since that time, have continued to be Roman Catholics. Saxony was entirely conquered by Frederick the Great of Prussia; but was restored at the peace of 1763. During the late wars, the elector was dignified with the title of king by Bonaparte, in 1806; and his dominions were enlarged by the addition of parts of the Prussian territories. In 1815, however, he was punished for his opposition to the Allied Powers, by the loss of a great part of his kingdom, which was then reduced to its present dimensions.

XX.—MINOR GERMAN STATES.

1. The GRAND DUTCHY OF BADEN is situated between Wirtemburg and the Rhine. It has a population of nearly a million; and the principal towns are CARLSRUHE, Manheim, Heidelberg, and Freyburg.

2. The GRAND DUTCHY OF HESSE CASSEL has a population of about 350,000; and the chief towns are CASSEL, Hanau, and Marpurg or Marburg.

3. HESSE DARMSTADT has a population of upwards of half a million; and contains the towns of Mentz, DARMSTADT, and Worms.

4. The DUTCHY OF MECKLENBURG SCHWERIN contains about 300,000 inhabitants; and that of MECKLENBURG STRELITZ, about 70,000. The former contains the towns of SCHWERIN, Gustrow, and Wismar; and the latter, that of STRELITZ.

5. The DUTCHY OF BRUNSWICK WOLFENBUTTLE has a population of 300,000; and the principal towns are BRUNSWICK, Wolfenbuttle, and Helmstadt.

6. Besides these, there are the GRAND DUTCHY OF HOLSTEIN OLDENBURG; the PRINCIPALITIES OF ANHALT, SAXE GOTHA, SAXE WEIMAR, and several others of small extent and consequence.

7. There are four free cities: Frankfort on the Mayne, Hamburg, Bremen, and Lubeck. These are cities of extensive com-

merce, and are independent of the surrounding states, each of them having a separate government of its own, of a republican form.*

Exercises respecting the German States.

What are the relative situations of Baden, Wirtemburg, and Bavaria? Of Hanover, Saxony, and Hesse Cassel? Of the four free cities? Of Hanover, Gottingen, Leipzig, Dresden, and Berlin? What towns are on the Elbe and the Oder?

XXI.—SWITZERLAND.*

1. *Situation and Divisions.*—Switzerland is situated between France, Germany, and Italy. It consists of 21 cantons; which, with their chief towns, are as follows:

CANTONS.	CHIEF TOWNS.
Basil	BASIL or BALE
Soleure	Soleure
Lucerne	Lucerne
Zug	Zug
Zurich	Zurich
Schaffhausen	Schaffhausen
Appenzell	Herisau, Appenzell
Friburg	Friburg

* 7. Hamburg has a population of about 110,000, or, with the territory that belongs to it, upwards of 130,000; while the others, with their respective territories, have each a population of nearly 50,000. These cities are the only remnants of the famous Hanseatic league, which commenced about the twelfth century, and comprehended 72 cities formed into a corporation for mutual defence against the feudal tyranny and anarchy of the times. This league was so powerful, about the beginning of the fifteenth century, as to be able to influence, in a considerable degree, the management of the affairs of Europe. By this means, it excited the jealousy of the continental princes, who gradually induced their subjects to withdraw from it; and, in consequence of this, its power and influence soon declined.

Questions on the Notes to Sections XVI.....XX.

1. What are the populations of the principal towns of Bavaria?
2. What are the populations of Hanover and Hildesheim?
3. Give an account of the university of Gottingen. What eminent men have been connected with it?
4. What is the population of Stutgard?
6. Give an account of Dresden. What is the population of Leipzig? For what is it remarkable? How many merchants and booksellers attend its fairs? How many volumes are published in it every year?
7. What are the populations of the four free cities? What were the origin and extent of the Hanseatic league? What brought about its decline?

* 1. The latitude of the middle of Switzerland is about 46° 45′ north, and its longitude about 8° east; and the surface of the country occupies a space of nearly 15,000 square miles.

CANTONS.	CHIEF TOWNS.
Berne	BERNE
Underwalden	Stantz, Sarnen
Schweitz	Schweitz
Uri	Altorf
Glarus	Glarus
Aargau	Aarau
Thurgau	Frauenfeld
St. Gall	St. Gallen or St. Gall
Pays de Vaud or Waadt .	Lausanne
Geneva	GENEVA
Vallais or Wallis . . .	Sion or Sitten
Tessino	Lugano
Grisons or Grey League .	Coire or Chur*

2. *Face of the Country, &c.*—Switzerland is the highest and most mountainous country in Europe, and is celebrated for its bold and sublime scenery. The principal mountains are the Alps, which occupy the greater part of the south and east of the country.†

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* 2. Before the French Revolution, there were only the first thirteen cantons above mentioned. The others, which have since been added, were formed out of the former allies and subjects of Switzerland. Neufchatel now belongs to Prussia.

† 3. In the south of Switzerland are Mont Blanc, Mont Rosa, Mont Cervin, and several others of the highest summits of the Alps. Among the wonderful and striking features of these mountains, may be mentioned the glaciers, avalanches, and waterfalls.

The glaciers are great fields or valleys of ice, filling the spaces between the summits of the mountains. One of the most remarkable of these, though not the largest, is that which gives origin to the Rhone. This is near the middle of Switzerland; and consists of two parts, one of which is three miles long and one broad, and the other is considerably larger. The appearance which these present to the traveller, is of the most beautiful description. On almost every side, they are surrounded by the most rugged mountains; and the rays of the sun cause the ice to glisten like crystal, while blue tints of inexpressible beauty are reflected from its surface. Some of the glaciers present deep fissures, and great inequalities, as if the surface of a sea had been frozen when agitated by a tempest. The fissures are occasioned by the partial melting of the ice beneath; and their formation, when the ice is rent by its own weight, is attended with a noise like thunder. The glaciers continually exist; gaining, from snow and congelation, in winter, what they lose in being melted by the heat of the earth, and of the summer sun.

Avalanches are great masses of snow, which roll down from the higher parts of the mountains; and, increasing in magnitude as they descend, overwhelm houses, cattle, or whatever lies in their course. These also frequently carry fragments of the mountains along with them; and from this cause, as well as from the descent of pieces of rock on other occasions, the glaciers and the bottoms of the valleys are strewed with masses of stone of every dimension. Sometimes also still larger portions of mountains yield to the gradual effects of time, and roll down with inconceivable force, carrying inevitable destruction in the line of their descent. In this way, the village of Pleurs, near Chiavenna, with its inhabitants, was overwhelmed, so that not a vestige of it remained.

The traveller among the Alps is presented with every variety of waterfall, from the small cascade to the tremendous cataract; the Reuss, the Rhone, and other

3. *Lakes.*—The lakes are numerous; and the principal are those of Geneva, Constance, Neufchatel, Lucerne, and Zurich.*

4. *Rivers.*—The principal rivers are the Rhine, Reuss, and Aar, which have a northerly direction, and unite; the Rhone, which flows westward; the Tessino and Adda, which flow southward into Italy; and the Inn, which has a north-easterly course, and joins the Danube in Germany.

5. *Towns.*—The chief towns are Geneva, Basil or Bâle, BERNE, Zurich, Lausanne, and Friburg.†

6. *Climate, Soil, &c.*—In the elevated parts of the country, the climate is cold; and the tops of Mont Blanc, and the other high mountains, are always covered with snow. In the low valleys, however, the heat in summer is great. Much of the country is altogether barren; but there are many valleys‡ in which the soil is extremely rich and fertile.§

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rivers, sometimes rolling smoothly along through winding valleys, sometimes bounding from rock to rock with stunning noise, and sometimes pouring their waters in one large jet over lofty precipices. One of the most remarkable waterfalls in the world is that of Staubach, where a torrent discharges its waters perpendicularly from the vast height of 930 feet. The greater part of the water forming this cascade, falls clear of the rocks in its descent, and is resolved into fine spray before it reaches the ground; while the rest dashes against a projecting rock, and is driven off with great violence. Staubach is near Lauterbrunnen, in Berne.

* 4. The surfaces of the lakes of Geneva and Constance, are elevated 1100 or 1200 feet above the level of the sea. The length and breadth of the former are 40 miles and 9 miles, and those of the latter 45 miles and 15 miles, respectively. The lakes of Switzerland are all deeper in summer than in winter, in consequence of the melting of the snows. In the Lake of Geneva, a difference of five or six feet is produced by this means. The greatest ascertained depth of this lake, is 950 feet; while the Lake of Constance has, near Mersbourg, the vast depth of 350 fathoms. This lake is navigated by vessels of 100 tons. The Lake of Geneva is extremely beautiful. Its form is that of a crescent; and its shores present every variety of scenery, from the softest to the most rugged and sublime; exhibiting, in some parts, wooded valleys or sloping fields, ornamented with neat villages, and well-cultivated grounds; and, in other directions, lofty mountains, some nearer and others more remote, and displaying numberless forms and various shades of colour. Its waters are transparent, and, from the reflection of the sky, are of a beautiful blue colour, except where it receives the turbid waters of the Rhone. These enter it with great rapidity, and discolour it for upwards of half a league; but the earthy particles are gradually deposited, and the Rhone issues from its other extremity with pure, transparent waters.

† 5. The population of Geneva is about 23,000; of Basil, 15,000; of Berne, 14,000; and of the other towns above mentioned, from 6000 to 10,000.

‡ 6. One of the most beautiful of these is the Vale of Chamouni, at the base of Mont Blanc, on its northern side. In this interesting valley, almost surrounded with towering mountains, the traveller is presented at once with the representation of the beauty and luxuriance of a southern climate, and the bleakness, sterility, and snow of a polar landscape. The Vallais also, or Valley of the Rhone, situated between the Helvetian and Pennine Alps, is remarkably fine and beautiful; presenting luxuriant meadows and fields of grain, with rich pastures, comfortable houses, and neat villages. These and numberless other attractions, render Switzerland the constant resort of travellers from every civilized country of the world.

§ 7. So great is the industry of the people, that, where it is at all possible, the

7. *Population, &c.*—The population rather exceeds two millions. The number of soldiers is great, in proportion to the population; and these are often hired out to other nations, particularly as guards, on account of their fidelity, and other good properties.

8. *Government.*—Each canton has a separate government, and distinct laws. There is also a diet, composed of members from all the inferior governments, which has the power of directing the general affairs of the whole state.*

9. *Manufactures.*—The manufactures of Switzerland are very limited. The principal are those of cotton goods, linen, and silk; and 250,000 watches are annually sent abroad for sale.

10. *Literature, &c.*—There is a university at Basil; and colleges at Geneva, Berne, Zurich, Lausanne, and Lucerne; and the people of all ranks are well educated and intelligent, according to their situation in life.†

11. *Religion.*—In some of the provinces, the Protestant religion is established: and in others the Roman Catholic. In Glarus and Appenzel, there is a mixture of both.‡

12. *Character, &c.*—The Swiss are sober, well conducted, and of great simplicity in their dress and manners.§ In general, they are robust and healthy; but in some places, particularly in the Vallais, many individuals have a swelling in the neck, which is called a *goitre.*

13. *Historical Sketch.*—Switzerland was conquered by the Romans under Julius Cæsar; and continued to be a Roman province, till the dismemberment of the empire in the fifth century. It was then overrun by the Alemanni, who exterminated a great part of the ancient inhabitants. After various political

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sides of the mountains are cultivated almost to the glaciers. The wealth of the country consists, in a great degree, in its cattle. Poverty, however, is very general; and causes great numbers to emigrate to the United States, to Canada, and to Brazil.

* 8. Hence it appears, that Switzerland, considered as a whole, is a republic. Of the cantons, some are purely democratic, the government being vested in the people, or their deputies; others are oligarchies or aristocracies, the supreme authority belonging to a number of the principal persons; and some are petty monarchies without the name, the supreme power being vested in an individual.

† 9. Switzerland, in proportion to its population, has produced a great number of learned and eminent men. Some of the most distinguished of these are Zuinglius, Conrad and Solomon Gesner, Turretine, the Bernoullis, Euler, Zimmerman, Haller, Rousseau, and Lavater.

‡ 10. The cantons of Lucerne, Uri, Schweitz, Underwalden, Zug, Friburg, and Soleure, are Roman Catholic; and have one archbishop, and six bishops. Zurich, Berne, Geneva, and Shaffhausen, are Protestant. To the Roman Catholic districts may be added the Vallais; and to the Protestant, the greater part of the Grisons. Among the Protestants, the form of church government is Presbyterian, and the prevailing doctrines are Calvinistic. For some time, however, Arianism and Socinianism have been embraced by a considerable number, particularly about Geneva.

§ 11. The dress of the inhabitants is, in general, very simple and graceful; and there is less difference between the higher and lower classes, in respect to dress, houses, and manner of life in this country, than in any other in Europe. The hour for dinner is generally twelve o'clock, and the times for the other meals are early in proportion.

changes, the country at length became subject to the house of Austria; and was governed by viceroys, who oppressed the people for their own aggrandizement. Under the regency of one of the worst of these, named Gesler, the country was freed from the Austrian domination, by the celebrated William Tell, in the year 1307. From that period, it continued independent, and enjoyed peace and prosperity, till it was subdued by the French in 1798 and 1799. After the final overthrow of Bonaparte, however, it was restored to its ancient condition; and in this state it continues at present.

Exercises on the Map of Switzerland.

What are the latitudes and longitudes of Berne and Geneva? What is the distance between the lakes of Geneva and Constance? What are the relative situations of Geneva and Lausanne?

XXII.—ITALY.

1. *Boundaries.*—Italy is bounded on the west and north by the Alps, which separate it from France, Switzerland, and Austria; on the north-east, by the Gulf of Venice, or the Adriatic Sea; and on the south-east and south-west, by the Mediterranean.*

DIVISIONS.	CHIEF TOWNS.
1. Kingdom of Sardinia:	
1. Piedmont and Nice . .	Turin, Vercelli, Nice
2. Dutchy of Montferrat .	Casale
3. Part of Milan	Novara

Questions on the Notes to Section XXI.

1. What is the extent of Switzerland?
3. What are glaciers? Describe the glacier of the Rhone. How are fissures in the glaciers occasioned? What are avalanches? What are their effects? Are similar effects produced by any other means? Describe the waterfall of Staubach.
4. How high are the lakes of Geneva and Constance? What are their dimensions? When are the lakes of Switzerland deepest, and what difference is there at different times? What are the depths of the lakes of Geneva and Constance? Describe the former.
5. What are the populations of the principal towns of Switzerland?
6. Describe the Vale of Chamouni, and the Valley of the Rhone.
9. Who were some of the most eminent men produced in Switzerland?
11. What is the character of the dress of the inhabitants? What is their hour for dinner?

* 1. The extreme latitudes of Italy are about 38° and 46½° north; and its extreme longitudes about 6° and 19° east. Its length, from north-west to south-east, is about 700 miles: its breadth at Naples is nearly 100 miles; at Rome, about 110 miles; from Venice to Genoa, nearly 200 miles; and farther north, it exceeds 300 miles. The surface is above 90,000 square miles.

DIVISIONS.	CHIEF TOWNS.
4. Genoa	Genoa, Savona
5. Savoy	Chamberry, Annecy
6. Island of Sardinia . . .	Cagliari, Sassari
II. Kingdom of Lombardy and Venice:	
1. Province of Milan . . .	Milan, Pavia, Mantua, Cremona
2. Province of Venice . . .	Venice, Brescia, Verona, Padua
III. Dutchy of Parma, Placentia, and Guastella . .	Parma, Placentia, Guastella
IV. States of Modena:	
1. Modena, Mirandola, and Reggio	Modena, Reggio
2. Dutchy of Massa & Carrara	Massa, Carrara
V. Lucca	Lucca
VI. Tuscany	Florence, Leghorn, Pisa
VII. State of the Church . .	ROME, Bologna, Ferrara
VIII. Republic of St. Marino	St. Marino
IX. Kingdom of Naples:	
1. Naples	NAPLES, Bari, Brindisi
2. Sicily	Palermo, Catania, Messina

2. *Islands*.—Besides Sicily and Sardinia, already mentioned, there are Corsica, Elba, the Lipari Isles, Malta, and several other islands of small consequence. The chief towns of Corsica are Bastia, Ajaccio, and Bonifacio; and the capital of Malta is Valetta.*

* 2. Corsica belongs to France; and its population is supposed to be 170,000. It has mountains from 7000 to 9000 feet high. It is now perhaps chiefly celebrated for having given birth to Napoleon Bonaparte.

Elba is situated ten miles from the shore of Tuscany. It recently acquired distinction, from having been erected into a principality for Bonaparte and his heirs, after his first abdication of the throne of France, and for having been his residence during a short period. It now belongs to Tuscany.

Malta formerly belonged to the knights of Malta; but was taken by the French, under Bonaparte, in 1798. It was afterwards taken by the British, after two years' blockade; and to them it now belongs. It was originally little else than a barren mass of freestone; but quantities of soil have been imported from Sicily and Italy, so as to render it fertile in a considerable degree. It contains nearly 100,000 inhabitants, which is a vast population for so small an island. It is chiefly valuable for its excellent harbours, and for the great strength of its fortifications.

The Lipari Islands will be mentioned hereafter, in the account of Naples.

3. *Seaports.*—Nice, St. Remo, Genoa, Leghorn, Civita Vecchia, Naples, Salerno, Taranto, Brindisi (anciently Brundusium), Bari, Manfredonia, Loretto, Ancona, Pessaro, Rimini, and Venice; also, in Sicily, Palermo, Messina, Catania, Syracusa, Girgenti, and Trapani.

4. *Face of the Country, &c.*—The surface of Italy is extremely varied. The Apennines extend from one extremity of the peninsula to the other, and spread over half the country. Between them and the Alps, there is the great plain of Lombardy, which is so flat, that for 200 miles there is not a rising ground.*

5. *Lakes.*—The chief lakes are those of Maggiore, Lugano, Como, and Garda, in the north, remarkable for their beautiful scenery.

6. *Rivers.*—The principal rivers are the Po, which passes Turin, and flows eastward into the Gulf of Venice; the Adige, which falls into the same gulf, north of the mouths of the Po; the Arno, which passes Florence, and flows into the Mediterranean; and the Tiber or Tevere, which, after passing Rome, falls into the same sea. The Po receives the Tanaro, Tessino, Adda, and many others.†

7. *Climate.*—The climate of Italy is in general very fine, and the sky delightfully clear. The heat, however, is in many places very oppressive in summer; and at that season, what is called

* 3. The Alps, through their whole course, present a continued series of precipices towards Italy. Their sides, however, to a considerable height, are in many places clothed with luxuriant woods, and rich vegetation. The Apennines are of various heights, from 4000 to nearly 8000 feet; and are not rocky, except in a few instances near their summits. Their lower parts are almost every where covered with fruit-trees, under the shade of which, crops of grain are brought to maturity. Higher up, there are forests of sweet chesnuts, which yield subsistence to a numerous population, at the height of some thousand feet above the sea; and the summits, in general, supply pastures for numerous flocks. Hence, while many of the lower parts of Italy are almost uninhabited, these elevated regions are extremely populous, and abound in towns and villages. For the sake of health, these are generally erected on eminences, where the air is better than in valleys; and thus, in connexion with the forests, they give a picturesque and beautiful appearance to the mountains.

† 4. The Po, and the other rivers which flow through the great plain of Lombardy, carry down from the mountains vast quantities of sand and earth, which gradually raise their channels above the level of the adjacent country, and lay the inhabitants under the necessity of forming large and expensive embankments to protect their grounds. The Po, in particular, has not only raised its bed many feet, since the days of the ancient Romans; but has made such depositions at its mouth, that it has extended the coast more than twenty miles into the Adriatic, beyond its position at that time.

the *malaria*, a species of noxious air or vapour, causes fevers, which carry off great numbers of the inhabitants.*

8. *Soil and Produce.*—Italy produces, in great abundance and excellence, grain and fruit of almost every kind that is to be found in any other part of Europe.

9. *Population.*—The population of Italy, including Sicily and Sardinia, is nearly twenty millions.

10. *Literature, &c.*—After the dark ages in Europe, the Italians were among the first that made any considerable advances in learning. Since that period, the country has produced men of eminence in almost every department of literature, science, and art; and in painting, the Italian artists have been peculiarly distinguished.†

11. *Religion.*—The religion of Italy is the Roman Catholic, which derives its name from Rome; where the pope, the head of the Roman Catholic Church, resides.

12. *Government.*—In all the states of Italy, except St. Marino, which is a republic, the government is absolute, and very little liberty is enjoyed by the people.

13. *Character, &c.*—The Italians, in general, possess fine natural taste, particularly in poetry, painting, and music; and they are polite, charitable, and contented.‡

14. *Curiosities.*—The principal curiosities are the remains of buildings, roads, and other works of the ancient Romans.

15. *Historical Sketch.*—Rome owed its origin to the erection of a number of mud cabins by banditti, under a leader called

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* 5. This terrible scourge of so fine a country, prevails chiefly in the low grounds, between the Apennines and the Mediterranean; and it has in late times, perhaps from want of proper draining, extended its ravages over many places that were formerly healthy and populous, and reduced them to deserts. On this account, the whole plain of Tuscany between the mountains and the sea, is neglected; as also the Campagna of Rome, and many other places. It is likewise felt, in some degree, at Naples, Ferrara, Pavia, and the north of the lake of Como; and Rome itself is beginning to suffer from its effects, so that the wealthy inhabitants annually retire to the higher parts of the country during the hot season.

† 6. Of distinguished Italians produced in modern times, it may suffice to mention Dante, Tasso, Ariosto, Petrarch; Torricelli, Galileo; Raphael, Titian, Michael Angelo, Carraccio, and Corregio. There are thirteen universities, among which are those of Rome, Florence, Padua, Bologna, Pavia, and Naples. Convents, however, are the principal places for education.

‡ 7. The character of the people of Italy appears to be much better and more amiable than it is generally represented; and delicacy and refinement of taste, in respect to painting, music, poetry, and architecture, are more general than in any other country, and exist even among the tradesmen and peasantry in a very considerable degree. The practice of assassination, once so prevalent and so much encouraged by the higher classes, seems happily to have yielded to better ideas and laws, particularly in Lombardy and Tuscany. In some places, however, particularly between Rome and Naples, there are numerous bands of robbers, who commit great depredations, and frequently murder travellers. These are so powerful, that thus far the civil authority has not been able, or has not ventured, to put them down; and they are so bold, that, when they capture a prisoner of consequence, they specify to his friends what ransom, lodged in a certain place, will procure his liberation; adding, at the same time, that, without the ransom, he will be put to death; and their demands are generally complied with.

Romulus, about 750 years before Christ. Above 200 years after, the government ceased to be a monarchy, and became a republic; and the territories of the state were gradually increased, till they comprehended all Italy. In three successive wars against Carthage, the Romans were successful; after the last of which, Carthage was totally destroyed, 147 years before Christ, and 117 years after the commencement of the first. These are the celebrated Punic wars, which are among the most remarkable on record. From this time, the Romans extended their conquests over every country in Europe, Asia, and Africa, that seemed worthy of their notice. The republican form of government was overturned by Julius Cæsar; and, from that time, the state became a monarchy under emperors. Constantine the Great partially removed the seat of government to Constantinople, about the year 330 of the Christian era; and, soon after, the Roman territories were divided into two empires,—the Western and the Eastern, the capitals of which were Rome and Constantinople. From this time, the Western began gradually to decline; and was at length overturned in 476, by numerous hordes of Goths and other barbarians, from the northern parts of Europe. During the long period that has since elapsed, Italy has been subject to so many revolutions and changes, and has been divided into so many parts of varying magnitude, that it would be impossible to give an outline of its history in a moderate space.

Exercises on the Map of Italy.

What are the latitudes and longitudes of Rome, Naples, Milan, Venice, and Palermo? At what different places do the Apennines approach nearest to the sea? Through what places will the shortest route from Nice to Venice pass? What is the general latitude of the Po? What parts of Italy have 12° of east longitude? How are Corsica, Sardinia, Elba, Sicily, and Malta, situated in respect to each other? How far is Rome from Naples? From Genoa? From Bologna? From Mantua? Measure the breadth of the Gulf of Venice at different places.

Questions on the Notes to Section XXII.

1. Between what latitudes and longitudes is Italy situated? What are its dimensions? Its content?
2. To what power does Corsica belong? What is its population? For what is it celebrated?
   To what state does Elba belong? For what has it been recently distinguished?
   To whom was Malta formerly subject? To whom does it now belong? How has it been rendered fertile? What is its population? For what is it valuable?
3. Of what height are the Apennines? What trees and crops grow on them? What contrast is there between them and many of the lower parts of Italy?
4. Why are embankments required in some parts of Italy? What changes have been produced by the Po since ancient times?
5. Where does the malaria chiefly prevail?
6. Who were some of the most eminent Italians of modern times? Name some of the universities. What are the chief places for education?
7. Where, principally, are the bands of Italian robbers? Give an account of them.

XXIII.—KINGDOM OF SARDINIA.*

1. *Situation.*—The continental part of the kingdom of Sardinia occupies the north-western part of Italy, as far as the Tessino; and a line drawn from it to the Mediterranean, a little east of Spezia.

2. *Chief Towns.*—TURIN, GENOA, Cagliari, Vercelli, Alessandria.†

3. *Climate, &c.*—The climate of Piedmont is mild and delightful. Savoy, from its situation, is colder, and is rather barren. Piedmont is extremely rich and fertile; producing grain, cattle, fruits, and vast quantities of silk.

4. *Population.*—The population of the kingdom of Sardinia is about four millions, of which the island of Sardinia‡ contains rather above half a million.

5. *Historical Sketch.*—The title of the sovereigns of this country was duke of Savoy till 1720, when the title of king of Sardinia was given to Victor Amadeus, for the services which he had rendered to the emperor of Germany, in the great war with France, about the succession to the crown of Spain. In the war that followed the French Revolution, the king was stripped of all his Italian territories. These were restored, however, by the congress of Vienna, and increased by the addition of Genoa.

XXIV.—KINGDOM OF LOMBARDY & VENICE.

1. *Situation.*—This kingdom, which belongs to the emperor of Austria, comprehends that part of Italy

* 1. After the foregoing general account of Italy, it may be proper to give some particulars of its more important parts.

† 2. Turin contains about 100,000 inhabitants, Genoa 80,000, Cagliari 25,000, Vercelli 20,000, and Alessandria 12,000. Genoa was an independent state, till the period of the French Revolution. After that event, it was conquered by France; but, in the territorial arrangements of Europe by the congress of Vienna, it was annexed to Sardinia. It had formerly considerable foreign possessions, and great commerce; and it made a conspicuous figure in the affairs of Europe, particularly during the crusades, and in its wars with Pisa and Venice. The discovery of America, however, and of the passage to India by the Cape of Good Hope, turned commerce into new channels, and greatly injured Genoa, and the other trading cities of Italy, which have in consequence lost much of their wealth and influence. The splendour of the public buildings, and of many of the private palaces in Genoa, is perhaps not surpassed in the world. Several of them are built entirely of marble, and the others are ornamented with marble portals and columns. The interior of these buildings is also equally magnificent; and they are decorated with tapestries, paintings, and statues. The general effect, however, is much injured by the narrowness and darkness of the streets.

‡ 3. This island is about 160 miles long, and 90 broad. It is said to be naturally fertile in a considerable degree; but it is thinly inhabited, badly cultivated, and, in many places, very unhealthy from noxious exhalations. It is greatly neglected by the king, who resides in Italy, and leaves it to be misgoverned by those under him; and the people are, in general, very rude in dress and manners, and very ignorant.

which lies north of the Po, and east of the Tessino.

2. *Chief Towns.*—MILAN, VENICE, Pavia, Mantua, and Verona.*

3. *Climate, Soil, &c.*—The climate is fine, and the soil uncommonly fertile. In the great plain of Lombardy, three crops of different kinds are, by proper culture, produced in the year. The pastures, which occupy above two thirds of the country, are peculiarly rich, and produce the celebrated Parmesan cheese.

4. *Population.*—The population of this kingdom is about four millions.

XXV.—TUSCANY.

1. *Situation, &c.*—This state, the sovereign of which is styled the Grand Duke of Tuscany, is situated along the coast of the Mediterranean, west of the State of the Church. Its principal divisions are Florence, Pisano, and Sienna; and it has a population of about one million three hundred thousand.

2. *Towns.*—The principal towns are FLORENCE or FIRENZA, Leghorn or Livorno, Pisa, and Sienna.†

* 4. For the population of the principal of these, see page 61. Venice, like Genoa, was formerly an independent state, with still more extensive foreign possessions. It had also great commerce and influence; but it has gradually declined from the same causes that have operated against Genoa; and, after having been conquered by the French in the late war, it was ceded, in 1797, by Bonaparte, to the emperor of Austria, to whom it still belongs. The city is built on 72 small islands, which are connected by 500 bridges. Of these, the Rialto is the most beautiful, and is entirely composed of marble. It contains also many other magnificent public and private edifices.

Milan is one of the finest and most splendid cities in Italy, containing a great number of large and beautiful buildings. It is very ancient, and has been forty times taken by enemies.

† 5. The population of Florence is about 80,000, of Leghorn 50,000, of Pisa 30,000, and of Sienna 20,000. Florence is very beautiful, having splendid buildings, and its streets being always kept remarkably clean. The Medicean gallery, in this city, contains one of the finest collections of paintings and statues in the world. The cathedral is also large and beautiful; and there are many other magnificent edifices, both public and private. Pisa had once a population of 150,000; and, like Genoa and Venice, had foreign territories and great power, particularly at sea. At the same period, Sienna was also independent, and had a population of 100,000. In Tuscany, the Italian language is spoken in its greatest purity.

Questions on the Notes [illegible] Sections XXIII. XXIV. & XXV.

2. What are the populations of the principal towns in the kingdom of Sardinia? Give an account of Genoa.
3. Give an account of the Island of Sardinia.
4. Give an account of Venice. How is it built? What is the Rialto? Give an account of Milan. How often has it been taken by enemies?
5. What are the populations of the principal towns of Tuscany? Give an account of Florence. Of Pisa. Of Sienna. Where is the Italian language spoken in its greatest purity?

XXVI.—STATE OF THE CHURCH.

1. *Situation, &c.*—The State of the Church, or the Ecclesiastical State, belongs to the pope. It extends from the Mediterranean to the Gulf of Venice; and lies between Tuscany, Modena, and the Po, on one side, and the kingdom of Naples on the other.

2. *Divisions.*—The principal divisions are the Campagna di Roma, the Patrimony of St. Peter, Urbino, Romagna Pontificia, Bolognese, and Ferrarese.

3. *Chief Towns.*—ROME,* Viterbo, Bologna or Bononia,† Ravenna, Ferrara, and Loretto.

4. *Climate, &c.*—The climate is not so fine as in the parts of Italy already described. The Campagni di Roma is so infested

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* 1. Rome, once the mistress and wonder of the world, still contains, even in its present reduced state, many fine buildings, and other objects, to interest and attract the traveller. The church of St. Peter is the largest and most magnificent edifice ever erected, either in ancient or modern times, for the purposes of religion. Its interior length and breadth are 609 and 445 feet; the height of the interior pillars is 178 feet; and the entire height, to the top of the cross, 458 feet. Its erection occupied 111 years, under eleven successive popes, and it cost the enormous sum of about £12,000,000 sterling. The pope's palace, called the Vatican, is of immense size; containing, it is said, 12,500 apartments. The city contains also about 300 other churches, and the remains of 19 pagan temples, theatres, and amphitheatres; besides aqueducts, obelisks, and other splendid monuments of the grandeur of Pagan Rome. The magnitude, wealth, and magnificence of the ancient city, indeed, can scarcely be conceived. In the days of Valerian, about the middle of the third century, it was fifty miles in circumference, and had a population, according to some, of several millions; but, after all reasonable deductions, of at least a million and a half. It contained 700 temples, 5 theatres, 2 amphitheatres, and 7 circuses. The largest circus had seats for 300,000 spectators, and the Flavian amphitheatre was capable of containing more than 100,000 individuals. Between the years 408 and 552, however, during the decline of the Roman power, the city was taken and plundered ten times, immense numbers of its inhabitants were destroyed by famine and the sword, and much of it was burned. In subsequent times, it once more attracted notice as the seat of the popes, who were the heads of the Christian religion as professed in Italy and the west of Europe, and who claimed the power of deposing kings, and giving away kingdoms. By this means, it became enriched by revenues from various quarters, and held a conspicuous station for many centuries. The power of the popes was much abridged, however, by the Reformation, and other causes; and Rome has made no approach, in modern times, to its ancient greatness. At present, its population exceeds 130,000.

† 2. Bologna has a population of about 65,000. It has a very ancient university, which was formerly the most famous in Europe.

Questions on the Notes to Section XXVI.

1. What are the dimensions of the church of St. Peter? What period was occupied in its erection? What did it cost? How many apartments are said to be in the Vatican? How many churches are in Rome? What remains are there of ancient Rome? What was the population of the city in the time of Valerian? What remarkable public buildings were in it? How many people were some of them capable of containing? How often was it plundered, and what other calamities did it suffer? What cause tended to restore it to notice in modern times?
2. What is the population of Bologna? What rank did its university once hold?

by the *malaria*, that most of it, though extremely fertile, is uninhabited.

5. *Population.*—The population is upwards of two millions.

XXVII.—KINGDOM OF NAPLES.

1. *Situation, &c.*—Naples is bounded on the northwest by the State of the Church, and on the other sides by the sea. The adjoining island of Sicily belongs also to the king of Naples; and he is sometimes styled the king of the Two Sicilies.

DIVISIONS.	CHIEF TOWNS.
Terra di Lavoro	NAPLES
Principato Citerior . . .	Salerno
Principato Ulterior . . .	Benevento
Abruzzo	Aquila, Chieti
Molisa	Isernia
Capitanato	Manfredonia
Terra di Bari	Bari
Terra di Otranto . . .	Otranto
Calabria	Cosenza, Rheggio, Cirenza
Sicily	PALERMO, Catania, Messina, Syracusa

2. *Face of the Country, &c.*—The chain of the Apennines extends through Naples to its extremity at Cape Spartivento. The most remarkable mountains, however, are the volcanoes of Mount Vesuvius, six miles from Naples, and Mount Etna or Gibello, in Sicily.*

* 1. To these volcanoes may be added some in the Lipari isles. These islands, which also belong to Naples, are north of Sicily; and all seem to be of volcanic origin. One of them, named Stromboli, presents a continual eruption of flame, and has on this account been called the Light-house of the Mediterranean; while Vulcano, another of the same group, is perpetually throwing out large volumes of smoke.

The first eruption of Mount Vesuvius, on record, happened in the seventy-ninth year of the Christian era; and, since that time, there have been about thirty others. The first eruption was accompanied by an earthquake, and overwhelmed Herculaneum, Pompeii, and other towns. Herculaneum and Pompeii, after being thus buried for more than 1600 years, were discovered during the last century; and their ruins have exhibited curious and valuable remains of antiquity, such as buildings, statues, paintings, ornamental and useful furniture, and manuscripts.

Mount Etna has been known to be a volcano for nearly 3000 years, and it may have been so much longer. This mountain has been divided by travellers into three regions; the Cultivated, the Woody, and the Desert. The whole sloping ascent is stated at 30 miles, of which the Cultivated Region occupies a zone of 15

3. *Chief Towns.*—NAPLES, PALERMO, Catania, Messina, and Bari.*

4. *Population.*—The population is supposed to be nearly seven millions, of which a fourth part belongs to Sicily.†

5. *Curiosities.*—Among the numerous curiosities of this king-

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miles in breadth, all around the base of the mountain. The surface of this region is supposed to be 1500 or 2000 square miles; and to contain 77 towns and villages, with 100,000 inhabitants. It is very warm, and uncommonly fertile. Its surface is diversified all around by great numbers of conical hills, formed by eruptions of lava through the places where they stand. To this region succeeds the Woody, which is seven or eight miles broad, and has a surface of 300 square miles. This division is of moderate heat; and is covered with vast numbers of fine trees, particularly chesnuts, oaks, beeches, and hawthorns. There is one chesnut tree in particular, the girt of which is 204 feet at the ground: there are also several others of the same species 70 or 80 feet round; and some of the oaks are 40 feet in circumference. The rest of the mountain, comprehending the part of it which is above 9000 feet high, is the Desert Region. This is covered with perpetual snow, and is in general nearly flat, except where the lofty summit of the mountain rises from its centre. The cold is extreme, and its effects are rendered greater by piercing winds. The snow found here is exported in large quantities to Italy and Malta, for cooling liquors, and other purposes; and produces a considerable revenue to the bishop. The crater, or opening in the summit of the mountain, resembles a funnel or inverted cone, nearly three miles in circumference, and of vast depth. This is continually smoking; and loud noises, like the firing of artillery, are heard within. Before eruptions, the noises increase, and smoke issues forth in immense quantities. This smoke is highly electrical, and flashes of lightning dart from one part of it to another. It is often carried by the wind to great distances, sometimes 50 or 100 miles, and is so heavy, that it sinks down to the surface of the ground. It is also hot, and full of pestilential vapour, which frequently kills men and animals, blasts trees, and sets fire to houses. At the same time, showers of ashes are often thrown from the crater; earthquakes are produced; and red hot stones, frequently of vast size, are thrown to the height, it is said, on some occasions, of 6000 or 7000 feet. After these convulsions have continued for three or four months, the lava begins to issue from the top of the mountain, or from some opening that it has burst in the side. The mountain then becomes comparatively quiet; and the lava, a stream of melted minerals, rolls down towards the plains, overwhelming and destroying every thing in its course. The eruptions, however, are extremely varied in their phenomena and effects; sometimes consisting of fluid lava, sometimes of great showers of sand or ashes, and sometimes even of prodigious torrents of boiling water. Great injury is often done by the overwhelming of towns, farm houses, and cultivated grounds. In 1669, the habitations of 27,000 persons were destroyed, and the greater part of the town of Catania was overwhelmed. This town had previously been subjected to a still greater calamity in 1169, when 15,000 individuals lost their lives. The entire number of eruptions on record is above thirty, and there may have been several others.

* 2. The population of Naples is about 400,000, of Palermo 130,000, of Catania and Messina 45,000 each, and of Bari 30,000. Naples is far the largest city in Italy; and, though it has nothing to equal some of the splendid architectural ornaments of Rome, it is better built as a whole, and contains better private houses. The bay is celebrated for its great beauty, and the fine appearance of the country around it. The towns of Naples and Sicily often suffer dreadfully from earthquakes. In 1693, Catania was almost totally destroyed in this way, and 18,000 of its inhabitants were swallowed up, or buried in its ruins. In 1783, also, Naples and Sicily were visited by a great earthquake, in which 40,000 persons lost their lives; and the greater part of Messina was laid in ruins.

† 3. There is reason to believe, that in ancient times Sicily contained five millions of inhabitants; and it was then a place of great importance. The present reduced amount of its population, and its degraded state in other respects, are supposed to arise from the oppressed condition of the country, which renders the people poor and lazy. By this means, so wretchedly is the island cultivated, that, notwithstanding its extreme fertility, which has been celebrated since the earliest times, and which caused it to be called the granary of ancient Rome, it does not produce sufficient food for even its present population, but is obliged to import corn.

dom, besides Etna and Vesuvius, may be mentioned the ruins of Herculaneum and Pompeii, and the remains of ancient Roman ways, parts of which remain strong and good, after the lapse of two thousand years.

XXVIII.—MINOR ITALIAN STATES.

1. PARMA, PLACENTIA, and GUASTELLA, form a dutchy, which has belonged, since 1814, to Maria Louisa, daughter of Francis, emperor of Austria; and which is to descend to her son by Bonaparte, to whom she was married in the days of his power. This state lies south of the Po, and east of the Sardinian territories; and has a population of about 400,000. The chief towns are PARMA and Placentia or Piacenza, the former of which has a population of 40,000, and the latter of 25,000.

2. MODENA is another dutchy, situated south of the Po, between the dutchy of Parma and the State of the Church. It has also a population of about 400,000. The chief towns are MODENA, Reggio, and Mirandola, the population of none of which much exceeds 20,000.

3. The DUTCHY OF LUCCA lies north-west of Tuscany, along the shore of the Mediterranean. It is a small territory, containing about 130,000 inhabitants. The capital is of the same name, and has a population of about 25,000. Lucca was a republic, till it was conquered by France in the late war. By the congress of Vienna, it was converted into a dutchy, and given to the widow of the late duke of Parma.

4. ST. MARINO is a small republic, about ten miles round. It lies near the Gulf of Venice, and is surrounded by the dominions of the pope. The territory consists of one mountain, and the entire population is about 7000. It has been an independent republic for 1300 years.

Questions on the Notes to Section XXVII.

1. What other volcanoes are there near Sicily besides Vesuvius and Etna? Give an account of them.
   When did the first recorded eruption of Vesuvius happen? How many have there been since? Give an account of the first eruption, and its effects. What have the ruins of Herculaneum and Pompeii exhibited?
   How long has Etna been known to be a volcano? How has it been divided? What is the entire sloping ascent of the mountain? Describe the Cultivated Region. The Woody. The Desert. What is done with the snow found here? What is the crater? What precedes eruptions? Of what kind is the smoke? What substances are thrown from the crater? What is lava? When does it begin to flow from the mountain? Give some instances of the injury done by eruptions. How many eruptions are on record?
2. What are the populations of Naples? Palermo? Catania? Messina? Bari? Give an account of Naples and its bay. Give instances in which towns of Naples and Sicily have suffered from earthquakes.
3. What population did Sicily probably contain in ancient times? What occasions the smallness of its present population? What is its present state?

Exercises on the Map of the Italian States.

How are Rome, St. Marino, and Florence, situated in respect to each other? And how Milan, Genoa, and Parma? Which of the Italian states have sea on both sides of them? Whether has Turin or Venice the higher latitude? How does Sicily lie in respect to Rome?

XXIX.—TURKEY IN EUROPE, INCLUDING GREECE.

1. *Boundaries.*—Turkey in Europe, including Greece, is bounded on the north by the Austrian and Russian territories; on the west and south-west, by Dalmatia, the Gulf of Venice, and the Mediterranean; and on the east* and south-east, by the Black Sea, the Sea of Marmara, and the Archipelago, with the Straits of Constantinople and the Hellespont.†

DIVISIONS.	CHIEF TOWNS.
Moldavia ‡	Jassy or Yassy, Galatz
Walachia	Bukarest, Tergovist
Croatia (Turkish) . .	Bihatsk
Bosnia	Bosna Serai or Serajevo, Banjaluka
Servia	Belgrade, Semendriya
Bulgaria	Sophia, Silistria, Widin, Nicopoli, Shumla, Varna
Herzegovinia	Mostar
Albania	Durazzo, Avlona or Valona, Suli
Roumelia, N. E. part .	CONSTANTINOPLE, Adrianople, Philippopoli or Filibe
Roumelia, S. part .	Salonica, Larissa, Janna or Yanina or Joannina, Atini or Athens, Livadia, Lepanto
Morea	Tripolitza, Napoli di Romania, Corinth, Arcadia, Navarin, Modon, Mistra, Patras

* 1. The Prut and Danube now form the north-eastern boundary of Turkey, Bessarabia having been ceded to Russia in 1812.

† 2. This division of Europe is situated between 35° and 48° of north latitude, and between 16° and 30° of east longitude. Its length, from Cape Matapan in the Morea, to the north of Moldavia, is about 800 miles; and its greatest breadth, in a perpendicular direction, is above 600. Its content is supposed to be nearly 200,000 square miles.

‡ 3. Moldavia and Walachia have long been rather nominally than really under the Turkish government, the Grand Seignior merely appointing the chief ruler of each, who is called a Hospadar, and who is always a Greek of the noble families

2. *Islands.*—The principal islands on the west and south of Turkey are Corfu, Santa Maura or Lefcathia, Theaki, Cefalonia, Zante, and Cerigo. On the south-eastern side, there are vast numbers of islands, most of which are in the Archipelago. The chief of these are Candia, Cyprus, Negropont, Rhodes, Metelin, Scio, Samos, Scarpanto, Milo, Santorini, Naxia, Paros, Antiparos, Patmos, Andro, Skyro, Stalimene or Lemnos, Samothraki, Hydra, and Spetzia.*

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that pretend to trace their descent to the Greek emperors. This situation is uniformly obtained by bribery, and is held for only a short time. The people are governed by ancient feudal laws, which are very corruptly administered by their magistrates. The population of Walachia is about a million, and that of Moldavia about 600,000.

* 4. Of the above-mentioned islands, Corfu, Santa Maura or Lefcathia, Theaki, Cefalonia, Zante, and Cerigo, with Paxu, and Antipaxu near Corfu, constitute the new republic of the Ionian Islands. These formerly belonged to Venice; but, in the war that succeeded the French Revolution, they fell into the hands of the French. After this, they changed protectors, or rather masters, several times in a few years; having been successively under the power of Turkey, Russia, and England. At length, in 1815, they were erected into an independent state, under the protection of Great Britain; and have since enjoyed a degree of peace, prosperity, and happiness, before unknown. A lord high commissioner is appointed by the British government to reside there, with certain powers; and the king of England has the right of occupying the fortresses. The population of these islands is estimated at 220,000; of which Corfu and Cefalonia contain about 70,000 each, and Zante about 40,000. They produce olive oil, and wine, with figs and other fruits. Theaki is generally supposed to be the ancient Ithaca, which belonged to Ulysses. The town of Zante contains 16,000 inhabitants, and that of Corfu 12,000. Corfu is at present the chief seat of Greek literature; and has a university, which was opened in 1824, and is likely to be of the greatest advantage to Greece at large.

With respect to the other islands above enumerated, it would be improper, in a work like the present, to give any thing except a few detached particulars regarding some of the more important and more interesting.

Candia, anciently Crete, is 180 miles long and 40 broad. Its population is thought to have been from one to two millions in ancient times; but it is now reduced, under the tyranny of the Turks, to about 350,000. It is a delightful island; having a serene healthy climate; and producing, in great abundance, all the necessaries, and many of the luxuries of life. The subterranean labyrinth, famous since the earliest times, still remains; and contains such a vast number of mazes, that the person who visits it, is obliged to unwind a line of 400 fathoms, fixed at the entrance, to enable him to find his way out, after having examined its various parts. In early times, the island was rich and happy; but it has since been successively subjected to the Romans, Saracens, Venetians, and Turks; and from all of them, except the Venetians, it has suffered great desolation and oppression. The tyranny exercised by the Turks, however, on the present inhabitants, is far beyond that of all the others; and is such as effectually to break the spirit and energies of the people, and to reduce them to the condition and character of slaves. The chief town, which is also called Candia, was large and flourishing before the island came under the Ottoman power; but it now contains only about 14,000 inhabitants. This town is celebrated for its siege by the Turks, which is one of the most memorable recorded in history. It continued during the long period of twenty-four years, and terminated in 1669 by the capture of the city, after the Venetians had lost 80,000 men in its defence, and the Turks 180,000 before its walls.

Cyprus, and some other islands mentioned above, belong rather to Asia, from their nearness to its shore. They may properly be taken with the others, however, as forming part of the same groupe.

Cyprus is naturally a fine island, about 160 miles long and 70 broad. The southern side is very hot, while the northern is mild. This difference is produced by a chain of mountains, which runs through the middle of the island. In modern

3. *Gulfs.*—The principal gulfs are those of Lodrino, Arta, Lepanto, Coron, Colokythia, Napoli, Egina (sometimes called Engia), Salonica, Cassandria, Mount Athos or Santo, Contessa, Saros, and Burgas.

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times, Cyprus has been successively possessed by the Saracens, Venetians, and Turks. The last of these powers conquered it in 1570; and, by their tyranny, they have reduced one of the finest islands of antiquity to a melancholy state of wretchedness. Dr. Clarke forcibly characterizes it thus: "Agriculture neglected—inhabitants oppressed—population destroyed—pestiferous air—contagion—poverty—indolence—desolation." The situation of governor is annually given to the highest bidder; and the person appointed, remunerates himself by exactions from the miserable inhabitants. From these causes, the population is thought to be only about 60,000. The inhabitants are remarkable for beauty of face and figure, particularly the females. The chief town is Nicosia.

NEGROPONT, anciently Eubœa, is the largest island in the Archipelago, [illegible]s been joined by a bridge to the mainland.

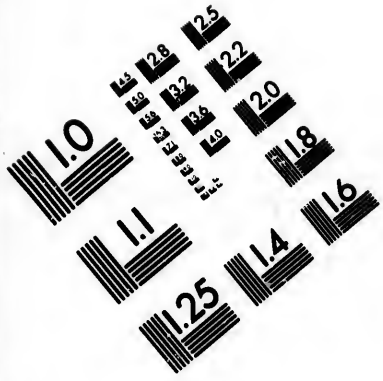
RHODES was anciently a fine island, of much value and consequence; but it has dwindled into insignificance under the chilling influence of Turkish oppression, and has now only about 30,000 inhabitants. The Colossus of Rhodes has been much celebrated. This was a brazen statue of Apollo, nearly 130 feet high. It was erected about 300 years before Christ; and its feet are said to have stood on the moles that formed the entrance of the harbour of Rhodes, the chief town, so that ships sailed between its legs. A winding stair ran inside of it to its summit, whence there was an extensive prospect. After standing between fifty and a hundred years, it was overturned by an earthquake; and, about nine hundred years after, the metal of which it was composed, was sold by the Saracens to a Jewish merchant. Some parts of this account are considered inaccurate, particularly what regards its original position, as, if so placed, it must have fallen into the sea when overturned; and it is rather thought to have stood at some distance from the harbour.

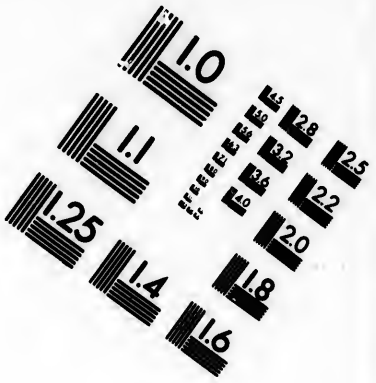
METELIN, anciently Lesbos, has a population of about 40,000, composed of Turks and Greeks, in nearly equal numbers. The law of succession to property in this island, in families where there are daughters, is very remarkable. Formerly, all the property of the family fell to the eldest daughter on her marriage; while the other children, and even the parents, were left in indigence. Lately, however, the patriarch of Constantinople, and the clergy of the island, have got the law so modified, that the eldest daughter gets a third of the property, the second a third of the remainder, the next a like part of what then remains, and so on whatever may be their number.

PAROS, one of the ancient Cyclades, is noted for the beauty and fineness of its marble, which has been so much used for statues.

Within a mile of Paros is ANTIPAROS, a small island, 16 miles round, celebrated for its beautiful grotto or cavern. The part of this that has been explored, is nearly 1000 feet long, above 300 broad, and at its lowest part it is more than 250 feet below the surface of the earth. This grotto, though its wonders have perhaps been exaggerated by early travellers, is remarkably beautiful. Columns composed of calcareous matter, formed into numberless minute sparkling crystals, extend from the floor to the roof; and stalactites, or pieces of the same matter, like large icicles, hang suspended from the roof in immense numbers. Both these and the columns are supposed to be formed by water, which has calcareous matter dissolved in it, oozing down from above; and the water being evaporated, incrustations of the matter are gradually formed. Where the water descends more copiously, the stalactites are supposed to fall down by their own weight, and thus gradually to give origin to the columns. Sometimes also the columns seem to have their origin from the drops falling on the floor, and there forming gradual depositions of the lime. The columns, in this progressive state of formation, have often the appearance of trees; and thus, at first sight, seem as if they were petrifications of organized vegetable matter. The floor and sides of the cavern are also said to present beautiful masses of marble of various colours, and of such appearance as to seem like trees and rivulets converted into stone.

The island of SCIO has a delightful climate, and possesses great facilities for commerce. Its inhabitants, who were in general Greeks, had in late times improved these advantages, and had become so wealthy as to be able to buy off the active interference of the Turks, and virtually to govern the island themselves. A college was also established, which contained six or seven hundred students, and was the





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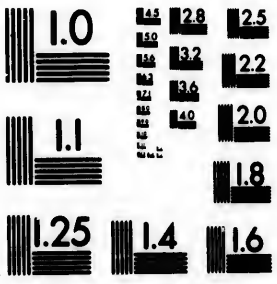

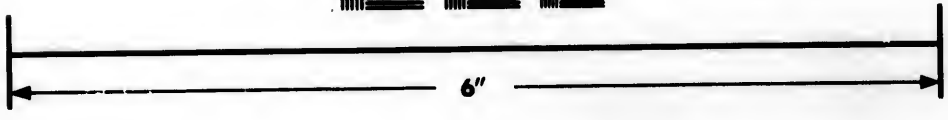

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4. *Seaports.*—The chief ports are Durazzo, Avlona, Prevesa, Messolunghi, Lepanto, Patras, Navarin, Napoli di Romania, Hydra (on an island), Tricheri, Salonica (anciently Thessalonica), Gallipoli, Constantinople, and Varna.

5. *Peninsulas, &c.*—European Turkey contains several peninsulas. The principal is the Morea, which is joined to the mainland by the Isthmus of Corinth.*

6. *Face of the Country.*—The Carpathian mountains form part of the boundary. Another chain extends from Dalmatia towards the Sea of Marmara, and gives off a branch called Hæmus, or the Balkan Mountains, which terminates at the Black Sea. Other branches extend from it, on the southern side; and there are many mountains in the Morea, and the rest of Greece.†

7. *Rivers.*—The Danube flows upwards of 400 miles through this country; passing Belgrade, Widin, Oreava, Kirsova or Hirsova, Izmail, and other towns; and falling, by several mouths, into the Black Sea. This river receives also, in its course through Turkey, the Aluta, Sereth, Prut, &c. on the northern side; and the Morava, Esker, and others, on the southern.

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chief seat of learning among the Greeks. All the prosperity and happiness of the island, however, are now no more. In 1822, soon after the commencement of the Greek insurrection, it was attacked by the Turks on the slightest pretexts, and deeds of cruelty were perpetrated that can scarcely be equalled in the annals of war. Of 130,000 inhabitants, about 25,000 were butchered in the island; and 30,000 women and boys were carried off, and sold as slaves. Of those who escaped immediate death by the sword, some were made prisoners, and executed; some escaped to other islands, destitute of every means of support; others wandered about the country, till most of them died of wounds, famine, exhaustion, or broken hearts; and only a few hundred miserable fugitives remained alive in the island, out of all its former happy population. Lately, however, a pasha has been appointed, whose kindness and humanity had long rendered him a favourite with the Greeks in Asia Minor; and the population had increased so rapidly, by an influx from different quarters, as to amount, in 1825, to 15,000.

* 5. This isthmus is rocky, and is about six miles in breadth. The Morea is said to be so called from its resemblance to a mulberry leaf, which is the signification of its name; and its southern point, Cape Matapan, is so named from a Greek word signifying the *forehead*.

† 6. The habitable districts of Greece consist principally of large distinct valleys, almost surrounded by mountains; and hence Dr. Clarke has compared them to saucers with broken lips, placed on a table. Turkey is of rather a mountainous character, abounding however in delightful plains and valleys. To the north-west of Constantinople, in particular, there is a plain country of great extent; and about the Black Sea, there are many level districts.

8. *Towns.*—The principal towns are CONSTANTINOPLE, Adrianople, Sophia, Bukarest, Silistria, Bosna Serai, Salonica, Hydra, Yanina, Jassy, Belgrade, and Larissa.*

9. *Other Dominions.*—Besides the European territories already pointed out, the Turkish Empire consists of Turkey in Asia; and a nominal subjection is also rendered by Egypt, and some of the states of Barbary.

10. *Climate, &c.*—The climate is in general excellent, and the soil naturally very fertile, except in the mountainous districts. It is, however, badly cultivated, and the produce is vastly less than it might be under a proper system of agriculture.

11. *Produce.*—Rice, wheat, grapes, figs, olives, oranges, and other fruits, are the chief productions of the country; and there are rich pastures, particularly in the north.

12. *Population, Army, &c.*—The population is supposed to be about eight millions; but there is no certainty with respect to its amount. The army that can be brought into the field, in the time of war, amounts, both for this country and for Asiatic Turkey, to 150,000 or 200,000 men.† The navy consisted of 20 or 30 ships of the line, prior to the battle of Navarin in 1827; but the greater part of it was then destroyed by the English, French, and Russians.

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* 7. Constantinople is supposed to have 400,000 inhabitants; Adrianople, above 100,000; Sophia, 70,000; Bukarest, Silistria, Bosna Serai, and Salonica, each 60,000; Hydra and Yanina, 40,000 each; Jassy, 30,000; and Belgrade and Larissa, each about 25,000. Constantinople, called Stamboul by the Turks, was built by the Roman emperor, Constantine the Great, on the site of the ancient Byzantium. Its situation, both for beauty and for the purposes of commerce, is perhaps not surpassed. The external appearance of the city is remarkably fine. It is built on seven hills, which rise one above another in beautiful succession; while their summits are crowded with innumerable mosques and baths, intermixed with lofty cypresses; and their declivities are covered with terraced streets. The houses also are painted of different colours; and the general magnificence of the effect is increased by the numerous gilded domes, and the beautiful slender minarets, crowned with shining crescents, that every where meet the view. On entering the city, however, the traveller's expectations are altogether disappointed; the streets being in general narrow, badly paved, and dirty in the extreme. Scavengers are unknown; and their office is performed by dogs, vultures, and rain. No dwelling-house is allowed to be more than twenty-six feet high; and hence the streets have a mean appearance. The houses are generally of wood; and, on this account, conflagrations are very frequent; and, from the dryness of the climate, very destructive. So much afraid are the people of such occurrences, that, on retiring to sleep, they put their most valuable effects into a casket, which is placed on a table, that in case of alarm it may be hastily carried off; and, for the same reason, the females sleep with their most valuable ornaments on their persons. The burying-grounds of Constantinople are as large as the city itself, two persons never being interred in the same grave. The wealthy Turks, however, wish rather to be buried on the Asiatic side; as they think that Constantinople will one day be taken by the Christians, and they dread the indignity of having their dust trampled on by infidels.

† 8. In 1362, the sultan Amurath established the famous military bands of infantry, called janizaries, composed at first of Christian slaves, educated in Mohamme-

13. *Government.*—The sultan, or Grand Seignior, as he is often styled, is an absolute prince; the only restraint on his will being the laws of the Koran, and the fear of exciting rebellion.*

14. *Manufactures and Commerce.*—The manufactures of Turkey are chiefly those of carpets, silks, and Turkey leather. The commerce of the country consists principally in these articles, and in its produce in the natural state, particularly drugs and fruit.†

15. *Literature.*—The chief object of education among the Turks, is to learn to speak their native language with purity and ease, and to become acquainted with the laws and religion of the country, as contained in the Koran, and in the comments on it by their more distinguished writers. The country has produced several poets; but science and general literature are in the most backward state.

16. *Religion.*—The established religion is Mohammedanism; but nearly two thirds of the population are Christians of the Greek church.‡

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danism from their infancy. These have been the most formidable part of the army in foreign warfare; and they have often mutinied, and have sometimes even deposed the emperor. In 1826, the body was dissolved in consequence of a revolt. In former times, the Turkish army far exceeded the amount stated above. In 1774, however, it required considerable efforts to bring 140,000 into the field; and, since that time, the power of the empire has suffered a still farther decline. The janizaries amounted to about 40,000; and they were quartered in Constantinople, and had peculiar privileges. Besides these, there were others over the empire, who got themselves enrolled as janizaries, that they might enjoy the like privileges; so that the entire nominal amount might be about 100,000.

* 9. The power of the emperor is considerably limited by the Koran, and by the recognised commentaries on it by some learned Mohammedans. Still, however, he frequently exercises the most arbitrary and despotic power in depriving of life or office, and in seizing property, unless it belong to the Mohammedan church. Such acts have often excited rebellions, and terminated in the death or dethronement of the sultan; and hence the fear of the revolt of powerful chiefs, forms a strong check on the conduct of the reigning prince. The chief persons under the emperor are the grand vizier, or prime minister; viziers, or pashas, of three tails (that is, having three horses' tails for standard); begierbegs, or viceroys of several provinces, with inferior pashas, or governors of towns or districts, under them; the reis-effendi, or secretary of state; and the agas, or commanders of the forces. The grand vizier, being next in power to the emperor, is often sacrificed to satisfy the people, when they become discontented, even though the fau[illegible] not have been his. The divan, or council of state, meets on Sundays and Thu[illegible] in the palace; and is attended by the chief officers above mentioned, and by [illegible]l others. The sultan is in an adjoining apartment, to hear what passes; but takes no part in the proceedings. It may be remarked, that the Turkish governors are all absolute in their respective situations; and, in almost all instances, exercise great oppression over those that are subject to their authority, endeavouring to enrich themselves by the severest exactions, as they know the uncertain nature of their situations.

† 10. The British commerce with Turkey is carried on principally by the Levant or Turkey Company, instituted by Elizabeth in 1581. This company is now open to any British subject, on paying £20. The principal articles exported are cloth of every kind, colours, lead, pewter, and pepper.

‡ 11. The Mohammedan or Mahometan religion derives its name from its founder Mohammed, Muhammed, or Mahomet, the celebrated Arabian impostor. The articles of belief in this religion are contained in the Koran, a book left by Mohammed; and the chief of them are, that there is but one God, and that Mohammed is his prophet; that men ought to observe bodily purifications, and pray to God five

17. *Character.*—The Turks, in obedience to the precepts of their religion, are charitable. They are indolent in their habits; and they detest persons of other religions, whom they often treat in the most perfidious and cruel manner. In other respects, their moral conduct is in most instances good.

18. *Manners, &c.*—The Turks spend much of their time in the bagnios or public baths; the men meeting there, in great numbers, at one time, and the women, in their finest dresses, at another. The men shave their heads, but wear long beards; and their clothes are long loose garments, fastened with a girdle. Their head-dress is a white turban, which they constantly wear, except when in bed. The women are much confined, being seldom allowed to leave the harem, or part of the house appropriated to themselves. When they do go out, they are so veiled and muffled, both as to face and figure, that they cannot be known even by members of their own family. Both men and women sit, eat, and sleep on the floor on cushions or sofas, mattresses, and carpets.

19. *Historical Sketch.*—Greece was the most celebrated nation of ancient times, for early civilization, and great progress in knowledge. Its successful resistance against the whole power of Persia, in the reigns of Darius and Xerxes, nearly 500 years before Christ, is justly regarded as the most noble struggle for national independence ever displayed. Philip, king of Macedon, and his son, Alexander the Great, reduced all Greece under their power, between 300 and 400 years before Christ; and Alexander totally overturned the Persian empire, that had formerly threatened the very existence of Greece. The Grecian states were afterwards invaded by the Romans, and were finally reduced under their power, about 150 years before Christ. The

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times each day with their faces turned towards Mecca; that they ought to give alms to the poor, and fast during the month Ramadan; and that they should, if possible, go in pilgrimage to the temple of Mecca. The Mohammedans also believe in predestination, and are allowed to have any number of wives not exceeding four, besides concubines. The descendants of Mohammed himself are permitted to have any number of wives and concubines they may choose; and the grand Seignior has generally from one to two thousand. Friday is set apart for the worship of God, as Sunday is among the Christians. During the fast of Ramadan or Ramezan, all persons are obliged to fast from sunrise till sunset; and they are not allowed to wash their mouths, or even their faces, lest they should thus have any refreshment. During the night, the restrictions are removed; when those who are religious eat sparingly, but persons of less sanctity make ample amends for the privations of the day. From the nature of their calendar, which is regulated by the motions of the moon, the month Ramadan, as well as all the others, happens at different seasons of the year; and when it occurs in summer, the people suffer greatly from thirst. This fast is immediately followed by the festival of Bairim, which continues three days, and is a scene of universal revelry and joy. The use of wine is prohibited by the Koran. Numbers of persons, however, indulge freely in the use of it, and of strong liquors, in private; and many produce intoxication by the use of opium.

The chief dignitary of the Mohammedan church in Turkey, is called the mufti; and he has a considerable connexion with the politics of the empire. Next to him are the moulahs, or expounders of the Koran; and the officiating clergy are called imaums. There are also four orders of monks, who are called by the general name of dervises.

division of the Roman territories, in the fourth century, after the time of Constantine the Great, gave origin to the Eastern or Greek Empire, which, under a succession of monarchs, who were generally weak, and often vicious, continued to drag out, for more than 1000 years, a separate political existence, often in a state of anarchy, and always of misgovernment. Many of its provinces were conquered by the Saracens, in successive wars, from the time of Mohammed, for a long period; and its power was gradually diminishing. In the year 1038, the empire was first attacked by the Turks, a tribe originally from the neighbourhood of Mount Caucasus in Asia, who had been gradually emerging from their primitive obscurity during the mutual dissensions of the Saracens, and had embraced the Mohammedan religion. About 1230, the Turks assumed the name of Othmans or Ottomans, from Othman, their leader and sovereign, under whom they had great success. In 1352, they first crossed the Hellespont, to attack the European territories of the empire; and in 1360, Amurath made Adrianople the capital of his dominions, instead of Boorsa in Asia, which had held that place from the time of Othman. Amurath was succeeded by his son Bajazet. The latter, who was one of the most warlike of the Ottoman princes, made himself master of most of the present Turkish dominions in Europe; and, in 1394, laid siege to Constantinople, which, after various attempts, he was prevented from taking, only by being obliged to go into Asia, to defend his dominions there, against an invasion by the celebrated Tartar conqueror, Timour or Tamerlane. In a tremendous battle which ensued in 1402, on the plains of Angora in Natolia, and in which 340,000 of the combatants are said to have fallen, the Turks were totally defeated, and lost their sovereign, who was made prisoner, and died a few months after.* The Turks soon recovered from the check thus sustained; and in 1453, under Mohammed II. they took Constantinople by storm, after a long siege. The emperor Constantine XV. perished in the final assault; and with him terminated the Eastern Empire, the last remnant of the ancient Roman power. Mohammed immediately made Constantinople the capital of his dominions, and reduced the Greeks to a state of slavery. He and his successors long carried on wars against the Christian powers, and often with great success. So alarming, indeed, was their progress, that Vienna was twice besieged; first in 1528, when it was relieved by the approach of the emperor Charles V.; and again in 1683, when it was delivered by John Sobieski, king of Poland. From that period, the Ottoman power began to decline; and in sub-

* 12. According to some accounts, Bajazet was treated kindly by Tamerlane, and died a natural death; but, according to others, he was shut up in an iron cage, against the bars of which he beat out his brains, through grief and despair. There is reason to believe, however, that his death was accelerated, in one way or other, to remove the apprehensions of his conqueror.

sequent wars, particularly with the Russians, they have lost a considerable part of their former conquests. The modern Greeks have long suffered under the oppression of the Turks, and long wished for deliverance. After some previous attempts, which all miscarried, and the failure of which tended to rivet their chains more closely, an insurrection of the most formidable kind commenced in 1821. The war thus produced has been carried on with various success till the present time, and has presented many dreadful scenes of blood and cruelty. England, France, and Russia have, at length, interfered in favour of the Greeks; and there is now scarcely any doubt of their speedy deliverance from the state of slavery in which they have so long been held.

Exercises on the Map of European Turkey and Greece.

What are the latitudes and longitudes of Constantinople, Corinth, and Belgrade? What is the breadth of the Strait of Otranto, at the entrance of the Gulf of Venice? What are the distances from Constantinople to Salonica, Sophia, and Silistria? What are the length and breadth of the Black Sea? How far is Scio from Smyrna in Asia? What are the distances from Candia to the nearest points of Europe, Asia, and Africa? How are Candia, Cyprus, and the mouths of the Nile, situated in respect to each other?

Questions on the Notes to Section XXIX.

1. What rivers form the present north-eastern boundary of Turkey?
2. What are the extreme latitudes and longitudes of Turkey, including Greece? Its dimensions and extent?
3. How are Moldavia and Walachia governed? What are their populations?
4. Name the Ionian Islands. Give an account of them. What is their population?

   What is the population of Candia? What sort of island is it? Give an account of the labyrinth? To whom has Candia been subject, and how has it been treated? Give an account of the siege of the capital.

   What difference is there between the northern and southern sides of Cyprus, and how is it occasioned? When was this island conquered by the Turks? How have they treated it? What is its present condition? Its population? The personal appearance of the inhabitants? Its capital?

   What is the population of Rhodes? Give an account of the colossus.

   What is the population of Metelin? What is the law of succession to property in that island?

   For what is Paros noted?

   Describe the grotto of Antiparos.

   What is the natural character of Scio? In what state was it immediately before the late Greek revolution? Describe the calamities to which it was subjected after that event.
5. What is the nature of the isthmus of Corinth? Its breadth?
7. What are the populations of the principal towns of Turkey and Greece? By whom was Constantinople built? Describe its situation and external appearance. Describe the interior of the city. Of what materials are the houses generally constructed? What is done by the people in consequence of their fear of fire? What is there peculiar respecting the burying-grounds of the Turks?
8. When were the janizaries established? Of whom were they composed? When was their body abolished?
9. How is the power of the sultan limited? Who are the principal persons in office under him? What is the divan, and how attended? How do the Turkish governors treat those under them?
11. What are the principal articles of belief in the Mohammedan religion? How many wives are men permitted to have? What day is set apart for public worship. Describe the fast of Ramadan. By what is it followed? Is wine used by the Turks? What is sometimes used instead of it?

    Who are the mufti, the moulahs, the imaums, and the dervises?
12. What accounts are given of the treatment of Bajazet, after he was made prisoner?

XXX.—GREECE.*

1. *Boundaries.*—The northern limit of Greece, exclusive of the islands, nearly coincides with a parallel of latitude passing through Salonica; and it is bounded on the other sides by the sea.

2. *Divisions.*—Since the late revolution, Greece has been divided into seven parts; East Hellas, West Hellas, Macedonia, Epirus, Thessaly, the Morea, and Candia with the other islands.

3. *Towns.*—The principal and most noted towns in Greece are Napoli di Romania, Hydra, Tripolitza, Athens, and Corinth.

4. *Population.*—The population, exclusive of the islands, is supposed to be about two millions.†

5. *Education.*—Education is as much attended to among the Greeks as can be expected from the degraded condition in which they have so long been. Any little learning that exists in the country is, for the most part, to be found in the monasteries.

6. *Religion.*—The religion is that of the Greek church.‡

7. *Character.*—The Greeks are naturally a fine people. They display on many occasions, however, that duplicity, and that want of integrity and honour, which are liable to be produced by such slavery as they have long endured.

8. *Manners and Dress.*—In their manners and dress, the Greeks resemble the Turks in a considerable degree. They wear turbans of a dark colour, however; the use of white ones

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* 1. As there is now reason to expect, that Greece will shortly be formed into a distinct state, it may be proper to give, in a separate form, some particulars respecting that interesting country, in addition to what is contained in the preceding section.

† 2. Of this, Macedonia is estimated to contain 700,000; the Morea, 450,000; Epirus, 400,000; Thessaly, 300,000; and East and West Hellas, 150,000.

‡ 3. The religion of the Greek church very much resembles that of the Roman Catholic; and is so called from being that which was established in the Greek or Eastern Empire, after the time of Constantine the Great. It has, however, far more fasts; their number amounting to more than half the year. These consist of every Wednesday and Friday, of the usual period of lent before Easter, and of many saints' days. In this church, the use of images is strictly prohibited; but pictures are permitted, and receive marks of adoration. The form of government is the same as in the church of Rome; with which, however, it is totally unconnected. The chief dignitary is the patriarch of Constantinople; and under him there are metropolitans, archbishops, bishops, and inferior clergy. The patriarch is elected by the neighbouring metropolitans and archbishops; and the appointment is confirmed by the Grand Seignior, to whom the patriarch pays, as tribute, above half his income. The situations of the other clergy are publicly sold by the Turks. In the Greek church, the clergy are allowed to marry before ordination, but the female must not have been married before; and no clergyman is permitted to marry a second time.

being permitted only to Mohammedans. The women also are exempted from most of the restraints to which the Turkish females are subject.

9. *Language.*—The Greeks speak the Romaic or modern Greek, which bears a near resemblance to the classical Greek of ancient times.

XXXI.—EUROPEAN RUSSIA.*

1. *Boundaries.*—The European dominions of Russia are bounded on the north by the Frozen Ocean; on the east, by Asia; on the south, by the Sea of Azov, the Black Sea, and the Turkish and Austrian territories; and on the west, by Prussia, the Baltic Sea, the Gulf of Bothnia, and the Swedish dominions in Lapland.†

2. *Divisions.*—European Russia is divided into the six provinces of East Sea, Great Russia, Little Russia, South or New Russia, West Russia, and Poland, with the Kingdom of Kazan. These, with their subdivisions and principal towns, are as follows:

I. EAST SEA PROVINCE, FIVE GOVERNMENTS.

GOVERNMENTS.	CHIEF TOWNS.
Petersburg	PETERSBURG, Cronstadt
Finland	Abo, Uleaborg, Tornea
Esthonia	Revel
Livonia	Riga
Courland	Mittau

Questions on the Notes to Section XXX.

2. What are the supposed populations of the different divisions of Greece?
3. Why is the Greek church so called? What other church does it most resemble, and in what does it differ from that church? What fasts are there? What distinction is there respecting the use of images and pictures? What is the form of church government? What dignitaries are there? How are the patriarch and the other clergy appointed? What is the law respecting the marriage of the clergy?

* 1. The latitude of the most southern point of European Russia, is rather less than 45° north, and that of its most northern point about 70°. Its extreme longitudes are 18° and 60° east. The entire Russian empire is far the greatest in extent that has ever existed in the world; being equal in surface to four times the Roman empire, and one half greater than the present empire of China. Its content has been computed at seven millions and a half of square miles; of which, about one fourth is in Europe, and the rest in Asia. Its power and population, however, though very great, are by no means proportional to its extent.

† 2. The rivers Tornea and Tana form the greater part of the north-western boundary, since the late cession of Finland and part of Lapland by Sweden.

II. GREAT RUSSIA, NINETEEN GOVERNMENTS.

GOVERNMENTS.	CHIEF TOWNS.
Moscow	Moscow
Smolensko	Smolensko
Pskov or Pleskov	Pleskov
Novgorod	Novgorod
Olonetz	Petrosavodsk, Olonetz
Archangel	Archangel
Vologda	Vologda
Kostroma	Kostroma
Nizney Novgorod	Nizney Novgorod
Vladimir	Vladimir
Toola	Toola
Kalouga	Kalouga
Tver	Tver
Jaroslav	Jaroslav
Koursk	Koursk
Orlov	Orel
Riazane	Riazane
Tambov	Tambov
Voronez	Voronez

III. LITTLE RUSSIA, FOUR GOVERNMENTS.

Kiev	Kiev or Kiov
Ukraine	Charkov
Tschernigov	Tschernigov
Pultava	Pultava

IV. SOUTH OR NEW RUSSIA, FIVE GOVERNMENTS.

Ekaterinoslav	Ekaterinoslav
Kherson or Cherson	Kherson or Cherson, Odessa
Taurida	Kaffa, Sympheropol
Bessarabia	Akerman, Izmail
Don Cossacks	Tcherkask

V. WEST RUSSIA, EIGHT GOVERNMENTS.

Wilna or Vilna	Wilna
Grodno	Grodno
Minsk	Minsk
Vitebsk or Polotzk	Vitebsk
Mohilev	Mohilev
Volhynia	Berdyczeu
Podolia	Kamenetz
Byalystock	Byalystock

VI. KINGDOM OF POLAND, EIGHT WAYWODESHIPS.

GOVERNMENTS.	CHIEF TOWNS.
Massovia	Warsaw
Kalitch	Kalitch
Cracow	Kielce
Sandomir	Radom
Lublin	Lublin
Polachia	Siedlec
Augustov	Suwalki
Plock	Plock

VII. KINGDOM OF KAZAN, FIVE GOVERNMENTS.

Kazan	Kazan
Viatka	Viatka
Perm	Perm
Simbirsk	Simbirsk
Pensa	Pensa

3. *Islands.*—Two groupes of islands, one west of Esthonia, and the other south-west of Finland, belong to Russia. The principal of these are Osel or Oesel, Dago, and Aland.

4. *Seaports.*—Uleaborg, Abo, Vyborg, Petersburg, Cronstadt, Narva, Revel, and Riga, on the Baltic; Archangel, on the White Sea; Odessa, Otchakov, Kherson, Sympheropol, Sevastopol, and Kaffa or Theodosia, on the Black Sea; and Taganrog, on the Sea of Azov.

5. *Peninsula, &c.*—The only peninsula worthy of notice, is that of the Crimea, or Crim Tartary, which is joined to the mainland by the Isthmus of Perekop. This isthmus is five miles broad.

6. *Face of the Country, &c.*—The principal mountains are the Uralian or Poyas, some of whose summits are four or five thousand feet high. The greater part of Russia, however, is level; and it abounds in extensive plains, called *steppes.** There are also many forests of vast extent.

* 3. Some of these steppes are barren, and nearly desert; but others are partly cultivated, and partly covered with a great profusion of grass, and in some places with forests. One of them occupies the great space between the White Sea, the rivers Dvina and Petchora, and a chain of mountains in Vologda. Another com-

7. *Lakes.*—The principal lakes are those of Ladoga and Onega, north-east of Petersburg; Tchodskoi, south-west of it; and Imandra and Enare, in Lapland.*

8. *Rivers.*—The chief rivers are the Volga, which rises north-west of Moscow, and, after passing Tver and several other towns, and flowing 250 miles through Asia, falls into the Caspian Sea, by seventy mouths, at Astrakhan; the Dnieper, which passes Smolensko, Kiev, Kherson, &c. and falls into the Black Sea; and the Don, which, after passing Kalouga, Tcherkask, &c. falls into the Sea of Azov. Besides these, there are the Petchora, which flows into the Frozen Ocean; the Northern Dvina, which falls into the White Sea at Archangel; and another Dvina, which falls into the Baltic at Riga. The Volga receives the Kama, and many other considerable rivers.†

9. *Towns.*—The chief cities and towns are PETERSBURG, the present capital; Moscow, the former one; Warsaw, the former capital of Poland; and Kherson.‡

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prehends all the south of Russia between the Bong and Don. Much of the latter is very fertile. In all the space between the Carpathian and the Ural mountains, a space of 1500 miles, there is not a mountain to vary the horizon or oppose the winds.

* 4. Ladoga is the largest lake in Europe; being 130 miles long, and 70 broad. The north-western part of the Russian dominions, particularly Finland, contains lakes almost without number. The government of Olonetz alone is said to contain 1998.

† 5. The Volga has a course of more than 1700 miles, and is navigable from the Caspian to Tver, a space of more than 1500 miles, having a fall of only about nine inches per mile.

‡ 6. The population of Petersburg is above 300,000, of Moscow nearly the same, of Warsaw and Kherson about 100,000 each, and of Kazan 50,000. The others mentioned above have different populations, between 20,000 and 40,000.

Petersburg, or St. Petersburg, is so called from Peter the Great, by whom it was founded in 1703, and who made it the metropolis of the empire eleven years after. It is built at the mouth of the Neva, on both sides of it, and on islands. The situation is marshy, but in other respects good. The communication of the parts of the town separated by the river, is effected in summer by bridges of boats, and in winter by the ice, at which time the boats are removed. At the latter season, the Neva is covered with ice, from two to three feet thick, and is crowded by persons engaged in various amusements, such as skating, and descending in sledges along the sloping sides of artificial eminences. These are composed of snow incrusted with ice, and are generally about thirty feet high; and such is the velocity acquired in the descent, that the person is often carried 300 or 400 feet along the level ice, on the bed of the river. In summer, the heat is as great as in the south of France; but, in winter, the cold is intense, so that lives are lost, in many instances, from its severity; and warm clothing is absolutely necessary. From custom, however, the common people, when employed in active bodily labour, seem to feel little inconvenience from its effects; and women are sometimes seen washing in holes made

Also, Kazan, Riga, Odessa, Toola, Vilna, Cronstadt, Tver, Kiev, and Sympheropol.

10. *Climate.*—In the southern parts, the climate is moderate. In the north, the cold is extremely severe in winter; while in summer, the heat is often oppressive, from the great length of the day.*

11. *Soil and Produce.*—Livonia, Crimea, and the extensive plains of the Dnieper and the Don, are exceedingly fertile; while, in general, the north of the country is in the highest degree bleak and barren: and between these extremes, there is every variety. Some of the vegetable productions, which are very numerous, are barley, and other kinds of grain; timber, hemp, and flax. Silk and vines, also, are produced in the southern provinces.

12. *Animals.*—Besides vast numbers of black cattle, horses, sheep, swine, and goats; there are bears, rein-deer, wolves, foxes, &c. The fisheries on the Caspian Sea, the Volga, and other rivers, are very productive and valuable.

13. *Population.*—The population of this vast empire is supposed to be about sixty millions; of which about fifty-five millions belong to Europe, and the rest to Asia.†

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in the ice with hatchets, when the mercury is 60° below the freezing point; and when they are obliged, from time to time, to cut away the ice as it forms anew. The city has spacious streets, and a large proportion of excellent dwelling-houses; but there are few public buildings of a remarkable kind. All the houses lately built, are of brick, and are covered with iron or copper; but many of the older ones are of wood or clay. The oldest, and perhaps the most remarkable erection in the place, is the hut in which Peter the Great dwelt, while superintending the building of the city; and which is very properly covered over with a brick building to preserve it. Its roof was only eight feet high, and it contained but three apartments to accommodate a monarch of such well-merited distinction. The commerce of Petersburg is very extensive, comprehending four fifths of the trade of Russia. It is carried on chiefly by foreigners, particularly the English, as few of the Russians have capital. Petersburg is well supplied with provisions in summer, by means of canals, one of which unites the Neva with the Volga, and thus opens a communication with the Caspian Sea. In winter, however, the facilities for the carriage of articles are much greater by means of the snow, the frozen surface of which forms an excellent substitute for roads; and the beef of Archangel is often eaten fresh in Petersburg, at the distance of 500 miles. Yet, with all these advantages, living is more expensive in Petersburg than in any other place in Europe.

Moscow, the former capital, was burned during the French invasion in 1812. It has since been rebuilt, for the most part, and is supposed to contain nearly 300,000 inhabitants. About three fourths of the houses are of wood; and, on this account, it is liable to frequent and destructive conflagrations. In this city, there is a bell which weighs 432,000 pounds, and which is the greatest in the world. The Russians are fond of having large bells near their churches, and they keep them almost continually chiming.

* 7. At Petersburg, during the greatest cold of winter, the thermometer stands, in different years, from 40° to 60° below the freezing point; the greatest degree of heat in summer varies between 78° and 95°; and the mean of the whole year is about 40°.

In the northern half of the Russian dominions, there may be said to be only two seasons, summer and winter, without any of the pleasing mildness of spring or autumn; the termination of the heat of summer being immediately followed by the frost and snow of winter; while these again are as suddenly melted by the returning heat of the sun in April or May; and, after deluging the country with floods, are quickly followed by summer heat and rapid vegetation.

† 8. Of this great population, the East Sea Province is supposed to contain four

14. *Army and Navy.*—In 1820, the army amounted to nearly 900,000. The navy consists of 32 sail of the line and 18 frigates, besides many smaller vessels; and is stationed on the Baltic, the Black Sea, and the Caspian.

15. *Government.*—The government is an absolute, hereditary monarchy; the emperor framing all the laws, and being restrained only by the usages of the country, which it would often be dangerous to infringe.

16. *Manufactures.*—The manufactures of Russia are in a very backward state, but are improving. The principal are those of leather, soap, spirituous liquors, sail-cloth, and cordage.

17. *Commerce.*—The foreign commerce is considerable, consisting principally in the exporting of corn, hemp, flax, tallow, flax-seed, iron, furs, and timber; and in the importing of cotton and woollen goods, cotton wool, tea, sugar, coffee, fruit, and wine.

18. *State of Education.*—The education of the people is greatly neglected; and the country contains very few men of learning.*

19. *Religion.*—The religion of the state, and of the great mass of the people, is that of the Greek church. There are, however, particularly in the late additions to the empire, considerable numbers of Roman Catholics, Protestants, Mohammedans, and other denominations; and all enjoy equal civil rights.†

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millions and a quarter; Great Russia, twenty-three millions; Little Russia, six millions and a half; South or New Russia, three millions; West Russia, nine millions: the Kingdom of Poland, three millions; and the Kingdom of Kazan, six millions and a quarter; also the Kingdom of Astracan, three millions; and the Kingdom of Siberia, two millions. In this estimate, however, there is much uncertainty.

* 9. Peter the Great, and his successors, have shown the most laudable desire to civilize and educate their subjects; and have established various schools, and other seminaries, for this purpose. Catharine II. appointed and paid a committee of literary men to enrich the Russian language, and to render knowledge more accessible to her people, by making Russian translations of several of the best classical, English, French, and Italian works on various subjects. In Petersburg, there is a seminary, supported by government, which affords instruction to 540 young men, of high rank, in the elementary branches of education; in the French, English, Dutch, Latin, and Tartar languages; and in fortification, history, drawing, music, &c. It also affords a similar education to 60 young men of humbler origin, who are afterwards to be tutors. There is a similar seminary for instructing 250 young ladies, belonging to noble families, in reading, writing, arithmetic, needlework, history, geography, music, drawing, and modern languages. It also affords education to 240 daughters of commoners, who, instead of history, geography, music, drawing, and languages, are instructed in cookery, washing, and other branches of domestic management. It is to be regretted, however, that all the exertions of the Russian sovereigns have failed in making much impression on the great mass of the people, who are still, for the most part, extremely ignorant. The parish clergy also are very imperfectly educated; and many of them are said to repeat the service of their church by rote, being unable to read it. Any little learning that belongs to the ecclesiastics, is to be found among the monks.

† 10. The members of the Greek church are supposed to exceed three fourths of the entire population; while the Roman Catholics are estimated at six millions and a half, the Lutherans at two millions and a half, the Mohammedans at upwards of three millions, and the Jews at half a million. Belonging to the Greek church, there are about 70,000 places of worship, with about 160,000 clergy. There are also 480 monasteries, containing 7300 monks; and 156 nunneries, containing 3000 nuns.

20. *Character, &c.*—Notwithstanding all the exertions of the Russian sovereigns, the great mass of the people are but half civilized. They are superstitious, and are in general very fond of spirituous liquors. Their manners differ considerably, however, in different parts of the empire.*

21. *Historical Sketch.*—In early times, European Russia was divided into many independent states. The greater number of these were united, in the year 862, under Ruric, who may be regarded as the first emperor of Russia. Volodomir, who ascended the throne in 976, embraced the doctrines of the Greek church, and introduced them among his subjects, who had previously been pagans. This change is said to have taken place, for the purpose of removing an obstacle to his marriage with a daughter of the Greek emperor, Basilius Porphyrogenitus. After this period, the country was long distracted with internal and external wars; and, though frequently successful, and often acquiring new territories, it was sometimes reduced to a state

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The monks do not marry; and out of them, as they are more learned, the dignitaries of the church are chosen. The men are not permitted to become monks till they are thirty, nor the women nuns under fifty. The worship in the Russian churches consists principally in long masses, prayers, and singing in the Slavonian language, which is not understood by the people. Sermons are scarcely ever preached; but sometimes a lecture is given from some of the fathers. The church is governed by a patriarch, four metropolitans, eleven archbishops, and nineteen bishops. It has been the policy of the Russian sovereigns, for more than a century, to diminish the wealth, and reduce the power of the clergy, which were formerly very great.

* 11. Before the time of Peter the Great, the Russians were almost savages. This distinguished prince endeavoured to introduce among them, the dress and manners of the more polished nations of Europe. In this attempt, he was successful among the higher ranks; but the lower orders, both males and females, still wear long coats made of sheep-skin, with the wool turned toward their bodies. Their houses are in general rudely constructed of planks, fastened at their extremities, the crevices between them being filled with moss, and the roofs covered with shingles. When a person wants a house, therefore, he may purchase it in the market, convey it home, and have it erected and fit for use, in a day or two. In the houses of the peasantry, there is generally a brick stove or oven, which occupies about a fourth part of the house. This is flat at top; and on the boards with which it is covered, and on a kind of shelves round the walls, the family sleep without beds. As there is no outlet for the smoke, except the doors and windows, the houses are constantly almost full of it, and the walls are incrusted with soot.

When a Russian pays a visit, he first makes the sign of the cross on entering the house, and bows to the picture of some saint, which is so placed as immediately to meet his view; and he is then welcomed by the family. During their long fasts, which occupy nearly two thirds of the year, the only animal food that is allowed to them is fish; the use of flesh, milk, butter, and eggs, being strictly forbidden.

In Russia, polygamy is prohibited under pain of death. A widower or widow is permitted to marry again, but it is considered to be rather improper; a third marriage, unless in very peculiar circumstances, is reckoned highly culpable; and a fourth is punishable with death.

When a person dies, new shoes are put on the feet of the corpse, and it is put in a coffin made of the hollowed trunk of a tree. The richer sort, if the season permit, keep the body eight or ten days, during which time the priest comes every day to sprinkle it with holy water and incense. At the time of interment, the body is encompassed with priests singing psalms, throwing incense on it to remove evil spirits, and praying for the soul of the deceased. Immediately before the coffin is put into the grave, a slip of paper, signed by the bishop and confessor, is put into the hand of the corpse, recommending the deceased to St. Peter, that he may get a ready admittance into paradise. Prayers are also offered up for the dead, for a considerable time after their decease.

of vassalage to Poland, and sometimes obliged to submit to the yoke of the Tartars. The independence of the empire, however, was completely re-established by Ivan Basilovitch, who died in 1505. About this time, the Russians began to make conquests in Siberia, which, however, was not finally reduced for more than a century. Alexis, who began to reign in 1646, found the nobles possessed of great and dangerous privileges. Taking advantage of their mutual dissensions, he directed them to assemble on a certain day at Moscow, and to lodge all the charters on which their respective claims were founded, in a large wooden building erected for the purpose, that he might consider and settle the differences between them. Instead of doing this, however, he set fire to the building, and thus reduced the nobles to the necessity of accepting such privileges as he chose to grant. Peter I. deservedly called Peter the Great, became emperor in 1682. To this prince, Russia owes the commencement of its present greatness. He introduced discipline into the army, and encouraged arts and manufactures among his subjects.* The example which he set, has since been followed by his successors, and the empire has thus gradually risen to its present commanding rank among the nations of the world. Catherine II. in particular, who reigned from 1762 till 1796, contributed greatly to the aggrandizement of Russia, both by salutary internal regulations, and by the success of her arms against the surrounding countries. In her war against the Turks, she shook their empire to its foundation, and increased her dominions by large portions of their territories. She also took the most active part in the dismemberment of Poland, and was rewarded by the largest share of that unfortunate country.

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* 12. This great prince had been brought up in the grossest ignorance; but, on arriving at maturity, he became sensible of his deficiency; and applied himself, with great diligence and success, to literary and scientific pursuits, particularly the study of modern languages, and of those branches of mathematics that are useful in navigation and war. In 1697, he sent a hundred young Russians, part into Italy, and part into Holland, to learn the art of ship-building; as, at his accession, every ship in the empire was of foreign construction. He sent others into Germany, to serve in the land forces of that empire, and thus to learn the most approved system of military tactics and discipline then in use. He also travelled into England, Holland, and other places, observing and learning whatever he conceived to be useful; and labouring himself, with activity and energy, in ship-yards, rope-yards, saw-mills, paper-mills, wire-manufactories, and other similar establishments. Having thus extended his knowledge, he took with him a great number of artificers, and returned to Russia, where he established manufactures, extended and encouraged commerce, and patronised the arts and sciences. In 1711, he married Catharine, a female of great beauty and talents, who was born of obscure parents in Livonia, and was married to a dragoon. She was made prisoner, however, on the wedding-day; and having been seen by Peter, she so captivated him, and so pleased him by her talents, that, ten years after, he made her his wife. By her masculine spirit and sound judgment, she served him essentially in the formation and execution of his great plans; and in 1712, when he was surrounded by the Turks on the banks of the Prut, she saved him from ruin by a bribe opportunely offered to the grand vizier. From these various causes, he made Catharine his successor at his decease in 1725, and she possessed the throne till her death in 1727.

Exercises on the Map of European Russia.

What are the latitudes and longitudes of Petersburg, Moscow, Archangel, and Izmail? How far is Moscow from the sea? Through what places does the parallel of 45° pass? The meridian of 35°? What are the shortest distances from the Gulf of Bothnia to the White Sea and the Frozen Ocean? How far is Moscow from Petersburg? If a person travel direct from Warsaw to Kazan, through what places will he pass?

XXXII.—POLAND.*

1. POLAND, before its dismemberment, was of large extent; being bounded on the north by Prussia and the Baltic, on the south by Hungary and Turkey, on the west by Germany and Silesia, and on the east by Russia. It thus extended from the Dnieper to Silesia, and from the Dniester and the Carpathian mountains to Livonia. Its content was nearly 300,000 square miles; and it is supposed to have contained a population of fifteen millions.

2. The country is remarkably flat; and, in the time of rain,

Questions on the Notes to Section XXXI.

1. What are the greatest and least latitudes and longitudes of European Russia? What is the extent of the Russian empire compared with others? How many square miles does it contain? What proportions of it are in Europe and Asia?
5. How far is the Volga navigable? What fall has it?
6. What are the populations of the principal towns of Russia?
   Whence is Petersburg so named? What is the nature of its situation? How do the different parts of the town communicate? What are some of the amusements of the people in winter? Describe the climate and its effects. Describe the houses. Describe the hut of Peter the Great. What commerce has Petersburg? How is it supplied with provisions?
   When was Moscow burned? What proportion of the houses are of wood? What weight is the great bell of Moscow?
7. What are the different degrees of heat indicated by the thermometer at different times at Petersburg? Describe the seasons in the northern half of the Russian dominions.
9. What committee was appointed by Catharine II.? What two seminaries are there in Petersburg supported by government? In what state are the parish clergy in respect to education?
10. What proportion of the subjects of Russia are members of the Greek church? How many houses of worship, and how many clergy belong to that church? How many monasteries, nunneries, monks, and nuns, are there? At what age may men become monks, or women nuns? Describe the worship in the Russian churches. How is the church governed?
11. What attempt was made by Peter the Great in respect to the dress and manners of his subjects? With what success did he make it? Describe the houses of the lower orders. What are the people allowed to eat during their fasts, and what is prohibited? What are the law and practice respecting marriage? Describe the ceremonies connected with funerals.
12. How was Peter the Great brought up? How did he supply the deficiencies of his education? What means did he adopt to introduce the art of shipbuilding and modern military discipline into Russia? Where did he travel? In what did he employ himself while abroad? What did he do on his return to Russia? Give an account of his empress Catharine.

* Though Poland has ceased to have a separate political existence, it may be proper to give some particulars respecting it on account of its former importance, and the frequent references to it in history.

the rivers overflow it to a great extent. In consequence of this and of the want of draining, much of it is marshy; and, from the same causes, as well as from the extensive forests, the climate is very moist. The soil is in general uncommonly fertile; but agriculture is badly understood and practised; though, in this respect, there is of late much improvement.

3. Poland held formerly a high rank among the powers of Europe, and had several distinguished monarchs, particularly John Sobieski, who died in 1696. The constitution, however, was extremely bad; the nobles having contrived to engross almost the whole power from the king and people. The laws, which were in themselves very imperfect, and often unjust, were administered in the most corrupt manner. The kings also were elective; and, on this account, intrigues, tumults, and frequently civil wars, were produced over the country, which was thus distracted and weakened at home, and rendered an easy prey to external foes.

4. In 1772, Russia, Prussia, and Austria, taking advantage of a civil war which they had secretly fomented, seized, on very slight pretences, and in the most unjust manner, about one fourth of the kingdom, which they divided among themselves. The king, Stanislaus, then began vigorously to improve the remaining part of his kingdom, in various respects. After several fruitless attempts also, a new constitution, of an excellent kind, was framed in 1791, and met the entire approbation of almost all the people. On the application, however, of a few discontented nobles, Catharine II. of Russia marched forces into the country; and, after the most spirited resistance on the part of the Poles, under the brave Kosciusko, she finally succeeded, with the assistance of Prussia, in conquering the kingdom, and dethroning Stanislaus. Austria now applied for a share of the spoils; and Russia and Prussia, rather than abide the consequence of a refusal, admitted the claim. The country was then finally dismembered: and, by this partition and the former, Prussia acquired nearly one fifth of the entire country, and about three millions and a half of subjects; Austria, rather more than one fifth, and nearly five millions of subjects; and Russia, nearly three fifths, with a population of nearly seven millions. Austria and Prussia were subsequently deprived of part of their acquisitions by Bonaparte; and out of the territories which they then lost, has been formed what is now called THE KINGDOM OF POLAND, and which is to belong to Russia. This territory is almost a square, 200 miles in each direction, and contains a population of about three millions. Its capital is Warsaw, which stands nearly in the centre, and has a population of about 100,000. A constitution, resembling that of 1791, was given to this kingdom by the late emperor Alexander; and the people are now living in tranquillity, and are likely to enjoy prosperity.

The established religion is the Roman Catholic; but there is full toleration for all others.

5. The town of Cracow, which at a remote period was the capital of Poland, is now, with a small adjacent territory, an independent city, under the name of THE BISHOPRIC OF CRACOW. At this city are the celebrated salt-mines of Wielitska, the greatest in Europe. The entrance to them is a few miles from Cracow; but they extend beneath the city, and the roofs of the vast vaults are supported in some places by timber, and in others by great pillars of the salt itself. They afford constant employment to 700 miners, and have long formed a productive source of revenue to Poland.

XXXIII.—SWEDEN.

1. *Boundaries.*—Sweden, including the part of Lapland that lies north of it, is bounded on the east by the Baltic, the Gulf of Bothnia, and Russian Lapland; on the west, by Norway and the Katte-Gat; on the south, by the Baltic; and on the north, by the Frozen Ocean.*

2. *Divisions.*—Sweden may be divided into three great parts; South Sweden, Middle Sweden, and North Sweden. These, with their subdivisions, called *laens*, and their chief towns, are as follows:

SOUTH SWEDEN.

LAENS.	CHIEF TOWNS.
Gottenburg	Gottenburg or Gotheborg
Elfsborg	Menersborg
Skaraborg	Mariestadt, Skara
Linkoping	Linkoping
Kalmar	Kalmar
Jonkoping or Smaland	Jonkoping
Kronoberg	Merioe
Carlskrona or Blekings	Carlskrona
Gothland or Gottland Island	Wisby
Halmstad	Halmstad
Christianstad	Christianstad
Malmohus	Malmo, Lund or Lunden

* 1. The part of Lapland which is west of the rivers Tornea and Tana, now belongs to Sweden. The length of Sweden, including this large district, is about 1000 miles, its medium breadth nearly 200, and its surface about 170,000 square miles. Its extreme latitudes are 55½° and 71° north; and its extreme longitudes, 11° and 31° east. Almost the entire boundary between it and Norway, is formed by mountains.

MIDDLE SWEDEN.

LAENS.	CHIEF TOWNS.
Stockholm	STOCKHOLM
Upsal	Upsal or Upsala
Wasteras	Wasteras
Nykoping	Nykoping
Orebro	Orebro
Carlstad or Wermeland	Carlstad

NORTH SWEDEN.

Falun, or Storakopparberg, or Dalecarlia	Falun
Gefleborg	Gefle or Gefleborg
Jamtland	Ostersund
Norrland	Hernosand
Maester and Nordbottens	Umea
Lapland	Lulea

3. *Islands.*—The principal islands are Gothland or Gottland, already mentioned, and Oland.

4. *Seaports.*—Gottenburg, Helsinborg, Carlskrona, Kalmar, Norkoping, Stockholm, Gefle, Soderhamn, Hernosand, Umea, &c.

5. *Mountains, &c.*—The principal mountains are the great Norwegian chain to the west, some of the summits of which are 6000 or 8000 feet high. The surface of the country has a gradual ascent towards these mountains, and is full of inequalities. Above two thirds of it is covered with immense forests, which produce vast quantities of excellent timber.

6. *Lakes.*—The principal lakes are Wenern, Wettern, and Melern; but, besides these, there are a great many others.

7. *Rivers.*—The principal rivers are the Gotha, which flows from Lake Wenern, and passes Gottenburg; the Dahl, which flows through Dalecarlia; and the Umea, which passes the town of the same name. The rivers, however, have short courses, and are therefore small when compared with many of the other rivers of Europe.

8. *Towns.*—The chief cities and towns are Stockholm, Gottenburg, and Carlskrona.*

9. *Climate.*—The climate, in the south, resembles that of Scotland. In the north, it is considerably colder. Over all the country, the heat of summer, and the cold of winter, are much increased by the great inequality of the days and nights.†

10. *Soil and Produce.*—The soil of Sweden is in general bad, and produces too little grain for the inhabitants. Potatoes have lately been introduced, and seem likely to be of great advantage to the country.‡

11. *Minerals.*—The mines of Sweden are numerous and valuable; producing large quantities of iron, copper, and other minerals.§

12. *Population, Army, and Navy.*—The population is about two millions and a half, and the army about 30,000. The navy is now very small; consisting of only six sail of the line, and eight or nine frigates.

13. *Government.*—The government is a limited, hereditary monarchy.‖

14. *Manufactures and Commerce.*—Sweden has no manufactures, except of articles for home consumption. Its principal exports are timber, pitch, tar, and minerals.

15. *Literature, &c.*—The universities are those of Upsal and Lund. There are also many endowed classical schools; and

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* 2. The population of Stockholm is about 70,000; of Gottenburg, 18,000 or 20,000; and of Carlskrona, about 11,000. None of the other towns has a population of 10,000. Stockholm has several fine buildings, and an excellent secure harbour, capable of containing a thousand vessels.

† 3. Notwithstanding the high latitude of Sweden, the heat in summer is often greater than in the south of England. The cold in winter, however, is often very severe.

‡ 4. Scarcely one twentieth of the country is fit for cultivation, and only about the half of this is cultivated. The produce is in general small, being only about five times the seed sown, even in good years; and it is calculated that the crop fails about once in ten years. The cattle are generally small; but they constitute a great part of the wealth of the inhabitants.

§ 5. The annual produce of the mines is about 100,000 tons of iron, 1200 tons of copper, and 1000 lbs. of silver; besides lead, alum, saltpetre, coal, and some gold. The chief copper mines are in Dalecarlia, or Dalarne, as it is also called. That of Falun is said to have been wrought upwards of a thousand years. The depth of this mine to the water in the bottom of it, is 1740 feet. The mines of Dannemora, thirty miles north of Upsal, have been long celebrated for producing large quantities of the best iron. This iron is highly prized in England, and is used in the manufacture of the finest steel. Besides these, there are other iron mines, of great extent, in Carlstadt and Orebro; and in Smaland, there is a mountain called Taberg, which is 400 feet high, and three miles in circumference, and is one entire mass of rich iron ore. Lapland also abounds in the same mineral; and near Tornea, there is another mountain of iron ore still larger than Taberg.

‖ 6. The legislature consists of four *states* or bodies: viz. 1100 nobles; from 50 to 60 clergy; from 100 to 200 burgesses; and 100 peasants. These deliberate separately; and any proposition agreed to by three of them, becomes a law, on receiving the royal assent. The crown is hereditary in the male descendants of the present king; but, in case of a failure in the male line, the king is to nominate a successor, subject to the approval of the legislature.

there are parish schools over all the country, in which the Lancasterian system has lately been introduced.*

16. *Religion.*—The established religion is Lutheranism; but all sects are tolerated.†

17. *Character, &c.*—The Swedes are in general peaceable, orderly, and industrious. They are tall and robust; and the peasantry are comfortably clad in cloth of their own weaving. The houses are generally formed of wood, the crevices of which are filled with pitch; and they are heated by means of stoves, in which wood is used for fuel.

18. *Historical Sketch.*—At an early period, Sweden was engaged in almost perpetual wars with Denmark, with various success. In 1397, Margaret of Denmark, a woman of uncommon talent and spirit, was acknowledged queen not only of Denmark, but also of Sweden and Norway. After her death, incessant commotions took place; and Sweden was sometimes independent, and sometimes in subjection. In 1520, Christian II. of Denmark, having possessed himself of Sweden, massacred most of the nobility, to render himself absolute, and then oppressed the country. Gustavus Vasa, after encountering great dangers and difficulties, succeeded, the same year, in expelling the Danes, at first by the assistance of the miners of Dalecarlia, and afterwards of the country at large; and he was made king by the unanimous voice of the nation. During his reign, the Reformation was introduced into Sweden; and, in 1544, the exercise of the Roman Catholic religion was strictly prohibited. Gustavus Adolphus, the most renowned of the Swedish monarchs, and the most distinguished prince of his time, ascended the throne in 1611. He soon acquired so high a character, that he was placed by the Protestant princes at the head of their confederation against Austria. In all his proceedings, his arms were attended with the most brilliant success; but he was at length killed in 1632, at the battle of Lutzen in Saxony, in the moment of victory. The celebrated Charles XII. ascended the throne in 1697. After the most splendid successes against Peter the Great of Russia, he was at length totally defeated at Pultava, in 1709, by the forces of Peter; and, nine years after, he was killed at the siege of Fredericshal in Norway, according to some accounts by a cannon shot from the enemy, but according to others by a shot fired by one of his own followers. In 1771, Gustavus III. became king. In 1772, he rendered himself ab-

* 7. The university of Upsal has of late been attended by 1200 students annually, and that of Lund or Lunden by half the number. Abo in Finland has a university, which, while that country belonged to Sweden, had about as many students as Lund. Sweden has produced many learned men, particularly naturalists and chemists. The most distinguished are Linnæus, Bergman, and Scheele.

† 8. The chief dignitary of the church is the archbishop of Upsal, who is the only archbishop; and there are twelve bishops, and between 3000 and 4000 clergy of different orders.

solute; and in 1792, he was shot at a masquerade by an assassin, named Ankerstrom. In 1809, the Russians conquered Finland, one of the most fertile and valuable parts of the Swedish dominions; and a revolution having taken place, in consequence of the ill-concerted and unfortunate measures of the king, Gustavus IV. he was deposed, and his family for ever excluded from the throne. His uncle was make king, under the title of Charles XIII.; and, he having no issue, Bernadotte, one of Napoleon's generals, was appointed to succeed him. In 1814, Norway was ceded by Denmark to Sweden; and, on the death of Charles, in 1818, he was succeeded by Bernadotte, under the title of Charles XIV. who is the present sovereign, and who seems likely to improve the country, and to secure the crown in his family.

Exercises on the Map of Sweden.

What are the latitudes and longitudes of Stockholm, Gottenburg, and Wisby? What are the distances from Stockholm to Gottenburg, Petersburg, and Tornea? What are the breadths of the Gulf of Bothnia at Abo and Umea?

XXXIV.—NORWAY.

1. *Situation.*—Norway, which now belongs to Sweden, is a long narrow country, between Sweden and the Atlantic Ocean.*

2. *Divisions.*—Norway is divided into the following provinces or governments, called *stifts:*

STIFTS.	CHIEF TOWNS.
Aggerhuus or Christiania	Christiania
Christiansand or Stavenger . . .	Christiansand, Stavenger
Bergen	Bergen
Tronyem or Drontheim	Tronyem or Drontheim
Nordland or Norwegian Lapland	Alstahoug

Questions on the Notes to Section XXXIII.

1. What are the dimensions and content of Sweden? What are its extreme latitudes and longitudes?
2. What are the populations of the principal towns of Sweden?
4. What proportion of the country is cultivated? What is the average amount of the produce? Of what description are the cattle?
5. What quantities of iron, copper, and silver, do the mines annually produce? Where are the chief copper mines? What mines produce the best iron? Describe the mountain Taberg.
6. How many, and what bodies compose the legislature? How is a law made? What is the law of succession?
7. By what number of students have the Swedish universities of late been attended?
8. What clergy are there in Sweden?

* 1. The length of Norway, and Norwegian or Danish Lapland, from the Naze, or Cape Lindesnes, to the North Cape, is nearly 1000 miles; and the breadth is in-

3. *Islands.*—There are great numbers of islands along the west and north-west coast, of which the chief are the Loffoden Isles.* The North Cape also is in the island of Mageroe.

4. *Seaports.*—The principal ports are Christiania, Fredericshal, Christiansand, Bergen, and Tronyem.

5. *Face of the Country.*—The country is very mountainous, particularly on the side next Sweden; and the coasts are in general bold and rocky. There are, however, many fine valleys; and the scenery is, in many instances, remarkably picturesque and beautiful. Much the greater part of the country is covered with timber.

6. *Lakes, &c.*—There are many lakes; and the coast is greatly indented with *fiords*, or inlets of the sea.

7. *Towns.*—The chief towns are Bergen, Christiania, and Tronyem.†

8. *Climate.*—The climate resembles that of Sweden; but neither the heat of summer, nor the cold of winter, is so great.

9. *Soil, Produce, &c.*—Very little of the country is fit for cultivation; but there are some tracts of great fertility.‡ Besides cattle, and various minerals, particularly iron and copper, the country produces vast quantities of excellent timber. The principal exports are timber, pitch, tar, iron, copper, and cattle.

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some places more than 200 miles, and in others less than 50. The superficial content is probably about 120,000 square miles. The extreme latitudes are 58° and 71° north; and Norway Proper lies between 5° and 16° east longitude.

* 2. Near the south-western extremity of these, is the remarkable and dangerous whirlpool of Malstrom or Moskoestrom. This is produced by strong currents, which flow first in one direction, and then in the opposite, during alternate periods of six hours, and which become stationary at high and low water. In winter, during storms from the west, the most frightful waves are raised, and the noise of the agitation is heard at an immense distance. At these times, it is necessary for vessels to keep at the distance of several miles, lest they should be drawn into the vortex; and frequently whales, bears, and other animals, which approach too near, are drawn in, and destroyed by the irresistible force of the current. At other times, however, the stream is generally navigable; and the common accounts of its terrors seem to be considerably exaggerated.

† 3. The first of these has a population of about 18,000; the second, 10,000; and the third 9000. The last is commonly, but improperly called Drontheim.

‡ 4. In Norway, as well as in various other places in high latitudes, vegetation is extremely rapid, on the return of summer. Thus, in several districts, barley is reaped in six or seven weeks after the seed has been sown; and, even to the north of Tronyem, two crops are sometimes produced in the same summer. This is probably occasioned by the ground being acted on by the sudden return of the heat, after having been protected from the cold by the deep covering of the snow during winter, and after it has been thoroughly moistened by the thaw. This opinion seems to be corroborated by the circumstance, that in places near the sea, where

10. *Population.*—The population of Norway is very small, compared with the extent of the country, being only about a million.

11. *Government.*—The government is a limited monarchy; and the king of Sweden appoints a viceroy, who resides in the royal palace in Christiania.*

12. *State of Education.*—There is a university at Bergen; and the people have pretty generally the means of acquiring useful instruction.

13. *Religion.*—The established religion is Lutheranism; but all sects are tolerated.†

14. *Character, &c.*—The Norwegians have long enjoyed civil liberty. Hence their habits and characters are much superior to those of the people in the neighbouring countries.

15. *Historical Sketch.*—In 875, the petty principalities of Norway were united into one monarchy, under Harold Harfager; and in 1028, the country was subjected to Denmark, by Canute the Great. The authority of Denmark, however, was not finally established till 1380, when Hager, king of Norway, married Margaret of Denmark. Since that time, the two countries, governed by their respective laws, continued under the same sovereign, till the peace of 1814, when Norway was ceded to Sweden.

Exercises on the Map of Norway.

What are the latitudes and longitudes of Christiania, Bergen, Trönyem, and Malstrom? What are the breadths of Norway at the parallels of 60°, 62°, and 64°? What are the distances from Christiania to Stockholm, Bergen, and Tronyem?

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little snow lies during the winter, vegetation is much less rapid; and in other districts, a deficiency of the usual quantity of snow in winter, is followed by bad crops in summer, and is considered a misfortune. In some places, too little grain is produced for the inhabitants. In such cases, here, as well as in Sweden and Lapland, they reduce fish, or the inner bark of the fir, to powder; and, this being mixed with meal, forms a part of the food of the common people. In seasons of scarcity, also, they eat parts of the rein-deer moss.

* 5. The laws are made by two bodies, called the *storthing* or *states*, the members of which are elected by persons appointed by the people at large. These members, as well as all persons holding any office in the government, must be natives of Norway, and members of the Lutheran church.

† 6. There are in Norway and Norwegian Lapland, five bishops, and above 300 inferior clergy.

Questions on the Notes to Section XXXIV.

1. What are the dimensions and content of Norway? Its extreme latitudes and longitudes?
2. Where is Malstrom? Describe the whirlpool.
3. What are the populations of the chief towns of Norway?
4. Give instances of the rapidity of vegetation in Norway. How is this occasioned? What substitute is sometimes used for grain?
5. How are the members of the legislature appointed? What qualifications are necessary in these members, and in others who hold any office in the government?
6. What clergy are in Norway?

XXXV.—DENMARK.

1. *Boundaries.*—The principal part of the Danish dominions is bounded on the west by the German Sea; on the north, by the Skager-Rack; on the south, by the Elbe; and on the east, by the Katte-Gat, the Sound, the Baltic, and Mecklenburg.*

DIVISIONS.	CHIEF TOWNS.
I. Jutland:	
1. Aalborg	Aalborg
2. Viborg	Viborg
3. Aarhuus	Aarhuus
4. Ripen	Ripen
II. Sleswick	Flensborg, Sleswick, Gottorp
III. Holstein	Altona, Gluckstadt, Kiel
IV. Lauenburg	Lauenburg
V. The Islands:	
1. Zealand	COPENHAGEN, Roskild, Elsineur
2. Funen or Fionen .	Odensee, Nyborg

2. *Other Islands.*—Laaland, Falster, Moen or Mona, Langeland, Femeren, Bornholm, Anholt, and several smaller about the entrance of the Baltic. There are also many small islands near the west coast of Jutland; and Iceland, the Faroe Isles, and Greenland, belong to Denmark.†

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* 1. These territories lie between the parallels of 53° 25′ and 57° 45′ north, and between 8° and 12½° east longitude. The superficial content is supposed to be 20,000 square miles.

† 2. ICELAND is a large island, situated between the sixty-third and sixty-seventh parallels of north latitude. So thinly is it peopled, however, that it has scarcely 50,000 inhabitants. The principal place is Reikiavik, the seat of government.

Iceland was formerly remarkable for Mount Hecla, a volcano; but this has been quiet for more than sixty years. In 1783, however, an eruption, of the most terrific kind, took place from the mountains called Skapta Jokul. The whole island, indeed, appears to be of a volcanic nature and origin; and any part of it may perhaps have been, or may yet be, the seat of a volcano. Besides its volcanoes, it is also remarkable for its hot springs, which are perhaps the most wonderful in the world. These are found in different parts of the island; but the Geysers, which are the most remarkable, are situated about 16 miles north of Skalholt. The greater of them has a basin formed of matter deposited by the boiling fluid. This basin is 56 feet in length, and 46 in breadth; and in the centre of it, there is a pipe or pit 10 feet in diameter. Through this, the hot water rises; and, after filling the basin, it runs over the sides. Dreadful explosions constantly take place, at intervals of some hours.

3. *Straits, &c.*—The principal straits are those of the Sound, and the Great and Little Belts. The Gulf of Lymfiord, in the north of Jutland, extends

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On these occasions, loud reports are heard under the ground, which is felt to tremble beneath the feet. Water then issues from the pit, throwing what is previously in the basin into agitation, and causing it to overflow. Other reports and explosions follow, steam escapes in volumes, and large jets of water are driven out with such force as to ascend to heights varying between 30 and 90 feet. The imprisoned steam having thus escaped, the explosions cease, and the basin and pit are both found empty. More water, however, begins to collect; and they are both full, before the commencement of the next explosion. At Tunguhver, in the valley of Reikholt, there are many boiling springs, two of which are very remarkable. These are about a foot asunder; and from one of them a jet issues, for about four minutes, to the height of ten feet, while the water in the other is boiling furiously. After this jet ceases, a larger one issues from the other spring, to the height of three or four feet, and continues about three minutes, while the first spring boils in its turn; and thus they continue to pour forth their columns alternately, by some internal works which it is difficult to explain.

The inhabitants of Iceland are simple in their manners, correct in their conduct, and have much literary and general knowledge; and the country has produced many men of talents and learning.

The FAROE or FERROE ISLANDS lie about 200 miles north-west of the Shetland Isles. The groupe consists of about twenty islands, and has a population a little above 5000. There are now no schools; but the children are taught to read by their parents. The islands are mountainous, and are remarkable for the extreme rudeness and boldness of their scenery. The men are uncommonly expert and dexterous in climbing rocks, to catch birds for food. The religion is Lutheranism; and the people are of good moral habits, and amiable dispositions.

GREENLAND is a large country; extending, so far as it has yet been traced, from 59½° to 78° of north latitude. A century ago, the population was 20,000; but, by the prevalence of the small-pox and other diseases, it has been reduced to about 7000. The surface of the country is rude and mountainous; and the climate is most inhospitable, the bleak summer lasting only from May till August. During this period, the natives dwell in tents on the sea-side; but, at the approach of winter, the women either repair old huts, or erect new ones. The walls of these are composed of stones, with turf or sod, instead of mortar. The roofs, which are flat, and about six feet high, are formed of timber, brought by the waves from some distant shores, and are covered over with shrubs and earth. There is usually a subterranean entrance to each dwelling, 12 or 15 feet long, 2 high, and 2 wide. The house consists of only one room, from 12 to 18 feet long, and from 10 to 12 wide. On one side, there is a kind of stage, a foot and a half high, which extends the whole length of the house; and which is used as bench, table, chair, and bedstead. In their habits, the people are dirty in the extreme; and, as the winter advances, their huts become intolerable to any except Greenlanders, from the putrid remains of the animals on which they feed, and from filth of every kind, which they never remove till it becomes troublesome from its bulk. In their persons, cookery, and choice of food, they are equally disgusting.

The Danes carry to the country, guns, powder and shot, arrow heads, knives, files, axes, needles, nails, linen, hosiery, cottons, looking-glasses, tobacco, rye, barley, tea, coffee, beer, and various other articles; and receive in return the horns of the sea-unicorn, the skins of seals, of blue and white foxes, of white bears, white hares, rein-deer, and other animals, with feathers and eider down. This last is the exquisitely fine down of the breast of the eider duck, which it pulls out for lining to its nest. A pound sterling is paid for a pound weight of the best sort of this down. The horn of the sea-unicorn, or narwhal, extends right forward from the point of its upper jaw, to the length of eight or ten feet, and far surpasses ivory in all its valuable properties.

The most remarkable animal of Greenland, however, is the common whale. Before the whale-fishery was carried to its present extent, animals of this species were both larger and more numerous than they are at present. Still, however, some are taken which are sixty or seventy feet long. Three hundred and fifty ships—Dutch, English, and Danish—have sometimes been employed in this fishery, and have killed from 1500 to 2000 whales in one summer. When a whale is seen, four or five boats, each with six or eight men, are sent from the vessel. When they are near enough, a person strikes the whale with a harpoon or barbed dart, to which a

from the Katte-Gat, and reaches within a mile or two of the German Sea.*

4. *Seaports.*—The chief ports for trade are those of Copenhagen, Altona, Tonningen, Flensborg, Aalborg, and Kiel.

5. *Face of the Country, &c.*—The country is in general flat, and there are no large rivers or lakes. The canal of Kiel extends from the river Eyder to the Baltic.†

6. *Chief Towns.*—Copenhagen and Altona.‡

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line of some hundred fathoms is attached. The whale then sinks to a vast depth, carrying the line with him so rapidly, that a person must constantly wet the side of the boat to prevent it from taking fire by the rubbing of the line. The whale soon rises to breathe, and spouts water, with great violence and noise, to the height of some fathoms, from apertures on the top of the head. He is then struck again, and dives in a similar manner; and, after rising a second or third time, he is pierced in the vital parts with spears, till blood, as well as water, is spouted up from the apertures in the head. After this, he is allowed to swim about for some leagues, till he dies from loss of blood and exhaustion. The blubber or fat is then cut out, and boiled to extract the oil; or, if there be not proper conveniencies for this, it is put into barrels, and conveyed home. Each whale generally yields from sixty to a hundred barrels of oil, worth three or four pounds a barrel. Of all the Greenland animals, however, none are so useful to the natives as the seals. Their flesh serves for food; their skins are used for clothing, and in the construction of their boats; their sinews serve for thread and cords; their entrails for sails for boats, and windows for their huts; and of the bones, they make utensils of various kinds.

In connexion with Greenland, may be mentioned the islands of SPITZBERGEN, which lie east of it; though they are claimed by the Russians. These islands have no fixed inhabitants; but they are visited by parties of Russians, who are attracted by the great number of sea and land animals found in them and on their coasts. They have the most bleak and forbidding appearance imaginable, presenting barren pointed rocks and mountains, several of which are of great height, and are covered with perpetual snow.

* 3. The breadth of the Little Belt, at the narrowest part, is one mile; that of the Sound, four; and that of the Great Belt, ten or twelve. These straits, as well as various parts of the Baltic, are frozen over in severe winters. An occurrence of this kind was turned to great advantage by Charles X. of Sweden, in 1658. This prince was fighting in Poland; and war having been declared against him by Frederick III. of Denmark, he marched with great rapidity through Germany and Sleswick, and arrived at the shore of the Little Belt with an army of 20,000 men. After some hesitation, he ventured across the strait with his army, cannon, and baggage; and, having crossed Funen, he passed successively to the islands of Laaland, Langeland, Falster, and Zealand; thus avoiding that part of the Great Belt where the current and the width of the channel rendered the strength of the ice doubtful. By this means, he arrived at Copenhagen, and obliged the Danes to purchase a peace with the loss of several provinces.

† 4. This canal cost about £800,000 sterling. It admits vessels of 120 tons, which are thus free from the delays and dangers that often attend the passage round Jutland; and no fewer than from two to three thousand pass through it annually. The whole length from Tonningen, at the mouth of the Eyder, to the Baltic, is 105 miles, of which the canal occupies 22. It was commenced in 1777, and finished in seven years.

‡ 5. The population of Copenhagen is 90,000 or 100,000; and that of Altona or Altena, 30,000. The other towns are small, the population of none of them exceeding 6000 or 7000. Copenhagen, or Kiobnhavn, is the best built town in the north of Europe. Most of the houses are of brick, some of them of stone from Germany, and a few of the finest buildings are of Norwegian marble. The erection of wooden houses is prohibited. The harbour is excellent.

7. *Colonies.*—To the Danes belong the islands of Santa Cruz and St. Thomas, in the West Indies; besides the Faroe Islands, Iceland, and Greenland, already mentioned.

8. *Climate, &c.*—The climate is moist, and rather temperate; and the soil is in general fertile, producing good corn and pasture.* Holstein, and other parts of the country, produce great numbers of beautiful, spirited horses, and excellent breeds of horned cattle.

9. *Population, &c.*—The population of the Danish dominions is supposed to be nearly two millions. The army, in the time of peace, is about 30,000. The navy formerly consisted of more than twenty ships of the line, and about fifteen frigates; but it was nearly annihilated during the late war.

10. *Government.*—Since 1660, the government has been, in principle, one of the most absolute in the world. In practice, however, it is tempered by various checks, and is far from being despotic.

11. *Manufactures and Commerce.*—Scarcely any articles are manufactured, except for home consumption. The commerce of the country is considerable, particularly with England, the Netherlands, France, and the shores of the Mediterranean.

12. *Education.*—There are universities in Copenhagen and Kiel. There are also nine seminaries for the education of schoolmasters, and about 3000 village schools.†

13. *Religion.*—The established religion is Lutheranism; but there is complete toleration for all other denominations.‡

14. *Character, &c.*—The Danes are in general tall and robust; with good complexions, and hair of a flaxen, yellow, or red colour. The common people, having but lately become free, want, in general, the bold manly spirit of the Swedes and Norwegians, and are poor and dirty. Since their emancipation, however, at the beginning of the present century, they are much improved.

15. *Historical Sketch.*—About the ninth, tenth, and eleventh

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* 6. There are some districts which are covered with loose sand, to a considerable extent. A ridge of this kind stretches northerly through Jutland, and produces only heath and some useless plants. These sands are often blown in clouds by the winds, and desolate the cultivated grounds in their vicinity. To prevent this, the government encourages the sowing of certain plants with spreading roots and broad leaves, to bind the sand, and break the force of the wind.

† 7. There is also a college, with four professors, in Odensee. The university of Copenhagen has about 700 students; and that of Kell, 200 or 300. Denmark has produced several men of eminence. Of these, it may be sufficient to mention Tycho Brahe, the celebrated astronomer; and Malte Brun, the eminent geographer. Denmark and Norway have the same language. This, as well as the Swedish, is of Gothic origin; and both have a considerable affinity to the German and English.

‡ 8. The bishops are those of Copenhagen, Funen, Aalborg, Aarhuus, and Ripen. The bishops have annual incomes of different amounts, from £400 to £1000; but they have no political power.

centuries, the Danes were formidable, by their piracies and invasions, to several of the surrounding countries, particularly Scotland, Ireland, Germany, and England, the last of which countries was for some time entirely subject to their power. The Protestant religion was established in all the Danish dominions in 1536. In 1660, Frederick III. made Denmark an absolute and hereditary monarchy, instead of a limited and elective one. During the wars of Napoleon, Denmark suffered severely, on two occasions, from the power of Britain: first in 1801, when most of her fleet was destroyed or captured at Copenhagen by Lord Nelson, and the city was saved only by the submission of the Danish government; and again, in 1807, when Copenhagen surrendered, after a destructive bombardment by the British fleet and army. On this occasion, the Danish fleet, consisting of sixteen ships of the line and fifteen frigates, with other vessels, and a vast quantity of naval stores, was brought to England, after which Copenhagen was evacuated by the British. At the peace of 1814, Denmark was obliged by the Allied Powers to yield up Norway to Sweden; and the island of Heligoland, at the mouth of the Elbe, to England; in consequence of having refused to join with them in the confederation against Bonaparte. In place of this valuable portion of her dominions, Denmark obtained a part of Pomerania, which has since been exchanged with Prussia for Lauenburg, and a pecuniary consideration.

Questions on the Notes to Section XXXV.

1. What are the greatest and least latitudes and longitudes of the principal parts of the Danish dominions? Their content?
2. What is the population of Iceland? The principal town?
   What mountain was formerly a volcano? What more recently?
   Describe the Geysers. To what height is the water thrown by them? Describe the reciprocating springs at Tunguhver.
   What is the character of the Icelanders?
   Where are the Faroe Islands? What is their population? What is the natural appearance of the islands? What is the character of the people?
   What is the population of Greenland? What is the nature of the climate? Describe the huts of the people. Their habits.
   What articles do the Danes take to the country? What do they receive in return? What is elder down? At what rate does it sell? Describe the horn of the narwhal.
   What is the magnitude of some of the Greenland whales? How many ships have sometimes been employed in this fishery? How many whales have been killed in a summer? Describe the mode of killing a whale. How much oil does a whale generally yield? What animal is most useful to the Greenlanders? Describe its uses.
   By whom are the islands of Spitzbergen claimed? What is their appearance?
3. What are the breadths of the Sound and the Belts? Describe the crossing of the ice by Charles X. of Sweden.
4. What was the cost of the canal of Kiel? When was it begun? When finished? How many vessels pass through it annually? What is its length?
5. What are the populations of Copenhagen and Altona? Give an account of the former.
7. How many students are there in the Danish universities?
8. What bishops are there in Denmark? What salaries have they? Have they political power?

Exercises on the Map of Denmark.

What are the latitudes and longitudes of Copenhagen, Odensee, Kiel, and Altona? What is the length of the Gulf of Lymfiord? What is the breadth of the Katte-Gat at Gottenburg? What are the distances from Copenhagen to Stockholm, Christiania, and Altona? What is the greatest breadth of Jutland? By how many ways may a ship sail from the German Sea into the Baltic?

XXXVI.—LAPLAND.*

1. The boundaries of Lapland are not very accurately fixed. It may be regarded, however, as extending from the sixty-fourth degree of north latitude to the Frozen Ocean, and from the Atlantic to the White Sea. The country is divided, by the continuation of the Norwegian chain of mountains, into two parts, which are strikingly different. In that which extends round the Gulf of Bothnia, the heat in summer, and the cold in winter, are both very great; while, in the other part, the influence of the ocean moderates both. In the former, the heat in July is often as great as in France, and the inhabitants are tortured by musquitoes; while, in winter, water is often frozen in the vessel, as the person is in the act of drinking it; and even spirits of wine are sometimes converted into ice. In this region, in consequence of the heat of summer, and of the ground being protected by snow in winter, vegetation is extremely rapid in the few fertile spots; corn being often sown in the end of May, and reaped before the beginning of August. About the North Cape, on the contrary, grain does not ripen; because the snow lies less permanently in winter, and the heat is less in summer, though the mean annual temperature is greater than in some of the higher parts of the other region.

2. The inhabitants wear coats which are commonly made of sheepskin, with the wool turned towards the body; and above these, they have outer coats generally made of the skins of rein-deer, with the hairy side out. The fires are placed in the middle of their huts; and the floors are covered with the skins of rein-deer, on which the family sit or recline. A thicker covering of skins is used on the floor of that part of the hut in which they sleep, and they cover themselves with sheepskins to keep off the cold. They live, for the most part, on animal food, and on the milk of the rein-deer made into cheese, or in other states. When their stock of fish, or of the flesh of other animals, fails, they kill a rein-deer, which serves a family of four for a week. The entire population is thought to be about sixty thousand.

* 1. As Lapland, though of small political importance, presents a number of interesting peculiarities, it may be proper to give a few particulars respecting it, considered separately from Sweden and Russia, the countries to which it now belongs.

3. In the parts north of the arctic circle, the sun is constantly visible for a number of days about midsummer, and invisible for nearly an equal period about Christmas. Thus, at the seventieth degree of latitude, he never wholly disappears from the 17th of May till the 28th of July, nor is any part of him seen from the 25th of November till the 17th of January.* During the latter period, however, even at the middle of winter, there is considerable twilight for an hour or two before and after noon; and the moon, the aurora borealis, and the snow, prevent the nights from being dark. During the other period, the sun, besides being on the meridian at noon, is visible twelve hours after, on the continuation of that circle below the pole.

4. In winter, the Laplanders travel in sledges, drawn by rein-deer, on the frozen surface of the snow. These are made of birch; and are so small and light, that they may be easily carried in the arms. With a couple of rein-deer attached to one of these, a Laplander will travel fifty or sixty miles a day, occasionally at the rate of ten miles an hour. In guiding and balancing the vehicle, he shows great dexterity; and in going down hill, if the descent be steep, he ties another rein-deer by the horns to the rear of the sledge, which it pulls back so as to lessen the velocity.

5. To the Laplander, the rein-deer is invaluable. It constitutes, indeed, almost his entire wealth. Its milk and its flesh afford him excellent food, and its skin clothing. Of the tendons and intestines, he makes thread and cordage; of the horns, glue; and of the bones, spoons. In winter, it draws his sledges over frozen lakes, rivers, or snow; and, at other times of the year, it carries his tents and baggage on its back. Of these useful creatures, a wealthy Laplander possesses 1000, or more; a person of the middle class, 500 or 600; and the poorer people, from 50 to 200. They frequently kill, also, great numbers of wild ones, particularly in autumn. In summer, the rein-deer feed principally on grass; and, in winter, on a peculiar kind of moss or lichen, which they are dexterous in discovering under the snow. They are above four feet high, and three of them are thought to be about equal in weight to a moderate-sized ox.

* 2. The first of these intervals is 72 days, and the second only 53. The difference arises from refraction, which causes the sun to be visible when he is really below the horizon; from considering the position of the sun's upper limb, instead of that of his centre; and from the earth's motion in its orbit, being more rapid in winter than in summer. For farther illustration, see Note 8, page 3.

ASIA.

XXXVII.—GENERAL VIEW.

1. *Boundaries, &c.*—Asia is the north-eastern part of the old continent, and is larger than Europe or Africa.* It is bounded on the north, by the Northern Ocean; on the east, by the Pacific, and by Bhering's Strait, which separates it from the north-western part of America; on the south, by the Indian Ocean; and on the west, by the Arabian Gulf or Red Sea, the Isthmus of Suez, the Mediterranean Sea, the Archipelago, the Hellespont, the Sea of Marmara, the Bosphorus, the Black Sea, the Strait of Ienikale, the Sea of Azov, and European Russia.

2. *Seas, Straits, &c.*—The other principal seas are the Sea of Okhotsk or Lama, the Sea of Japan, the Yellow Sea, and the Chinese Sea, on the east; and the Bay of Bengal and the Persian Gulf, in the south. Other straits are those of Bab-el-Mandeb and Ormus, at the entrances of the Red Sea and the Persian Gulf; Palk's Strait, between Ceylon and India; and the Strait of Malacca, south-west of Malaya.

3. *Divisions.*—The principal divisions of Asia are Asiatic Russia, in the north; Asiatic Turkey, in the west; Arabia, in the south-west; Persia, Afghanistan, India, Chin-India, and Tibet, in the south; China, in the south-east; the Japan Islands, on the east;† and the various Tartar or Tatar nations, in the middle.

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* 1. Asia is situated between the second and seventy-eighth parallels of north latitude, and between 26° of east and 170° of west longitude. Its length, from the Strait of Bhering to that of Bab-el-Mandeb, is about 6700 miles; and its breadth, from the south-east of China to the Ural mountains, about 3800 miles.

† 2. Other islands near Asia, are Ceylon; the Maldives; the Laccadives; the Andaman and Nicobar Isles; the Indian or Eastern Archipelago, which contains Borneo, Sumatra, Java, Celebes, and several smaller; the Philippine Isles, Hainan, Formosa, and others. Several of these have been classed in the newly-established division of Oceanica. There are also Bhering's Isle, and the Aleoutskoi or Aleutian Islands, east of Kamtschatka.

4. *Peninsulas, &c.*—The chief peninsulas are Arabia, Malaya, Corea, and Kamtschatka.* The Isthmus of Suez unites Asia and Africa, and is about sixty miles broad. Malaya is joined to the rest of Chin-India by the Isthmus of Kraw.

5. *Face of the Country, &c.*—In the middle of Asia, there is a vast plateau, or elevated tract of country, which consists of mountains and very high plains.† The principal mountains are those of Tibet; and the Altay and other mountains, south of Siberia.

6. *Lakes.*—The most remarkable lakes are the Caspian Sea, the Sea of Aral, Lake Baikal, and the Dead Sea.‡

7. *Rivers.*—Asia contains many great rivers, the principal of which are the Kian-ku or Yang-tse-kiang, and the Hoan-ho, which flow eastward through China; the Lena, Yenisseï or Ieniceï, and the Obi, which flow through Siberia into the Northern Ocean; the Amour or Segalien, which flows eastward into the Sea of Okhotsk; the Ganges and the Brahmapootra, which unite and flow into the Bay of Bengal; the Irrawaddy, which falls into the

* 3. The countries east and west of the Bay of Bengal, are often called the Eastern and Western Peninsulas of India. These, however, are not properly peninsulas, as there are large portions of their boundaries which are not formed by the sea. The country between the Black Sea and the Mediterranean, is a peninsula. This, which is now a part of Asiatic Turkey, was called, in ancient times, Asia Minor.

† 4. This tract, the most extensive table-land on the globe, lies between the parallels of 30° and 50°; and occupies the vast space between Siberia on the north, Hindostan and the Burman empire on the south, the Caspian Sea on the west, and China and Corea on the east. Its length probably exceeds 3000 miles; and its general breadth is 1200 or 1400 miles. From it, rivers flow in all directions; and the other countries of Asia slope from its boundaries, on every side. This tract has a remarkable influence on the climate of Asia. From its elevation, it is itself much colder than might be expected in such a latitude. It also interrupts, in a great degree, the atmospheric currents between the polar and the equatorial regions, which would otherwise tend to equalize the temperature; and thus, the heat of India, and the cold of Siberia, are both extremely great.

‡ 5. The Caspian is more than 700 miles long, and contains 120,000 square miles; the Sea of Aral is nearly 300 miles long, and has a surface of about 10,000 square miles; and Lake Baikal is about 350 miles long, and 35 broad. The last is traversed by the river Angara, a branch of the Yenisseï, and is fresh. Neither of the others has any outlet, and they are both salt. The Caspian receives the Volga, the Jaik or Ural, the Kur, and many other rivers; the water of which, as well as the rain that falls on its own surface, is carried off by evaporation. By this means also, the level of the surface is so much reduced as to be nearly 200 feet below that of the ocean. Some suppose that this lake was once united with the Black Sea by a strait, which has been stopped up by changes in the surface of the country. It has also been supposed to have been united with the Lake of Aral; but there is an elevated

same sea; the Cambodia, or Japanese river, which flows into the Sea of China; the Euphrates, which falls into the Persian Gulf; and the Indus, northwest of India.*

8. *Population*.—The population of this vast division of the earth is supposed to be three or four hundred millions, or about half of the entire human race.

9. *Character*.—The inhabitants of several countries of Asia are remarkable for retaining, at all times, nearly the same national character. The Hindoos are indolent, while the Chinese are noted for industry; and the Arabs and Tartars continue, in general, to lead the same wandering pastoral life as in ancient times.†

Exercises on the Map of Asia.

Through what parts of Asia do the parallels of 20°, 30°, 40°, and 50° pass? Through what parts do the meridians of 50°, 80°, and 110° pass? How are China and Asiatic Turkey situated in respect to India? In what direction does the Red Sea stretch? What is its length? How are the Black Sea, the Caspian, and the Levant or eastern part of the Mediterranean, situated in respect to each other? What countries of Asia have no sea-coast? What rivers rise from the great central plateau, and flow northward? Eastward? Southward?

level between them, which renders this unlikely. This lake produces vast quantities of valuable fish.

The Dead Sea, or the Lake of Asphaltites, in Palestine, is remarkably clear and transparent; but its water is uncommonly salt and even bitter, so that fishes cannot live in it; and it is between a fourth and a fifth part heavier than pure fresh water. Many fabulous stories have been told about this lake: such as, that birds, flying across it, will fall dead into its water, on account of the noxious vapour; and that, on its shores, beautiful apples are found, which consist internally of nothing but ashes. Great quantities of asphaltum, a kind of pitch or bitumen, are found floating on its surface; and hence it gets one of its names.

* 6. These rivers are arranged according to the lengths of their courses, as given by Major Rennell, except the Amour, which he supposed to be greater than the Yenisseï or Obi. The length of the Indus is supposed to be 1000 miles, and that of the Kian Ku about 2300 miles.

† 7. The national character of the people, and the nature of the climate in different places, cause remarkable varieties in the kind and structure of their dwellings. Thus, in much of the north of Asia and on the great plateau, as well as in Arabia, on account of the scarcity of wood, the people dwell in tents covered with the skins of their animals, or with stuffs made of their hair or wool; while in India, where wood is abundant, the houses are formed of slight perishable materials, both from the indolence of the people and the mildness of the climate. These circumstances account for the rapid rise, decline, and disappearance of Asiatic towns, of which there have been many striking instances.

Questions on the Notes to Section XXXVII.

1. Between what latitudes and longitudes is Asia situated? What are its length and breadth?
2. Point out the principal Asiatic islands?
3. What tract was called Asia Minor in ancient times?
4. How is the great plateau situated? What effect does it produce on the climate of Asia?
5. What sort of water is in the principal Asiatic lakes? How is the water received by the Caspian carried off? What fabulous stories have been told about the Dead Sea? Why is it called the Lake of Asphaltites?
6. What are the lengths of the least and greatest Asiatic rivers mentioned in the text?
7. What peculiarities are there in the dwellings in different parts of Asia? What effect have these circumstances on the towns in those parts?

XXXVIII.—ASIATIC RUSSIA.

1. *Boundaries, &c.*—This vast country, which is subject to the emperor of Russia, extends from the Ural Mountains to the Pacific, and from the Northern Ocean to Tartary.

2. *Divisions.*—Asiatic Russia is divided into the kingdoms of Astrakhan and Siberia, which are subdivided as follows:

KINGDOM OF ASTRAKHAN.

GOVERNMENTS.	CHIEF TOWNS.
Saratov	Saratov
Astrakhan . . .	Astrakhan
Caucasus* . . .	Teflis, Georgievsk, Derbent, Baku
Orenburg . . .	Orenburg, Ufa

KINGDOM OF SIBERIA.

Tobolsk	Tobolsk, Berezov
Tomsk	Tomsk, Kolyvan
Irkutzk†	Irkutzk, Okhotsk, Nertschinsk, Yakutsk

3. *Face of the Country.*—In the east and south, there are many great mountains; but the country between the Yenisseï and the Uralian Mountains, is a vast plain, with scarcely an eminence. There are also many other steppes or plains of great extent, which are generally barren; and much of the country is covered with wood.

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* 1. This government, which is so called from the mountains of the same name, consists principally of districts taken from Persia in 1813; and contains the provinces or governments of Grusia, Avkhasa, Circassia, Daghestan, and Shirvan. Grusia is the same as Georgia; and is subdivided into Imerittia, Mingrelia, and Gruria. The divisions and boundaries of the Asiatic portion of the Russian dominions and its parts, are not well ascertained or fixed; and even the common limit of Europe and Asia, as has been already mentioned, page 9, is doubtful. According to the boundary here assumed, Saratov is partly in Europe and partly in Asia.

† 2. The peninsula of Kamtschatka has belonged to Russia since 1711. At that time, the population was considerable; but it has since been reduced by the small-pox and other causes, particularly the use of spirituous liquors, which the Russians barter with the people for furs, so that it is supposed to be at present only 7000 or 8000. The cold in winter is severe, and the snow lies generally from October till April or May. In summer, however, the climate is mild and agreeable. The people travel on the snow in sledges, drawn by five or more large dogs; and such are the strength and swiftness of these animals, that they sometimes perform journeys of 60 or 70 miles a day.

4. *Rivers.*—The Volga flows into the Caspian by seventy mouths, at Astrakhan. The Obi receives the Irtish and Tobol, and flows into the Northern Ocean through the Gulf of Obi. The Yenisseï and Lena fall into the same sea.

5. *Towns.*—The principal towns are Astrakhan, Irkutzk, and Tobolsk, each of which contains about 30,000 inhabitants.

6. *Climate and Soil.*—The climate is, in general, cold and disagreeable; and the soil poor, not producing, on an average, much above three times the quantity of grain sown. There are, however, some fertile tracts in the south and west, particularly about Kolyvan.

7. *Minerals.*—The mines of Siberia are very valuable; producing gold, silver, copper, lead, and vast quantities of iron, besides various other minerals.*

8. *Inhabitants.*—The inhabitants are generally rude and uncivilized. There are many wandering tribes; such as the Tartars, Monguls, and Tungusians: and the Samoieds, and others who dwell in the northern parts, resemble the Laplanders in their habits and manner of living.

Exercises on the Map of Asiatic Russia.

What are the latitudes and longitudes of Tobolsk, Kolyvan, and Okhotsk? Whether has Astrakhan, Irkutzk, or Nertschinsk, the highest latitude? Whether is Berezov or Yakutsk farther north?

XXXIX.—ASIATIC TURKEY.

1. *Boundaries.*—Turkey in Asia, which forms a principal part of the Turkish Empire, is bounded on the north by the Black Sea; on the east, by Persia; on the south, by Arabia; and on the west, by the

* 3. The principal gold and silver mines are those of Kolyvan in the south, and Nertschinsk in the province of Daouria. The iron and copper mines of the Uralian and Altaian mountains are far more valuable than these. The Russian mines contribute in a considerable degree to the public revenue, many of them belonging to the crown.

Questions on the Notes to Section XXXVIII.

2. Since what time has Kamtschatka belonged to Russia? How has the population been reduced? What is its present amount? What is the nature of the climate? How do the people travel in winter?
3. Where are the gold and silver mines of Asiatic Russia? The iron and copper ones?

Mediterranean, the Archipelago, the Hellespont, the Sea of Marmara, and the Bosphorus.*

DIVISIONS.	CHIEF TOWNS.
Anatolia or Natolia .	Smyrna, Kara-Hissar, Kutaia, Kastamouni, Boorsa, Scutari, Satalia, Angora
Caramania	Akschier, Konia or Iconium, Kaisarieh
Itchill	Adana, Tarsus
Roum	Amasia, Tokat
Armenia	Erzeroom, Rizeh, Trebizond
Al-Djesira	Diarbekr, Mosul
Koordistan	Betlis
Syria	Damascus or Damas, Aleppo, Jerusalem, Antioch or Antakia, Tripoli, Acre
Irak Arabi	Bagdad, Bassora or Basra or Bussora

2. *Seaports.*—The chief ports for trade are Smyrna or Ismir, Scala Nova, Satalia, Tripoli, and Acre, on the Mediterranean; Trebizond and Sinope, on the Black Sea; and Bassora, an Arabian town near the Persian Gulf, nominally subject to Turkey.

3. *Face of the Country, Soil, &c.*—The surface of the country is composed of large plains and valleys, intermixed with numerous mountainous districts. Of the plains and valleys, many are naturally fertile and pleasant, in a remarkable degree; but agriculture is in the most wretched state.

4. *Rivers.*—Euphrates, Tigris, and Jordan.

5. *Towns.*—The largest towns are Aleppo, Damascus, Smyrna, Erzeroom, Bagdad, Kara-Hissar, Akschier, Kutaia, Kastamouni, Boorsa or Bursa, Mosul, Angora, and Jerusalem.†

* 1. The content of this great country is supposed to be more than 400,000 square miles. By the Turks, it is divided into many pashâlics, and these again into a great number of subordinate parts. These divisions, however, are seldom referred to in European works; and, from their number and minuteness, they would be unsuitable to a publication like the present.

† 2. The populations of the Turkish towns are not well ascertained; and hence the statements of travellers are often extremely discordant. Thus, according to different writers, the population of Aleppo is of various amounts between 100,000 and

6. *Climate.*—The climate of this country has always been considered excellent. At present, there are some unhealthy spots, from want of draining and proper cultivation.

7. *Population.*—The amount of the population is very uncertain; but it is supposed to be about ten millions.

8. *Manufactures and Commerce.*—The principal manufactures are those of carpets, silk and cotton goods, with Angora stuffs made of the hair of a particular kind of goats found in no other place. These, with rhubarb and other drugs, form the principal exports; and the imports are chiefly the manufactures and produce of England, and other countries of Europe.

9. *Antiquities.*—This country, formerly one of the principal seats of civilization and refinement, presents numerous remains of ancient art. Some of the most remarkable are the splendid ruins of Palmyra and Balbec.*

10. *Historical Sketch.*—The various states which, in ancient times, occupied this extensive and interesting country, were gradually brought into subjection by the Romans, and afterwards formed a part of the Greek empire. Much of the country was subdued by the Saracens, at an early period after the establishment of Mohammedanism. It was afterwards gradually conquered by the Turks, at different times, between the eleventh

280,000; of Damascus, between 100,000 and 200,000; of Erzeroom, between 80,000 and 250,000; of Angora, between 20,000 and 100,000; and of Bassora, between 45,000 and 80,000. Smyrna is thought to have 120,000 inhabitants. Jerusalem, also, which is one of the smallest mentioned above, has a population of 30,000 or 40,000. This city, once so justly celebrated, now consists of little else than a collection of miserable dwellings, indicating the wretchedness of the inhabitants. Bagdad is said to have contained a population of half a million, before the plague with which it was visited in 1772; and to have lost 400,000 of its inhabitants by that dreadful scourge.

* 3. Palmyra, supposed to be the same as Tadmor, built by Solomon (I Kings, ix.—II Chron. viii.), was situated in the Syrian desert, in 34° 35′ north latitude, and about 39° east longitude. It seems to have derived its wealth and greatness from having been the chief seat of the trade of India, and other parts of the east, with Syria, Asia Minor, and other places to the west. In the year 272, it was taken, and its celebrated queen, Zenobia, made prisoner by the Roman emperor Aurelian. At this time, it had attained a high rank in literature and the arts; and the celebrated Longinus, one of the most elegant of the Greek writers, was secretary to the queen, and was put to death by the order of Aurelian. The city suffered severely, on this occasion; and, though the Romans afterwards attempted to restore it to its ancient splendour, it continued to languish, till it fell under the power of the Mohammedans, under whom its decay and desolation were completed. At present, it exhibits the most splendid remnants of pure and beautiful Grecian architecture any where to be found. The remains of the great temple of the sun, in particular, present hundreds of splendid columns of the nicest workmanship, with great elegance and correctness of design. The place is now occupied by about thirty Arab families, who have their wretched huts erected in the ruined court of the temple, among broken columns and mouldering ornaments; and, to complete the dreariness and desolation of the scene, it is encompassed with the sands of the desert, which seem to have been making encroachments around it since the days of its ancient splendour.

Balbec, or Heliopolis, is in Syria, in 34° of north latitude, and is delightfully situated. The present population amounts to one or two thousand, whose wretched huts form a striking contrast with the venerable and splendid remains of the ancient city. Of these remains, which are suffering gradual destruction from the Turks, for sake of the iron cramps used in joining the stones, the principal are the ruins of a magnificent temple of the sun, supposed to have been built, in the second century, by the Roman emperor Antoninus Pius.

and the seventeenth centuries; and, under their tyranny and misgovernment, it has sunk to its present state of degradation.

Exercises on the Map of Asiatic Turkey.

How are Jerusalem, Damascus, Aleppo, and Trebizond, situated in respect to each other? Also Aleppo, Smyrna and Erzeroom? Also Bassora, Bagdad, and the ruins of Palmyra? What proportion of sea-coast has Asiatic Turkey?

XL.—ARABIA.

1. *Situation.*—Arabia is situated between the Arabian and Persian Gulfs, and between the Indian Ocean and Asiatic Turkey.*

DIVISIONS.	CHIEF TOWNS.
Arabia Petræa	Akaba
Hedjaz	Mecca and Medina, with their ports Jedda and Yambo
Yemen	Sana, Mokha
Hadramaut	Doan, Kesem
Omân	Muskat or Maskat
Lasha or Hajar . . .	Lasha
Nedjed	Yemama, Kariatain

2. *Face of the Country.*—There are several chains of mountains; but vast deserts form the most remarkable feature of the country.†

Questions on the Notes to Section XXXIX.

2. Are the populations of the Turkish towns accurately ascertained? What is said to be the population of Aleppo? Of Smyrna? Of Jerusalem? What is the present state of Jerusalem? What is said to have been the effect of the plague in Bagdad in 1772?
3. Where was Palmyra situated? Whence did its wealth and greatness arise? When was it taken, and by whom? Who was its queen at that time? Who was her secretary? What does it now exhibit? What is one of the most remarkable of its ruins? What is its present state?

Where is Balbec situated? What is its present population? What cause is producing the gradual destruction of its remains?

* 1. This country lies between 12½° and 34° of north latitude, and between 32½° and 59° of east longitude. Its length is about 1400 miles, and its breadth varies between 600 and 1200 miles.

† 2. One of the most remarkable of these deserts is that of Mount Sinai, between the two branches into which the Red Sea is divided at its northern extremity. This is irrecoverably barren, with the exception of a few fertile valleys, which produce grapes, dates, pears, and other excellent fruits. Mount Sinai is an enormous mass of granite rocks, with the Greek convent of St. Catharine at the bottom. Northeast of this is the vast Syrian desert; and, though the interior of Arabia is little known, except where it is traversed by the caravans, there is reason to believe, that a large proportion of it consists of deserts. Some of these are sandy, and others stony; but, in most of them, there are *oäses*, or fertile tracts, which are fit for cultivation, and which often contain forests.

3. *Climate.*—In the low flat parts of the country, the heat is excessive; but in the higher districts, the climate is mild.*

4. *Soil and Produce.*—Much of the country is absolutely barren: but Yemen, and some other districts, are remarkably fertile; and produce coffee, grain, drugs, and perfumes.†

5. *Animals.*—The horses, camels, and asses of Arabia, are the finest in the world.‡

6. *Population.*—The amount of the population is quite uncertain; but it is thought to amount to ten or twelve millions.

7. *State of Government.*—The various parties of Bedouins, or wandering Arabs, are each under the direction of a chief, called a *Sheik*, who rules them as a father does his family; and there

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* 3. In some parts, the thermometer often stands in summer at 98°, while snow occasionally falls on the mountains. Over all the country the sky is clear, and scarcely a cloud is to be seen, except during the rainy season, which occurs at different times in the different provinces. The winds that blow over the deserts, are dry; and often so hot, that travellers are in danger of suffocation, from their effects. The most dangerous is the famous *samoom* or *samiel*, a whirlwind which prevails about the confines of the great central desert. The approach of this is indicated by an unusual redness in the sky, and the smell of sulphur is felt as it passes. Instant suffocation, followed by immediate putrefaction of the body, is produced by its influence. To avoid these effects, men throw themselves flat on the ground, and the beasts thrust their noses into the sand, till the pestilential vapour, which moves at some height, has passed.

† 4. So much coffee is produced, that 5000 or 6000 tons are annually exported. Gum-arabic, myrrh, and frankincense, though procured from Arabia, are not produced there, but in Africa. The spices and perfumes of Arabia Felix, the south and south-east of the country, have been celebrated since the earliest times. The kind of grain called *durra* or *doura*, which is a sort of coarse millet, constitutes the chief article of food among the inhabitants. This grain is astonishingly productive, yielding in the well-cultivated districts of Yemen, an increase of one hundred and forty fold; and, in some places, even from two to four hundred.

‡ 5. The finest of the Arabian horses are reared by the Bedouins, in the northern desert. They are kept in the same tents with their master, are treated with the same tenderness and familiarity as his children, and are trained to habits of gentleness and attachment. They are taught only to walk or to gallop; and when they feel the touch of the hand or the heel, they dart away like the wind. They are able to bear the greatest fatigue, and will pass whole days without food. If their rider be dismounted, they stop till he recovers his seat; or, if he fall in battle, they remain by his side, and neigh for assistance. They are neither large nor beautiful, and yet they sometimes bring from £100 to £300.

The camel is as valuable to the Arabian, as the rein-deer is to the Laplander. He can perform a journey of several days through parched sandy deserts, without either eating or drinking, and carries at the same time a burden of from 500 to 1000 pounds in weight. The milk of these animals is copious and nourishing; and their flesh, particularly when young, is palatable food. Their dung is used for fuel; and their hair, which is renewed every year, is manufactured by the women into garments and tents. The swiftest have only one bunch on their backs, and are called dromedaries. Some of these will travel more than a hundred miles a day, for several successive days. The camels are peculiarly useful in the trade which is carried on in the interior of Arabia, and which is the most valuable part of the commerce of the country. They carry on their backs both the merchant and his wares, for many hundreds of miles, through burning deserts, in various routes; and they have thus conveyed annually, for a long period, 200,000 people to Mecca, from Syria, Egypt, Yemen, and Lasha, to pay their homage to the Prophet in the temple, and to increase their property by the profits of trade.

Besides the animals above mentioned, there are oxen, gazelles, monkeys, hyenas, jackalls, panthers, wild boars, and wolves. There are also countless swarms of locusts, which darken the air as they fly; and wherever they alight, they destroy every vegetable production that comes in their way. Gold is said to have been formerly found in Arabia, in vast quantities; but the various metals are now imported from other countries.

is one superior sheik in each tribe, who governs the inferior ones with like authority. In Yemen, and the more fertile districts, there are various monarchies of greater or less extent.

8. *Religion.*—The religion is Mohammedanism; and there are various sects, which are strongly opposed to each other.*

9. *Character.*—The Bedouins are robbers by profession; but, unless they be resisted, they do not murder travellers, or injure their persons. They are hospitable and generous, but exceedingly vengeful. The inhabitants of the towns and cultivated districts, have the good and bad properties of the Bedouins in a less degree, and they are generally deceitful.†

10. *Historical Sketch.*—Little, either authentic or important, is known of the history of Arabia, till the days of Mohammed. This extraordinary man, who was born in Mecca in the year 569‡ of our era, propagated a new system of religion, that seemed likely to overturn Christianity itself. Wonderful success, for some time, attended the exertions of the new sects; and they carried their victorious arms into the adjoining parts of Asia, and into Africa and Spain.§ While, however, Arabia was thus giving a new religion to a great portion of the world, it came itself to be comparatively neglected; its warriors preferring more favoured climes for the seats of their empires. During the sixteenth century, it was held in partial subjection by the Turks; but, at the end of that time, it regained its independence. From that period, till the civil wars arising from the establishment of the new sect of the Wahabees, little has occurred that has been of much importance, except to the Arabians themselves.

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* 6. One of the most remarkable of these sects is that of the Wahabees, established during the latter part of the last century, by Abd-el-Wahab, and his son Mohammed. The doctrines of this sect have been propagated extensively by the sword, in Arabia; and are professed over all the desert, between Syria and the Persian and Arabian Gulfs. Mecca and Medina have also fallen under the power of the Wahabees; and the tombs of many of the early founders of Mohammedanism, which were worshipped by pilgrims, have been destroyed, and the resort of the pilgrims interrupted. Their religion is nearly a system of Deism, with few external observances. It professes to reform the prevailing faith, admits the divine origin of the Koran, and that Mohammed was a prophet, but denies that he is to be addressed as an intercessor. It also relieves its votaries from the necessity of pilgrimages and frequent prayers; but it retains the important political dogma, that those who do not embrace it, are to be exterminated.

† 7. The houses are in general wretched. Even in the principal cities, a great proportion of them are made of mud, and thatched with grass. They are also without windows, and for doors they have grass mats. The people eat very little animal food, and indulge in no luxuries. In eating, they have neither knives, forks, spoons, nor plates; but use their hands, and all sup out of the same dish.

‡ 8. The Mohammedans reckon events in history by the era of the *Hejira*, or flight of Mohammed, in the year 622, from Mecca to Medina, to escape from his enemies. As they use the lunar year, any year of the Hegira will be reduced to the corresponding one of the Christian era, by multiplying it by the decimal fraction ·9692, and adding 622 to the product.

§ 9. These conquerors, as they issued forth from the deserts of Arabia, were called *Saracens*, from the Arabic word which means a desert. For the same reason, the principal desert of Africa is called Sahara.

Exercises on the Map of Arabia.

How are Medina, Mecca, and Mokha, situated in respect to each other? What towns of Asiatic Turkey have nearly the same longitude as Mecca? What proportion of sea-coast has Arabia? What are the distances from Mecca to Medina and Jerusalem? What are the latitude and longitude of Muskat?

XLI.—PERSIA.

1. *Boundaries.*—Persia is bounded on the west by Asiatic Turkey; on the south-west, by Arabia and the Persian Gulf; on the south, by the Indian Ocean; on the east, by Afghanistan; and on the north, by Tartary, the Caspian Sea, and Asiatic Russia.*

DIVISIONS.	CHIEF TOWNS.
Erivan, or Persian Armenia	Erivan
Adzerbidjan	Tabreez or Tauris, Maragha
Ghilan	Reshd
Mazanderan	Asterabad, Balfrush
Western Khorazan . . .	Meshed
Irak-Adjemi	Ispahan,† Teheran, Yezd, Hamadan

Questions on the Notes to Section XL.

1. Between what latitudes and longitudes does Arabia lie? What are its length and breadth?
2. Where is the desert of Mount Sinai? What is its nature? Of what is Mount Sinai composed? What is the nature of the Arabian deserts? What are oäses?
3. Of what kind are the winds that blow over the deserts? Describe the samoom and its effects. How are these effects avoided?
4. What quantity of coffee is annually exported? For what is Arabia Felix celebrated? What is the chief article of food for the people? What is the produce of this grain?
5. Where are the finest Arabian horses produced? How are they reared and trained? What are their properties? At what price do they sell?
   What is the camel able to do? What do they supply to the people? What kind are the swiftest? In what trade are they peculiarly useful, and in what respect?
6. When was the sect of the Wahabees established? To what extent has it been propagated? What are its principal doctrines?
8. How do the Mohammedans reckon time? How are dates according to their reckoning reduced to ours?

* 1. The precise limits of Persia are not well ascertained; but the principal part of it lies between 25° and 40° of north latitude, and between 45° and 60° of east longitude. The part described in this section, is sometimes called Western Persia, to distinguish it from Afghanistan or Eastern Persia. In addition to the provinces mentioned in the text, Mekrân yields a partial submission to Persia; but has, at the same time, a prince of its own.

† 2. Ispahan became the seat of government in the sixteenth century; and retained that distinction till a few years ago, when Teheran was made the royal residence. Ispahan was formerly a large and fine city; containing, at the lowest computation, 600,000 inhabitants. In 1722, however, it was taken and plundered

DIVISIONS.	CHIEF TOWNS.
Persian Koordistan . . .	Senneh
Farsistan	Sheeraz
Kerman	Kerman or Sirdjan
Khusistan	Shuster
Laristan	Lar, Bender Abbas or Gomberoon

2. *Face of the Country.*—Persia is very mountainous, and lies high; except near the Caspian Sea, the Persian Gulf, and the Indian Ocean. Nearly a third of the country consists of salt or sandy deserts. One of the most remarkable mountains, is that of Ararat, in the north-west.*

3. *Rivers.*—Near the boundaries of Persia, are the Euphrates and Tigris or Hiddekel; also the Kur, and the Aras or Araxes, which unite, and flow eastward into the Caspian. The country, however, has few rivers, and the scarcity of water is greatly felt.

4. *Climate.*—Except in the mountainous districts, the heat in summer is very great, particularly in the low grounds near the Caspian Sea and the Indian Ocean. In the high central parts, the winters are very cold, and there are great storms of snow.

5. *Soil and Produce.*—Much of the soil is naturally fertile; producing, when properly watered, wheat, rice, and other grain. Scarcely a twentieth of the country, however, is cultivated; and the people have little knowledge of agriculture.

6. *Animals.*—Besides horses, camels, black cattle, sheep, and

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by the Afghans; and, in consequence of this and other misfortunes, its population was reduced to about 100,000. It has since increased, and is now supposed to contain twice that number of inhabitants. Teheran, or Tehran, has a population of 60,000 or 70,000, except when the king retires from it to escape the summer heats; and it is then reduced to about 10,000. Tabreez was, for several centuries, the residence of the Persian kings, and contained a population of half a million. It has however, suffered severely in war; having been taken and sacked eight times, by Turks, Tartars, and Persians. In 1727 and 1787, also, it suffered dreadfully from earthquakes; most of its buildings having been levelled with the ground, and 100,000 of its inhabitants having been destroyed. Its present population is about 30,000.

* 3. This is supposed to be the mountain mentioned in Scripture, on which the ark rested after the deluge; and the Garden of Eden is thought to have been a tract of country in the basin or valley of the Euphrates and Tigris. In consequence, however, of the changes in language, and perhaps in the earth itself, it is impossible to arrive at any certain conclusion on the subject. The great salt desert lies between Khorazan and Irak. This large tract is, in many places, covered with a layer of crystallized salt, an inch thick. It contains, also, nitre and other salts; and these and the common salt impregnate the neighbouring rivers and lakes. This and the sandy desert, which lies south-east of it, occupy a space of 140,000 square miles.

other tame animals; there are lions, tigers, bears, wild boars, &c.*

7. *Minerals.*—One of the most remarkable of the Persian minerals, is the Tabreez marble, a transparent stone, beautifully variegated, which is formed by the petrifaction of the water of a spring. There are also mines of iron, copper, and silver.

8. *Population.*—The population is thought to be about twelve millions.

9. *Government.*—The government is despotic, and the kings are almost always tyrants.†

10. *Literature, &c.*—The Persians are unacquainted with the modern discoveries of the Europeans in science. Education, however, is so cheap, and there are so many schools, that the children even of the poorest tradesmen receive the rudiments of instruction.‡

11. *Religion.*—The religion is Mohammedanism, in its mildest and most rational form.§

12. *Character, &c.*—The Persians who have fixed residences, are lively and polite; but they are generally blamed for falsehood and duplicity. The wandering tribes are sincere and brave, but rude and violent.

13. *Historical Sketch.*—The first Persian monarchy was founded by Cyrus, 559 years before Christ; and overturned by Alexander the Great of Macedon, 228 years after. It then continued, for a long period, subject partly to the Greeks, and partly to the Parthians; but, in the year 229 of the Christian era, a second monarchy was founded by Ardisheer or Artaxerxes, a common soldier. About the year 640, Persia was conquered by the

* 4. The Persian horses are so strong, and so capable of enduring fatigue, that some of them have been known to travel nine hundred miles in eleven successive days. The tail of the Persian sheep is large and of a flat shape, and often contains thirty pounds of fat. The silk-worm is extensively reared; and the weight of silk, annually produced, is computed at four millions of pounds.

† 5. The two prime ministers are the *Vizier Azem*, or Grand Vizier, and the *Ameen a Doulah*, or chief treasurer. These are always men of low origin, and are often disgraced or executed. The king assumes pompous titles, such as "the shadow of the Almighty"—"the glory of the state and of religion;" and all his edicts are signed "by him whom the universe obeys." The common title of chiefs in Persia, is *Khan* or lord. Another title is *Mirza*, which is given to sons of lords. When applied to persons of the royal blood, it follows the name; but in other cases, it precedes it.

‡ 6. There are also *madrassas* or colleges, in which moral philosophy, metaphysics, and theology, are taught. Astronomy is studied according to the Ptolemaic system, with a view to astrology. Persia has produced some excellent poets, particularly Ferdosi, Saïi, and Hafiz. In this country, story-telling is a regular, and often a lucrative occupation. The king has always a story-teller in attendance, even when at the head of his army in war, to amuse his leisure hours, or beguile his cares with tales and romances; and the same story is never allowed to be told a second time, on pain of punishment.

§ 7. The Persians are of the Sheah sect, maintaining that Ali should have succeeded to the sovereign power on the death of Mohammed, and rejecting all the doctrines and observances introduced by the caliphs, whom they consider usurpers. They are regarded as heretics by other Mohammedans, and the bitterest enmity exists in each party against the other. The general doctrines are the same; but there are many minute differences.

Arabians; and the inhabitants were forced to embrace Mohammedanism, or fly from the country. In the ninth century, the country again became independent. After this, there were various changes and revolutions; and, in 1221, it was conquered by the celebrated Tartar prince, Zenghiz Khan, who at his death assigned it to one of his sons. It was again conquered, in 1392, by the famous Timour or Tamerlane, who in one massacre, in Ispahan alone, caused 70,000 heads to be cut off. After various changes, one of the most distinguished monarchs, Shah Abbas, began to reign in 1585; and, in a reign of 43 years, greatly advanced the interests of his kingdom. In 1722, the Afghans revolted, and conquered Persia; but they were at length overcome and expelled by Thamas Kooli Khan, a person of low extraction, who raised himself to the throne, under the name of Nadir Shah. Since that time, the nation has been generally in a state of turbulence; and its power has been diminished, partly by cessions to Russia, and partly by the erection of the kingdom of Afghanistan, a considerable portion of which formerly belonged to Persia.

Exercises on the Map of Persia.

How are Ispahan, Teheran, and Tabreez, situated in respect to each other? Also Sheeraz, Gomberoon, and Asterabad? What are the latitude and longitude of Teheran? What towns of Persia have nearly the same latitude as Aleppo?

XLII.—AFGHANISTAN.*

1. DIVISIONS.	CHIEF TOWNS.†
Caubool, or Afghanistan Proper .	Caubool, Peshawur
Seistan or Seghistan	Jullalabad

Questions on the Notes to Section XLI.

2. When did Ispahan become, and when did it cease to be the seat of government? Give an account of it. What is the population of Teheran? What population had Tabreez formerly? How often was it taken? What injuries did it suffer from earthquakes, and when?
3. Give an account of the great salt desert. What space is occupied by it and the adjoining sandy desert?
4. At what rate have Persian horses been known to travel? What is remarkable respecting the Persian sheep? What quantity of silk is annually produced in Persia?
5. What titles does the king of Persia assume?
6. What is taught in the Persian colleges? What poets have been produced in the country? What person is always in attendance on the king to amuse him?

* 1. This country is sometimes called Eastern Persia, sometimes the kingdom of Caubool, and sometimes the kingdom of Candahar. From its unsettled state, its boundaries are uncertain; but the chief part of it may be regarded as extending, at present, from the west of Herat, in east longitude 60°, to the west of Cashmere, in longitude 72° east; and from the mouth of the Indus to the thirty-eighth parallel of north latitude. Cashmere, which formerly belonged to this kingdom, is now independent. Its capital, Cashmere, contains 150,000 or 200,000 inhabitants.

† 2. Of these towns, Kandahar is supposed to contain 150,000 inhabitants; and Peshawur, Herat, and Caubool, the capital, 100,000 each.

DIVISIONS.	CHIEF TOWNS.
Eastern Khorazan	Herat
Eastern Mekrân	Kidj
Balkh	Balkh
Kandahar	Kandahar
Sindé	Hyderabad, Tatta
Part of Lahore	Lahore
Mooltan	Mooltan

2. *Mountains, &c.*—The chief mountains are the Hindoo Coosh, or Indian Caucasus, and the Solimân ridge. The country contains many fine fertile plains and valleys.

3. *Rivers.*—The principal rivers are the Indus or Sind, which runs southward into the Indian Ocean; and the Etymander or Heermund, which flows westward into Lake Zerrah in Seistan. There is also the Jihon or Oxus, which rises in the northern part of this kingdom, and then flows through Independent Tartary, into the Sea of Aral.

4. *Climate.*—In some places, the heat is great in summer; but in much of the country, the climate is temperate.

5. *Population.*—The population is thought to be twelve or fourteen millions.

6. *Government.*—The king is absolute; and under him, there are many princes, who are sovereigns of particular provinces, and some of whom yield but a slight degree of subjection.

7. *Religion.*—The established religion is the Mohammedan, but others are tolerated; and Hindoos, who are numerous, are admitted to all offices of trust, without distinction.

8. *Character, &c.*—The Afghans, properly so called, resemble the Persians in manners, customs, and character; while the Hindoos resemble their countrymen in India.

9. *Historical Sketch.*—About 1722, the Afghans threw off their allegiance to Persia, and reduced most of that kingdom under their power. They were expelled, however, by Kooli Khan from the present kingdom of Persia; but they retained the eastern provinces, and they continue to possess them at present. About 1747, Achmet Shah Abdullah, the founder of the present dynasty, began to reign. He added much to his dominions, by conquests in India; and he penetrated so far into that country, that he six times plundered Delhi. Since 1792, the country has been involved in almost continual civil wars, arising from disputes about the succession to the throne; and, in consequence of this, its power has been declining.

Exercises on the Map of Afghanistan.

How is Afghanistan situated in respect to Persia and India? What towns of Persia and Asiatic Turkey have nearly the same latitude as Cauhool? What town of Asiatic Russia has nearly the same longitude?

XLIII.—INDIA.

1. *Boundaries.*—India, or Hindostan, is bounded on the north and north-east by the Hindoo Coosh and Himalaya Mountains; on the east, by the river Brahmapootra; on the west, by the Indus; and on the other sides, by the sea.*

DIVISIONS.	CHIEF TOWNS.†
I. Northern Hindostan:	
1. Cashmere	Cashmere or Sirinagur
2. Nepaul	Catamandoo, Almora
3. Bootan	Tassasudon
II. Hindostan Proper:	
1. Lahore	Lahore, Amretsir
2. Mooltan and Sindé .	Mooltan
3. Ajmeer	Ajmeer
4. Delhi	Delhi
5. Agra	Agra, Farruckabad
6. Allahabad	Allahabad, Benares
7. Bahar	Patna
8. Oude	Lucknow, Fyzabad
9. Bengal	Calcutta, Dacca, Morshedabad, Serampore

Questions on the Notes to Section XLII.

1. By what other names is Afghanistan sometimes called? What is the present political state of the province of Cashmere? What is the population of its capital?
2. What are supposed to be the populations of the principal towns of Afghanistan?

* 1. This great and important country lies between the eighth and thirty-fifth degrees of north latitude, and between the sixty-eighth and ninety-second of east longitude. Its length, from Cape Comorin to the northern extremity, is nearly 2000 miles; its breadth, 1500; and its superficial content, above a million of square miles.

† 2. Northern Hindostan is a long narrow tract, extending north-westerly from the Brahmapootra to the Indus, between the Himalaya and Seevalic mountains. Hindostan Proper lies north of the river Nerbudda, and of a line drawn from its source to the mouths of the Ganges. The Decan is bounded on the south by the rivers Krishna and Malpurba. According to this division, a small part of the province of Bejapoor is in the fourth great division. The country through which the principal branches of the Indus flow, is often called the Punjab; and that between the Jumnah and Ganges, the Dooab.

10.	Malwah	Indore, Oojein
11.	Guzerat and Cutch .	Surat, Cambay, Brodrah
III.	Decan:	
1.	Aurungabad . . .	Bombay, Aurungabad, Dowletabad
2.	Kandesh	Boorhanpoor
3.	Beder	Ahmedabad
4.	Hyderabad . . .	Hyderabad, Golconda
5.	Nandere	Nandere
6.	The Northern Circars	Ganjam, Visagapatam, Masulipatam
7.	Berar	Ellichpoor
8.	Gundwana . . .	Nagpoor
9.	Orissa	Cuttak, Juggernaut or Pooree
10.	Bejapoor	Poona, Bejapoor or Visiapoor, Bijanagur or Bisnagur
IV.	South of India:	
1.	The Carnatic . .	Madras, Pondicherry, Tanjore
2.	Mysore	Seringapatam
3.	Canara	Battecola, Barcelore
4.	Malabar	Calicut, Tellicherry
5.	Baramahal . . .	Kistnagherry
6.	Coimbetoor . . .	Coimbetoor
7.	Dindigul	Dindigul
8.	Cochin	Cochin
9.	Travancore . . .	Anjengo, Travancore

2. *Seaports.*—Surat, Bombay, Goa, Calicut, Pondicherry, Madras, Calcutta, &c.

3. *Mountains, &c.*—The principal mountains are the great Himalaya chain, the highest in the world, on the north-east; and the Gauts, in the south. The sea-coasts are flat; and Hindostan Proper is, in general, level: but a large proportion of the rest of the country, is mountainous.*

* 3. The Himalaya or Himālah mountains, anciently Imaus, are so called from the Sanscrit word *hem*, which signifies snow, their highest summits being always covered with that substance. Several peaks adjoining Nepaul, have been lately measured by British officers, and their heights have been found to be from 22,000 to 27,000 feet. The measurements, however, are subject to considerable uncertainty. The western Gauts are parallel to the Malabar coast, and the eastern lie near that of Coromandel. The country between them is intersected by numerous

4. *Rivers.*—The Ganges and Brahmapootra rise from nearly the same place in the Himalaya mountains; and, after separating to the distance of nearly 1200 miles, unite and flow into the Bay of Bengal. The Indus lies on the north-west. The Nerbudda runs westerly into the Gulf of Cambay; and the Ge'avery and Krishna flow eastward into the Bay of Bengal. Several of the branches of the Ganges and Indus, are considerable rivers; particularly the Jumnah, Goggrah, and Sutlege.*

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other chains extending in different directions; and many parts of it are accessible only by narrow, and often difficult passes or defiles. From this circumstance, these mountains derive their name, the term *gaut* signifying a *passage* or *gate.* This country contains also several plains of great magnitude. One of the principal of these is the vast plain of the Ganges, which extends from the Seevalic mountains to the sea, a distance of 800 miles, gradually widening till in Bengal its breadth is 250 miles. Another stretches northerly above 150 miles from Delhi to Sirhind. On the east of the Indus also, there is a great sandy desert, which is 550 miles long, and from 100 to 160 broad; and a salt morass, which is thought to have been formerly covered by the sea, extends several hundred miles from the Gulf of Cutch along the western boundary of Guzerat, and round the north of Cutch.

* 4. The Ganges, the most noted of the Indian rivers, rises in the Himalaya mountains, about the thirty-first parallel, and has a course of 1500 miles. Among the rivers which it receives in passing through the plains, there are eleven, none of which is smaller than the Thames, and some of them equal the Rhine; and it is computed, that it conveys to the sea about 5000 tons of water, each second, at an average. About 200 miles from the sea, the river divides into mouths or branches, which form its Delta (so called from its resemblance to the capital Greek letter of that name). The southern part of this, called the Sunderbunds, is covered with vast quantities of jungle (a mixture of copse wood with grass and other rank vegetable matter eight or ten feet long), and is the haunt of multitudes of tigers. In the rainy season, the Ganges overflows its banks to the width of 100 miles; nothing appearing but trees, and villages erected on artificial eminences. During this season, the river, above the commencement of the Delta, rises thirty-two feet above its natural level. Lower down the rise is less, as the level of the river is influenced by that of the sea. For 500 miles from the sea, the depth of the water, when the river is lowest, is no where less than thirty feet, and the general breadth of the channel is three quarters of a mile.

This river is regarded by the Hindoos as an object of peculiar sanctity and veneration; particularly at Hurdwar, where it first appears in the plains after quitting the mountains; at the places where other large rivers join it; and where, in any of its windings, it runs northward. It is supposed to flow directly from heaven; and its waters are considered so holy by the Hindoos, that the natives are sworn on them, in the English courts of justice; as Christians are on the Gospels, and Mohammedans on the Koran. They also bathe in its waters, and drink them for the benefit both of the body and soul; and persons on the point of death are often brought to expire with their feet in the river, as it is believed that, by this means, they will secure happiness in a future state. At Hurdwar, pilgrims annually assemble for the purpose of ablution and devotion; and they take advantage of the occasion, for holding a great fair for the buying and selling of merchandise. It is computed, that these causes sometimes bring together no fewer than two millions of people.

Great changes are made by the Ganges in the plain country, especially in Bengal; old channels being often filled up by mud, sand, and the falling in of the banks, and new ones being formed. These effects are chiefly produced during the inundation, when the current flows with great force and rapidity. By this means, the banks are undermined, islands and villages are often swept away, and trees are overturned that have stood for a century. To counterbalance, in some degree, these destructive effects, new islands are often formed. If these be able to resist the succeeding inundations, they are soon occupied by persons who have been driven by

5. *Towns.*—India contains a vast number of towns, many of which are very populous. The principal are Calcutta, Benares, Surat, Madras, Patna, Hyderabad, Dacca, Bombay, Delhi, Poona, and Agra.*

6. *Climate.*—The climate of India is in general hot; but, in some of the elevated districts, it is temperate. In most of the country, there are only two seasons: the dry, when the ground

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the river from their former dwellings, and who sometimes quarrel about the possession of what has thus been provided for their accommodation. These islands are often joined to the mainland by the stopping up of channels; and, on this account, their number is less than might be expected.

The tide ascends the Ganges with great force and rapidity. In the branch called the Hoogly, it flows to a considerable distance above Calcutta, producing a *bore*, or instantaneous elevation, which passes over a space of seventy miles in rather less than four hours; and sometimes causes, at Calcutta, a rise of five feet in an instant.

The Brahmapootra, called also the Sanpoo by the people of Tibet, is thought to have a course of 1650 miles, and to be larger than the Ganges.

* 5. The population of these towns is supposed to be as follows: Calcutta, 500,000; Benares, 600,000; Surat, 600,000; Madras, 300,000; Patna, 300,000; Hyderabad, 200,000; Dacca, 200,000; Bombay, 160,000; Delhi, 150,000 or 200,000; Poona, 150,000; Agra, 60,000.

Calcutta is situated on the Hoogly, about 100 miles from the sea. Though it is now so large, and is the capital of the British dominions in India, it was but a village a century ago. About a quarter of a mile below the town, stands Fort William, the erection of which cost the East India Company about two millions sterling. In Calcutta is the famous Black Hole, eighteen feet square, in which, in 1757, Surajah Dowlah, a Hindoo chief, shut up 146 Englishmen in the evening, 123 of whom were found dead in the morning, after dreadful sufferings from heat and suffocation. The two other seats of the British government in India, are Madras and Bombay.

Delhi was formerly the capital of the Mogul's empire; but it now belongs to the English. In the seventeenth century, it is said to have contained more than a million and a half of inhabitants. It was taken by Nadir Shah in 1739, who spoiled it of its treasures, valued at more than ten millions sterling. Among these were statues of elephants in chased gold, and a throne of massive gold studded with precious stones. The finest building now remaining is the imperial palace, which is 1000 yards long, and 600 broad, and which cost above a million sterling. The apartments of this edifice are most splendid: even the kitchens are finished like drawing-rooms; and there are stables for 10,000 horses. It formerly contained also the beautiful "peacock throne." This was overshadowed by a palm-tree of gold; and a peacock of gold, standing on one of the large leaves, stretched its wings to cover the person on the throne. The tail and wings glittered with superb emeralds; and the leaves and feathers were so thin and delicate, that they waved and trembled with the slightest wind. The fruit on the palm-tree was partly formed of diamonds, and bore the most exact resemblance to the real fruit.

Surat is remarkable for having an hospital for sick, maimed, and aged animals; such as horses, oxen, monkeys, and poultry; and it accommodates even rats, mice, and bugs. In this establishment, ample means are provided for supplying the animals with suitable food and careful attendance. They are, however, much neglected by their keepers.

Agra was once a large and splendid city, but is now greatly reduced. Still, however, it contains some monuments of its ancient magnificence, particularly the palace of the emperor Akber, which is composed of red granite, with columns of white marble, and is reckoned one of the finest buildings in Asia.

The city of Lahore, also, contains another palace of the Mogul sovereigns, which is one of the finest and most splendid in the world. This city, and many others in India, have lost their ancient magnitude and consequence, from the many revolutions to which the country has been subjected; and several that were great and noted, at no very remote period, are now in ruins. The rapid decay of the eastern cities, as has been already mentioned, arises in a considerable degree from the circumstance, that in many of them the dwelling-houses are in general composed of mud, or other perishable materials.

is parched, and vegetation suspended; and the wet, when rain falls in torrents, and inundates the low grounds.*

7. *Soil, &c.*—The plains and valleys of India are not exceeded in fertility by any country in the world. In many places, they contain fine vegetable mould, six feet deep; and yield two harvests in the year. In the higher regions, however, much of the soil is barren. Among the productions of the country, are timber of various kinds, medicinal plants, cotton, rice, and the finest dye-stuffs. The trees also produce delicious fruits, in the greatest profusion.†

8. *Animals.*—The principal animals are horses, asses, black cattle, sheep, camels, elephants, rhinoceroses, apes, monkeys, and almost all the ferocious animals, except the lion. The royal tiger of Bengal is of great size and strength, and is one of the most dreadful animals any where to be found.

9. *Mineralogy.*—India is extremely rich in minerals; producing gold, silver, copper, iron, &c. besides diamonds, and other precious stones.‡

10. *Population.*—In 1820, the population of the British territories in India, was estimated at 83 millions; that of the British allies and tributaries, at 40 millions; and that of the independent states, at 11 millions: making a total of 134 millions.§

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* 6. The rainy season usually commences in April or May, and continues till September or October; but there are considerable varieties in different places. In the valleys of Cashmere, Nepaul, and other parts, which are situated between high mountains, there are winter and summer, with the intermediate varieties of spring and autumn, as in the more favoured countries of Europe.

† 7. One of the most remarkable productions of India, is the *banyan tree*, which throws off numerous branches that afterwards take root, and form new trunks. One of these, called the *Cubbeer Burr*, grows in Guzerat, on the bank of the Nerbudda, and is celebrated over all Hindostan. Its age is unknown; but it is supposed to have existed, and to have been at least as large as at present, in the time of Alexander the Great. Much of it has been carried away, at different times, by floods; yet it has still three hundred and fifty large trunks, and more than three thousand smaller ones; and the part of it that remains, measures nearly two thousand feet round the principal stems, and thus covers an area of about seven acres, besides a large additional space over which the projecting branches extend. Beneath its branches, there are beautiful walks, and cool retreats from the scorching heat; and there is shelter in its shade for eight or ten thousand people. It has large, soft leaves, of a fine green colour; and produces small figs, which afford nourishment to monkeys, squirrels, peacocks, and various other birds. Multitudes of these animals are constantly in motion among its branches, and enliven the scene. The Hindoos are peculiarly fond of these trees, and almost worship them. The Brahmins spend much of their time under their shade; and there they perform their devotions, when no structure for that purpose is nigh.

‡ 8. Gold is contained in the sands of various rivers, from which it is separated by washing. The diamonds of India are the finest in the world; and are found in Bengal, Orissa, Berar, the Carnatic, and several other places. Golconda has been long celebrated for these gems, as they were brought to it to be polished and fashioned for sale; but it produces none itself, and perhaps never did.

§ 9. The British possessions are divided into the three presidencies of Bengal, Madras, and Bombay: the first containing a population of 57½ millions; the second, of 15 millions; and the third, of 2½ millions. The British have also acquired, since 1815, territories containing eight millions. One of the principal of the British allies is the Nizam, whose dominions lie in the centre of the Decan, and consist of Hyderabad, Nandere, and Beder, with most of Berar, and part of Aurungabad and Bejapoor. His subjects amount to ten millions. Other allies are the Rajas of

11. *Laws.*—In the presidency of Bengal, the natives are tried according to the Mohammedan law, which was established there before the country became subject to the British. In the presidencies of Madras and Bombay, the Hindoos and Mohammedans are respectively tried by their own laws.*

12. *Manufactures.*—The principal manufacture is that of cotton, for which the country has long been celebrated. Silk and woollen goods are also manufactured, besides various articles for the use of the inhabitants.

13. *Commerce.*—The principal exports are cotton goods, silk, sugar, rice, precious stones, opium, and spices; and the principal imports are wines, spirits, cutlery, stationery, glass-ware, naval stores, and many other articles. Foreign commerce is chiefly carried on with Britain and America.

14. *Education, &c.*—There are schools in almost all the villages, where the children sit in the open air, under the shade of a tree; and are taught reading, writing, and accounts; tracing the characters at first on sand with the forefinger, and after some time on palm-leaves with an iron pen. The Hindoos have been civilized, in a considerable degree, from very early times; and seem to have had some knowledge of science at a remote period.

15. *Religion.*—About a fifth of the inhabitants are Mohammedans; and the rest are, for the most part, of the Hindoo religion.†

Nagpoor and Mysore, and the king of Oude, who have each about three millions of subjects; the Guicowar, in the north of Guzerat, whose capital is Brodrah, and who has two millions of subjects; and more than twenty petty chiefs, particularly the Rajepoot princes about Ajmeer, and the Seiks in the Punjab and part of Multan and Delhi. The independent parts are the dominions of the Scindiah in Malwah, whose capital is Oojein, and whose subjects amount to four millions; the Rajas of Lahore and Nepaul, whose subjects are about three and two millions respectively; and the Ameers of Sindé, who amount to a million. The Indian dominions of the Afghan empire, also, contain about a million of inhabitants. In 1819, the British army in India amounted to about 30,000 Europeans, and 180,000 sepoys, or native soldiers.

* 10. The British continue the use of the old laws, to secure the confidence of the people. The Hindoo laws chiefly in use are those called the Institutes of Menou, the son of Brahma. The administration of justice has been considerably improved by the British; but it is still far from being perfect.

† 11. It would be impossible, in a small compass, to give any adequate idea of the complicated and abominable religious system of the Hindoos. In the character of its mythology, and in the objects and modes of its worship, it is more extravagant, cruel, and disgusting, than the religion of the Greeks, Egyptians, or any of the other nations of antiquity. They believe in three principal deities: Brahma, the creator; Vishnu, the preserver; and Siva, the destroyer; and in many others, particularly a great number of malignant demons. They also worship almost every creature that has life. Some of these, such as the cow, the ox, the ape, the serpent capella, and a bird of prey called garuda, are objects of more particular veneration than others. In the vedas, or sacred books, even their supreme deities are represented as guilty of every species of debauchery, and as debased by all the weakness and evil propensities of men. Their worship, too, consists in many instances of the grossest and most disgusting scenes; and the images that are worshipped are often of the most indecent kind. One of the most deplorable scenes of superstition, is exhibited at Juggernaut in Orissa. Juggernaut is a name of Vishnu; and, from this circumstance, the temple and the town get the same name. On a car, 80 feet

16. *State of Society, &c.*—The Hindoos are divided into four principal *castes:* 1. The Brahmins, or religious caste; 2. The Kshatriyas, or soldiers, including the princes, and sometimes called the caste of Rajas or Rajepootras; 3. The Vaisyas, or husbandmen; and, 4. The Sudras, or labourers. These castes are regulated by their respective laws; and no person is allowed to change from the caste to which he belongs by birth: but, if any one lose his caste from transgressing its rules, he is held in detestation by every Hindoo, and lives ever after in degradation, which extends also to his posterity.*

17. *Character, &c.*—The prevailing characteristic of the Hindoos, is indolence. They are moderate in food and clothing, living chiefly on rice and water; and their dress in general consists of a simple piece of linen or cotton cloth. Their houses also are commonly of the slightest and cheapest construction. Princes and wealthy individuals, however, often live in great splendour and luxury.

18. *Curiosities.*—At Ellora, near Dowletabad, there is a remarkable groupe of Hindoo temples cut in the rock, and displaying beautiful columns, cornices, and other architectural ornaments. In the island of Elephanta, near Bombay, also, there is a cavern, containing a temple 130 feet long and 123 wide, which is supported by twenty-six massy columns cut out of the solid rock. Similar caverns are found in the island of

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high, is placed the image of this deity, and on two similar ones are those of his brother and sister. At the festival of Rutt Jattra, many hundred thousand pilgrims assemble, some of them from very remote parts; and they believe, that if they die any where within ten miles of the temple, they will obtain eternal happiness. The vast cars are dragged along by the multitude with cables; and frequently some of the infatuated devotees throw themselves below the wheels, and are crushed to death. From this cause, as well as from deaths in consequence of fatigue, want, and accidents, all the approaches for forty or fifty miles present multitudes of human bones; the bodies of those that thus perish not being buried, but being left to be devoured by dogs, vultures, and other animals. Other parts of the worship present the most disgusting scenes of debauchery and indecency; and these, and other similar practices, call loudly for exertions on the part of Christians to do away such enormities, and introduce in their stead the pure doctrines and morals of Christianity. The barbarous practice, also, of widows burning themselves on the funeral piles of their husbands, is well known, and still not unfrequently occurs. The inhuman destruction of female infants, even by their mothers, was formerly very common; but it has lately been checked, in a considerable degree, by the interference of the English.

* 12. The division into castes, or *tchadi*, is of extreme antiquity, and has been maintained with great strictness. There are, however, mixed castes, arising from intermarriages; and war, and other circumstances, have on some occasions produced encroachments of the castes on one another. Persons of the mixed castes are subjected to great humiliation, and are obliged to keep at a distance from other Hindoos. Still more degraded, however, are the Pariahs, as those are called who have lost their caste. These are held in abhorrence, and treated with the utmost indignity, by all the other castes. They are not allowed to live in a town: their clothes must be those of persons deceased: they must carry out the corpse of any one who dies without kindred: they are employed as common executioners: and the shadow of one of them passing over any article of food, or even water, defiles it. By such treatment, as may naturally be expected, they are rendered disgusting objects, and are sunk into ignorance, and low vices of every kind.

Salsette, near the same place, and elsewhere. These are all extremely ancient.

19. *Historical Sketch.*—Like other countries, India was at an early period divided into many states, which were engaged in continual wars among themselves; but, from religious considerations, neither they nor their descendants ever carried war into the neighbouring countries, though they have been often invaded by external foes. Among their foreign invaders in ancient times, were Sesostris, Darius Hystaspes, and Alexander the Great. The conquests of these princes, however, were only of partial extent and temporary duration. In the year 1000, Mahmood, of Ghiznee or Ghazni, now Afghanistan, subdued most of Hindostan; and, in 1398, Tamerlane overran India in five months, and carried off immense spoil from Delhi. It was invaded again in 1526, by Bauber, one of Tamerlane's descendants, who became emperor of most of Hindostan. This prince was the first who was known in Europe by the title of the Great Mogul. His grandson Akber, who reigned from 1555 to 1605, was one of the wisest and most distinguished of the Mogul sovereigns; and he greatly enlarged the empire, and introduced many improvements. His great-grandson Aurengzebe, after dethroning his father, became emperor in 1658, and reigned till his death in 1707. He was a cruel tyrannical prince, and his reign was turbulent. Under his successors, the empire, falling into a state of anarchy, rapidly declined; and suffered severely from the invasions of foreign enemies, particularly the Persians, under Nadir Shah, in 1739; and the Afghans, under Abdalla, about twenty years after. The governors of the different provinces also, taking advantage of the general confusion, rendered themselves independent, and seized such districts as they could. From these various causes, this empire, which in the time of Aurengzebe had a population of more than sixty millions, was so reduced in 1750, as to consist of only the city of Delhi, and a small territory around it; and some time after, even this remnant of the empire sunk under the attacks of different enemies. In the beginning of the present century, however, Delhi, as well as Agra, came into the possession of the British; and, from the settled government then established, much improvement has already resulted. It would be impossible, in a sketch like the present, to give even a tolerable outline of the progress of British power in India. It may suffice to say, that the English began to trade with that country in the reign of Elizabeth, in 1583, and that the East India Company was established in 1600; that, previously to the reign of George III. the British were gradually extending the limits of their possessions; but that, during his reign, their arms were attended with the most splendid success; and that, by this means, the greater part of India is now reduced under their power.

Exercises on the Map of India.

What is the general direction of the Ganges? Of the Indus? What are the latitudes and longitudes of Calcutta, Madras, and Bombay? How are they situated in respect to each other, and at what distances asunder? How is Juggernaut situated in respect to Calcutta, and at what distance? How far is Golconda from the sea? How far is Agra from Delhi? Surat from Bombay? Seringapatam from Madras? What towns have nearly the same latitude as Calcutta? What places have nearly the same longitude as Cape Comorin? What are the directions of the Malabar and Coromandel coasts?

Questions on the Notes to Section XLIII.

1. Between what latitudes and longitudes is India situated? What are its length, breadth, and content?
2. How are the great divisions of India situated? What are the Punjab and the Dooab?
3. Whence are the names Himalaya and Imaus derived? What are supposed to be the height of some of the Himalaya mountains? Where are some of the great plains and deserts of India situated? What are their dimensions?
4. Where does the Ganges rise? What is the length of its course? What are the magnitudes of the rivers which it receives? How much water does it convey to the sea each second? What is the extent of its delta? What part is called the Sunderbunds? What is jungle? To what extent does the Ganges overflow its banks in the rainy season? How far does it rise above its ordinary level? What are the depth and width of the river?

   What parts of the river are most venerated by the Hindoos? Whence do they suppose it to flow? How is its water used in the courts of justice? Give other instances showing the veneration of the people for this river. How many people annually assemble at Hurdwar? For what purpose do they assemble?

   What changes are produced in the plain country by the Ganges? How are these changes effected? Describe the effects of a contrary kind that are produced. What prevents the islands in the river from being so numerous as might be expected?

   Describe the progress and effects of the tide in the Ganges.

   How long is the course of the Brahmapootra thought to be?
5. How many towns of India have more than 100,000 inhabitants each? What are the populations of some of the largest?

   How far is Calcutta from the sea? On what branch of the Ganges is it? What was it a century ago? What did the erection of Fort William cost? Where is it? Give an account of the Black Hole of Calcutta.

   What was the former rank of Delhi? What was its population formerly? What kind of spoils, and of what value were carried away from it by Nadir Shah? Describe the imperial palace. The peacock throne which it contained.

   For what is Surat remarkable? How are the animals in the hospital taken care of by their keepers?

   What great buildings are contained in Agra and Lahore?
7. What is the nature of the banyan tree? How long is the Cubbeer Burr thought to have existed? How many trunks of it still remain? What space does it cover? How many people may be sheltered under it? What animals are always among its branches?
8. Where are the diamonds of India found? Are any produced at Golconda?
9. Where are the dominions of the Nizam? What are the sepoys? What was the amount of the British army in India in 1819?
10. What Hindoo laws are principally in use?
11. What is the Hindoo religion in comparison of the idolatrous religions of ancient times? In what deities do the Hindoos believe? What other objects do they worship? What is Juggernaut? How do the people think they will obtain eternal happiness through this deity? How do some of them commit suicide? For how far around the temple are human bones to be seen, and why? What remarkable practice of widows is there in India? What barbarous practice has been checked by the English?
12. What circumstances have produced mixed castes in India? Are persons belonging to these respected? Who are the most degraded of the people? How are these treated by the others? Where must they live? What must they wear? What humiliating services must they perform?

XLIV.—CEYLON.*

1. *Situation, &c.*—The fine island of Ceylon, or Singala, is situated in the Indian Ocean, and is separated from the southern part of India by Palk's Strait and the Gulf of Manaar.

2. *Face of the Country.*—The coasts are low and flat; but the interior contains many mountains, some of which are beautiful and verdant, others rocky and peaked.

3. *Towns.*—The principal towns are Columbo, Kandy, and Trincomalee.†

4. *Climate.*—Winter is unknown; and the change in the degree of heat, during the year, is less than in almost any other place. The winds, or monsoons, blow from the north-east, during our winter; and from the south-west, the rest of the year.

5. *Produce, &c.*—Some of the principal productions of this country are cinnamon, cocoa-nuts, sago, rice, oranges, bamboos, sugar-canes, and tobacco. There are great numbers of elephants, and other quadrupeds; and useful and beautiful birds are very numerous. The country is also uncommonly rich in gems, such as rock crystal, amethyst, cat's-eyes, topaz, garnet, &c.; and the coasts furnish large quantities of fine pearls.‡

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* 1. This island may naturally follow India, from its nearness to it, and from its belonging to the king of England, while India belongs to the English East India Company. Its extent is about two thirds of that of Ireland; and the latitude and longitude of its centre, are about 8° north, and 81° east respectively.

† 2. Of these towns, Columbo is the largest, containing 50,000 inhabitants. It is well built, after the European plan; and is chiefly inhabited by English, Dutch, and Portuguese. The harbour of Trincomalee is one of the finest in the world. Kandy was the residence of the king of Ceylon. The houses are of mud, and the town has a mean appearance. It contained many temples; one of which, from having in it what is said to be a tooth of the god Buddha, was held in peculiar estimation. The apartment which contains this relic, is most splendidly ornamented. The doors have polished brass pannels, and curtains before and behind them. The roof and walls are lined with gold brocade; and scarcely any thing meets the eye but gold, gems, and beautiful fragrant flowers. Among many other ornaments, there is a bird formed entirely of diamonds, rubies, blue sapphires, emeralds, and cat's-eyes, set in gold.

‡ 3. "In Ceylon, the stones," it has been said, "are rubies and sapphires; amomum scents the marshes, and cinnamon the forests, and the most common plants furnish precious perfumes. Elephants of the most handsome and valuable kind run in flocks, as the wild boars do in the forests of Europe; while the brilliant peacock and the bird of paradise occupy the place of our rooks and our swallows." Though this is, in some respects, an exaggerated description, yet Ceylon is unquestionably one of the richest places in the world, in the most valuable productions of nature.

The pearl fishery on the coast is much celebrated, and is very valuable. The principal station is on banks off Condatchy, on the western coast. The pearls are found in oysters of a particular kind, which from this circumstance are called mother-of-pearl oysters. These are brought up from the bottom by divers. The fishery com-

6. *Population.*—The population is thought to be rather less than a million.

7. *Historical Sketch.*—The Portuguese discovered Ceylon in 1505, and soon obtained a firm settlement in part of the country. In 1658, the Dutch assisted the natives in expelling the Portuguese, and received in return most of the maritime provinces. In 1796, the Dutch were in their turn expelled by the English, in connexion with the king of Kandy. This prince, who was an inhuman tyrant, provoked a rebellion among his own subjects; and was at length dethroned, in 1815, by the British, who since that time retain possession of the island, and govern it by its ancient laws.

Exercises on the Map of Ceylon.

What are the latitudes and longitudes of Columbo and Kandy? How are Columbo, Kandy, and Trincomalee, situated with respect to each other? What parts of India lie north of Ceylon?

XLV.—CHIN-INDIA.*

1. *Boundaries.*—This large portion of Asia is bounded on the west by Hindostan and the Bay of

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mences in the month of February, and employs 150 boats with 6000 men, for thirty days. When every thing is ready, the diver grasps his nostrils firmly, and is carried rapidly to the bottom, by means of a stone attached to one of his feet; while, with the other foot, he forces down a basket. The stone is then drawn up, for the use of the next diver, by means of a rope fixed to it; and the person who has descended, collects into the basket, with the utmost despatch, as many oysters as possible. When he can remain no longer under water, he pulls the rope which connects him with the boat, and is immediately drawn up with his basket. Each dip occupies a minute, a minute and a half, or sometimes two minutes; and sometimes five or six, and sometimes a hundred and fifty oysters are collected at one descent. The diver gets a fourth of all the oysters which he brings up. Each oyster usually contains several pearls; and when a large quantity of these is collected, they are assorted by being passed through sieves with holes of different sizes. In 1798, the clear value of this fishery was £192,000; but, on some occasions, it has not exceeded £30,000.

Questions on the Notes to Section XLIV.

1. What is the content of Ceylon compared with that of Ireland? What are the latitude and longitude of its centre?
2. What is the population of Columbo? By whom is it chiefly inhabited? For what is Trincomalee remarkable? Describe the apartment which contains the supposed tooth of Buddha. Describe the bird contained in it.
3. Where is the principal pearl fishery on the coast of Ceylon? Describe the mode of diving for the oysters. How long does the diver continue below water? How many oysters are brought up at each dip? How is the diver paid? How are the pearls assorted? How many men are employed in the fishery? What has been its value on some occasions?

* 1. This country has been called "India beyond the Ganges," "Exterior India," "Indo-China," and, very improperly, "The Eastern Peninsula of India." Malte Brun rejects these names, and, with more propriety, terms it "Chin-India," as if "Chinese India." Its situation, boundaries, and other particulars respecting it, are very imperfectly known; but it is a large country, 1200 or 1300 miles long, and 600 or 800 miles broad, exclusive of the peninsula of Malaya.

Bengal; on the north, by Tibet; on the east, by China, and the Chinese Sea; and on the south, by the Indian Ocean.

DIVISIONS.	CHIEF TOWNS.
Burman Empire . . .	Amerapoora, Ava
Tonquin or Tungquin	Don-Kin or Tonquin
Cochin-China	Hué or Toan-Hoa
Kingdom of Siam . .	Siyuthia or Juthya or Siam, Louvok
Malaya or Malacca .	Malacca*

2. *Climate, Soil, &c.*—In some places, the heat is excessive; in others, moderate. Some parts are scorched and barren: but others, where there is sufficient moisture, are very fertile; producing grain, aromatic, medicinal, and other plants, and fine trees of various kinds.

3. *Animals and Minerals.*—The animals are nearly the same as those of India, with the addition of the ourang outang, a large ape, which bears a near resemblance to man. The country is rich in minerals; producing gold, silver, iron, tin, lead, &c. besides rubies, sapphires, and other precious stones, and marble equal to the finest Italian.

4. *Population.*—The amount of the population is very uncertain. It is small, however, compared with the size of the country, not exceeding perhaps eight or ten millions.

5. *Government.*—In the Burman empire, the government is in the highest degree despotic;† and Tonquin, Siam, Laos, and most of the other states, are governed by absolute sovereigns.

6. *Religion.*—The god Buddha is worshipped by the Burmese, under the name of Godama, or Sommona-Kodom; and they

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* 2. Other towns are Chittagong or Islamabad, Arracan, Prome, Rangoon, Pegu, Cambodia, &c. There are also other divisions of the country, such as the kingdoms of Cassay, Catchar, Pegu, Laos, Tsiompa, &c.; but they do not require particular notice here. Respecting the mountains and rivers, there is great uncertainty; the interior of the country being almost quite unknown to Europeans. The Irrawaddy is a large river, with many mouths and a delta; and in the rainy season, it and the other rivers inundate their banks. There are also the Meinam in Siam, and the Cambodia or Japanese river.

† 3. The Burmese emperor, or king of Ava, assumes an extraordinary degree of state, and receives almost a species of adoration from his subjects. When any thing belonging to him is mentioned, the epithet "golden" is attached to it. When he has heard any thing, it is said to have reached "the golden ears;" a person admitted to his presence, is said to have been at "the golden feet;" and the perfume of roses is described as grateful to the "golden nose." The king of Siam, also, shows himself three times a day, for a few seconds, to his great officers; and they instantly prostrate themselves on the ground before him.

In the Burman empire, the emperor is first in dignity, the empress third, and a white elephant second. This animal has a regular establishment, with ministers, secretaries, and other officers, and a guard of 1000 men. He sleeps on mattresses covered with silk; the vessel out of which he eats, is of pure gold; and his trappings are of gold, studded with large diamonds, and other precious stones. He is believed, by the Burmese, to contain a human soul; which, after millions of previous transmigrations, is about to be absorbed into the essence of the Deity.

worship several inferior deities. They believe in the transmigration of souls; and their worship is free from the barbarous practices that stain the religious observances of the Hindoos.

7. *Character, &c.*—The people are imperfectly civilized; and, while they are active and sprightly, they are often deceitful, and pay little attention to truth. They seem in general to be of Chinese or Tartar origin, except the Malays, who appear to be a distinct race.

8. *Historical Sketch.*—The Burmans were formerly subject to the king of Pegu; but, in the sixteenth century, they established an independent monarchy, which consisted of Ava and Martaban. In 1740, they engaged in a war with the king of Pegu, which terminated in their complete subjugation, in 1752. A Burman named Alompra, however, a man of low extraction, began with only a hundred men; and yet, by his activity and prudence, in a short time he not only made himself master of the former Burman territories, but also overran Pegu, and took the capital. From this period, the Burmese continued to extend their dominions, by successive acquisitions from the king of Siam, and others. In a war of short duration with Britain, which terminated in 1826, they were unsuccessful; and were obliged to yield up Arracan, Tavoy, Mergui, and Tenasserim; and to allow Munnipore, Assam, and some other districts, to be under Rajas appointed by the East India Company. By this means, Britain has acquired a tract of country 300 miles long and 50 broad, lying along the seacoast, south of the delta of the Irrawaddy.

Exercises on the Map of Chin-India.

How is Chin-India situated in respect to the Bay of Bengal? How is Amerapoora situated in respect to Calcutta and Siam? In what direction does Malaya stretch? How are the Andaman and Nicobar Islands situated in respect to Chin-India?

XLVI.—TIBET.

1. *Boundaries.*—Tibet or Thibet is bounded on the east by China; on the south, by the Burman empire and India; on the south-west and west, by India,

Questions on the Notes to Section XLV.

2. Point out other towns of Chin-India besides those mentioned in the text. What rivers are there?
3. What epithet is applied to things belonging to the Burmese emperor? How does the king of Siam behave towards his great officers? How do they behave towards him?
What is the nature of the establishment for the white elephant of the Burman court? Describe the articles belonging to him. Why is he treated with such respect?

Afghanistan, and Bukharia; and on the north, by Chinese Tartary.*

2. *Mountains.*—The principal mountains are the vast Himalaya chain, on the confines of India. There are, also, a great many others; and the country has, on this account, been called the Switzerland of Asia.

3. *Lakes.*—Terkeri, Paltee, and others. Lake Paltee is very remarkable; being, it is said, a ring five miles and a half broad, encompassing an island a hundred miles in diameter.

4. *Towns.*—The towns are small, and not numerous. The principal are Lassa or Dsassa, Latak, and Askardo or Eskerdon.

5. *Climate.*—From the elevation of the country, the cold in winter is extremely great; and, except in low valleys, there is little heat in summer.

6. *Soil, &c.*—The fertile parts produce wheat, pease, barley, and various fruits. Gold is found in mines, and in the sand of rivers; and tinkal or borax, which is peculiar to the country, is procured in a crystallized state in the north.

7. *Religion and Government.*—The Dalaï Lama, or Grand Lama, is worshipped as the Deity, by the people of this country, and of a great part of central Asia. He formerly possessed also the supreme civil power in Tibet, which was exercised by a person of his nomination. The chief civil ruler, however, is now appointed by the emperor of China. The laws of Tibet resemble those of Hindostan.†

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* 1. The precise boundaries of this large inland country, and its extreme latitudes and longitudes, are unknown. The principal part of it, however, is situated between the latitudes of 26° and 36° north, and between 75° and 100° of east longitude. The divisions are also unknown. The part next Afghanistan and Northern Hindostan, is generally called Little Tibet, and the rest Tibet, or sometimes Great Tibet. The principal town of the former is Askardo or Eskerdon; and of the latter, Lassa.

† 2. Since 1792, when the Chinese sent an army to assist the Grand Lama against the Nepaulese, the country has been under the protection of China, or rather has been subject to its power.

The Lama is supposed, by his votaries, never to die; but when his dissolution takes place, they conceive that the divinity merely passes out of one body into another; and, on such occasions, the priests search diligently till they find the new deity. In 1781, the English ambassador, Captain Turner, was introduced to the Lama, who had been then lately found; and was a fine sprightly boy, eighteen months old, attended by his father and mother. The worshippers of the Lama conceive, that a celestial odour exhales from his person; that flowers spring up beneath his feet; and that, in the most parched desert, fountains flow at his command. His palace, which is at Puta-la, or "the holy mountain," seven miles east of Lassa, is uncommonly splendid; containing, it is said, ten thousand apartments, with vast numbers of images of gold and silver, besides many other ornaments.

Exercises on the Map of Tibet.

What are the latitude and longitude of Lassa? How is it situated in respect to Askardo, Deihi, and Amerapoora? What country lies between Tibet and Asiatic Russia?

XLVII.—CHINA.

1. *Boundaries.*—The Chinese empire is bounded on the north by Asiatic Russia; on the west, by Independent Tartary; on the south-west and south, by Tibet, Chin-India, and the Chinese Sea; and on the south-east and east, by the same sea, and other parts of the Pacific Ocean.*

2. *Divisions.*—China Proper is divided into fifteen provinces, which, with their chief towns, are as follows:

PROVINCES.	CHIEF TOWNS.
FOUR NORTHERN.	
Pe-tche-lee	Pekin, Pao-ting-foo
Shan-see	Tai-yuen-foo
Shen-see	Sin-gan-foo
Shan-tong	Tsee-nan-foo
SEVEN IN THE MIDDLE.	
Honan	Cai-fong-foo
Kiang-nan	Nankin
Se-tchuen	Tching-too-foo
Koei-tcheoo	Koei-yang-foo
Hooquang	Voo-tchang-foo
Kiang-see	Nan-tchang-foo
Tche-kiang	Hang-tcheoo-foo
FOUR SOUTHERN.	
Yun-nan	Yun-nan-foo
Quang-see	Quei-ling-foo
Quang-tong	Canton, Macao
Fo-kien	Foo-tcheoo-foo

Questions on the Notes to Section XLVI.

1. Where is Little Tibet situated? What is its capital?
2. When and how did Tibet become dependent on China?

What opinion do the worshippers of the Grand Lama hold respecting him? What is done when he dies? What farther opinions do his votaries hold respecting his person and power? Where is his palace? What does it contain?

* 1. This vast empire is computed to contain above five millions of square miles, or considerably more, if Tibet, and some other places under Chinese influence, be

3. *Islands.*—The principal islands are Formosa or Tai-ooan, and Hai-nan.

4. *Seas.*—The Gulf of Pe-tche-lee, the Yellow Sea, the Chinese Sea, and the Gulf of Tonquin.

5. *Seaports.*—The chief seaports are Canton, Emouy, and Ning-po.

6. *Face of the Country.*—So far as the country is known, there seems to be a small proportion of it mountainous; and there are some large plains.

7. *Rivers.*—The Yang-tse-kiang, Kian-ku, or Blue River, after a long eastward course, falls into the Eastern Sea, at Nankin; and the Hoan-ho, or Yellow River, after a like course, discharges itself into the Yellow Sea, 110 miles north of the same place. The Hoan-kiang falls into the Bay of Canton; and the Pay-ho passes Pekin, and falls into the Gulf of Pe-tche-lee.*

8. *Canals.*—China contains a vast number of canals. The principal of these is the Imperial Canal, which, in connexion with rivers, extends from Pekin to Hang-tcheoo-foo, a distance of 900 miles. By means of another canal, the navigation is continued to Canton; with the exception of one day's journey, in a mountainous district, between Quang-tong and Kiang-see.†

9. *Great Wall.*—The vast wall in the north of China, which was erected to prevent the incursions of the Tartars, is about 1500 miles long; from fifteen to thirty feet high; and so broad, that, in many places, six horsemen may ride abreast on its top.‡

included. It has a sea-coast which is nearly four thousand miles in extent. The extreme latitudes are about 20° and 53° north, and the extreme longitudes about 70° and 140° east. China Proper contains about a million of square miles; and lies between 20° and 41° of north latitude, and between 100° and 124° of east longitude.

* 2. The Hoan-ho derives its name from the great quantity of mud suspended in its water, which gives it a yellowish tinge. The same circumstance gives name to the Yellow Sea; as, from the vast quantity of coloured water carried into it by the Hoan-ho, the sea has also a like tinge, to a great extent.

† 3. The Imperial Canal, the greatest in the world, is 200 feet broad at the surface. In passing through high grounds, its channel is, in several instances, cut to the depth of 60 or 70 feet below the surface. In marshy or low districts, on the contrary, it is often raised 20 feet above the level of the surrounding country by embankments; so that its surface is frequently higher than the walls of the cities which it passes; and it sometimes occasions destructive inundations.

‡ 4. In the plains, the height is thirty feet; and, in the mountainous districts,

10. *Towns.*—China contains many large cities and towns. The principal are PEKIN, the present capital; and Sin-gan-foo, Nankin, Canton, and Hang-tcheoo-foo.*

11. *Climate and Soil.*—The climate is in most places temperate, but rather warm, particularly towards the south. The soil is in general fertile; and in some places, there is fine vegetable mould, five or six feet deep.

12. *Produce.*—China has most of the vegetable productions of Europe, besides several which are almost peculiar to itself, particularly tea.† The fruits are of inferior quality, from want of ingrafting, and other proper management.

13. *Animals.*—This country has most of the domestic animals known in Europe; but the breeds of them are generally inferior. It has also most of the wild and ferocious animals of other countries, except the lion.

14. *Population, &c.*—The population is thought to be about 150 millions; and the army probably amounts to 500,000 or 600,000 ill-disciplined men.‡

15. *Government.*—The emperor has the most unlimited power

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fifteen or twenty. It is thought to have been erected between 200 and 300 years before Christ; and is said to have occupied every third man in the empire, for five years, in building it. Some doubt this account, however, and think that it was erected at different and much later periods. The foundation is formed of large square stones laid in mortar, and the rest of it consists of a mound of earth cased on both sides with brick or stone. It is the greatest and most stupendous fabric in the world; and contains materials sufficient to form two walls, each six feet high and two feet thick, round the globe.

* 5. The population of the Chinese cities has been excessively exaggerated. Thus, Pekin has been said to contain three millions of inhabitants, while the latest and best writers reduce the amount to 600,000 or 700,000. Sin-gan-foo is next to it in magnitude and importance; and Nankin, Canton, and Hang-tcheoo-foo, have probably a population of about 200,000 each.

These cities contain many great and remarkable buildings, such as palaces and pagodas; the latter of which are temples, and other houses of worship. The famous porcelain tower of Nankin, so called from being cased with porcelain, belongs to one of these temples. This is eight stories high, and is ascended by 884 steps.

† 6. The tea-shrub grows to the height of six or eight, and sometimes ten or twelve feet. The leaves are gathered in spring, and are exposed to the steam of hot water. They are then made to assume the shrivelled appearance in which we see them, by being placed on plates of copper, iron, or baked earth, and held over the fire. The black teas are afterwards dried thoroughly by exposure to the sun. The earliest leaves of the spring, and those from the extremities of the branches, are considered the finest. There are many varieties, arising chiefly from being produced in different districts, or preserved in different modes. The tea-shrub is cultivated only in China and Japan. It has been tried in Europe; but thus far the experiments have failed.

The sugar-cane is successfully cultivated in this empire, and the bamboo grows in great abundance. This is a kind of reed which reaches the height of 30 or 40 feet, and is of the greatest utility to the Chinese. Its shoots are used as food. Its fibres serve as wicks of candles, or are made into matting and cables. Its trunks are used as water-pipes; and its wood is made into furniture and utensils of every kind, or is bruised, and converted into paper.

‡ 7. The Chinese are in the habit of giving exaggerated accounts of the power of their empire to foreigners. Thus, in 1795, they represented its population to Lord Macartney as being 333 millions.

over the lives and properties of his subjects. The civil and military affairs are managed by nine classes of persons, called mandarins by the Europeans. These have absolute power over the people whom they govern.*

16. *Manufactures.*—The Chinese manufacture silk, cotton, and woollen goods, and many other articles. The only manufacture in which they excel, however, is porc[illegible]in; and their superiority in this arises chiefly from the excellence of the materials which they possess for its formation.

17. *Commerce.*—The country has a vast inland trade, in consequence of the facilities presented by the numerous canals and navigable rivers. There is sometimes also a considerable overland trade with Russia, by means of caravans. The commerce by sea with Europe and America, is entirely confined to Canton.†

18. *Agriculture.*—Agriculture is greatly encouraged by the emperor, and men of influence; yet it is not practised on a great scale, nor are its principles well understood.‡

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* 8. The emperor is almost adored by the people, and offerings are made to his image and throne. He styles himself "the Great Father," "the Son of Heaven," and "the sole Ruler of the world." The people prostrate themselves in his presence; and his nobles kneel when he addresses them, or gives them orders. When he goes abroad, he is attended by 2000 men, carrying chains, axes, and other symbols of power. On these occasions, the people shut themselves in their houses, and close their shops; and, if any one happen to be in the way, he is exposed to instant death, unless he turn his back, or fall flat on his face on the ground.

The mandarins are removable at the pleasure of the emperor; and, on this account, they endeavour to enrich themselves by exactions from the people. To prevent danger from their influence, they are changed every three years from one station to another; are not permitted to hold any civil office in their native province; and cannot be stationed nearer to it than fifty leagues, till they are sixty years old. They are also prohibited from marrying in the place where they govern, and are subject to several other restrictions. They are almost all taken from the lower ranks of the people, who are pleased to see the avenues to power and wealth thus open to the talents and exertions of their sons; and they obey and honour the mandarins as they would the emperor himself.

† 9. The principal articles which the Europeans and Americans receive in this traffic are tea and porcelain; and they give in return, broadcloth, cotton goods, spices, watches, mirrors, jewellery, &c. In 1806, the weight of the tea exported amounted to 45 millions of pounds, of which the British took 31 millions; and the quantity has since increased. The Chinese have a limited trade, in vessels of their own, with Japan, Manilla, Malaya, and a few neighbouring places. This trade is confined to the ports of Canton, Emouy, and Ning-po. Commerce is considered the least creditable employment in China; the trader being looked upon as the lowest character in the empire, and as one who will cheat whenever he has it in his power. At the same time, as it affords the means of procuring a livelihood, and as the facilities for internal traffic are so great, amazing multitudes are engaged in it; and it has been computed, that the number and tonnage of the vessels thus employed, is equal to that of all the vessels in the rest of the world. This, however, is most probably an exaggeration.

‡ 10. The Chinese have been compared to gardeners, from cultivating small spots with great care, chiefly with the spade and the hoe; while there are few large farms, and these are badly managed. A fourth part of the country, also, consists of lakes and swamps; the latter of which, from want of enterprise and capital, the Chinese never attempt to cultivate. Husbandmen hold the next rank to the officers of the state, and to men of letters. Every year, on a day about the beginning of March, the emperor repairs, in great state, to a field appointed for the purpose; and, after he has made a prayer, sacrificed an ox, and performed other ceremonies, in presence of vast numbers, particularly husbandmen, he opens the ground with a plough drawn

19. *Literature, &c.*—There are schools in every city and village in China, and half the people can read and write. The acquisition of this degree of knowledge, requires ten or twelve years, from the difficulty of the language, and the bad system of teaching. The country is almost destitute of science, and has made little progress in literature.*

20. *Religion.*—The religion is idolatry, in a vast number of sects; particularly those of Kong-foo-tse or Confucius, the Tao-tse, and Fo. The emperors of the present race, are of the religion of the Dalaï Lama.

21. *Character.*—The Chinese are submissive, orderly, polite, and industrious; but they are cunning and fraudulent, and pay little attention to truth.†

22. *Historical Sketch.*—The Chinese make extravagant pretensions respecting the antiquity of their empire, some of their writers tracing their history back through a period of more than 90,000 years before the commencement of the Christian era. Even from their own histories, however, when carefully examined, the empire does not seem to have been of any considerable magnitude or power earlier than eight centuries before Christ. Since that period, there appear to have been nineteen or twenty dynasties, or lines of sovereigns; and the country has been agitated by numerous wars, and internal commotions; having been sometimes divided between different princes, and having been permanently united into one empire, only since the year 1279, of the Christian era. The first monarch of the present dynasty was Sun-shee or Shee-tsong, a Man-tchoo Tartar who, in 1644, conquered the empire, and whose descendants

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by oxen splendidly ornamented. After he has made several furrows round the field, he gives the plough to the chief mandarins, who do the like in succession. Some time after, when the field has received the necessary preparations, the emperor returns, and sows the first seed of the season, the produce of which is carefully gathered and preserved for the most holy offerings. The like is done on the same days by the viceroys and governors over all the empire; and by this means, the practice of agriculture is countenanced and promoted.

* 11. The Chinese are unable to predict eclipses, and Portuguese are employed to regulate their almanacks. They believe in all the absurdities of astrology; and endeavour, by means of it, to predict future events. They think that the sky is round, and that the earth is a square placed in the middle of it, with the element of water on the north side of it, that of fire on the south, that of wood on the east, and that of metal on the west; and they believe that the stars are a' stuck in the sky, at equal distances, from the earth. During eclipses, they conceive that the sun or moon is in danger of being devoured by a great dragon; and on such occasions, people of every kind, from the highest to the lowest, assemble in the towns, offering up prayers for the safety of the luminary, and beating on drums and kettles to frighten away the dragon.

† 12. The Chinese are of a complexion between dark and fair; and they have, in general, small eyes, high cheek bones, pointed chins, flat noses, and large ears. A Chinese female is considered beautiful in proportion to the smallness of her eyes, the protuberance of her lips, the lankness and blackness of her hair, and, above all, the extreme smallness of her feet. To gain this last qualification, the feet are very tightly bandaged during youth; so that all the toes, except the great one, grow into the sole. By this means, the foot is rendered so small, that its length does not exceed four inches, and its breadth an inch and a half. The ankles, however, become bulky and clumsy; and the females can scarcely walk.

still occupy the throne. The sovereigns have of late shown favour to their Tartar countrymen, and thus displeased the Chinese; and for this and other causes, secret societies of a seditious character are extensively spread over the empire, and render another revolution a likely event.

Exercises on the Map of China.

How is China separated from India? In what part of China is Pekin? How are Pekin, Nankin, and Canton, situated in respect to each other? What towns of China are in nearly the same latitude as Jerusalem? What towns of Asia have nearly the same latitude as Pekin? What are the nearest towns of China to the island of Formosa? What are the latitudes and longitudes of Sin-gan-foo, Canton, and Emouy?

XLVIII.—CHINESE TARTARY AND COREA.

1. *Divisions.*—Chinese Tartary or Tatary consists of two great divisions, Mantchooria and Mongolia,

Questions on the Notes to Section XLVII.

1. What is the content of the Chinese empire? What is the extent of its sea-coast? What is the content of China Proper? Between what latitudes and longitudes does it lie?
2. Why are the Hoan-ho and the Yellow Sea so called?
3. What is the breadth of the Imperial Canal? To what depth is its channel cut in some places, and how high is it raised in others?
4. Where is the Great Wall highest, and where lowest? What are the opinions respecting its erection? How is it formed? For what would its materials be sufficient?
5. What are the probable populations of the principal Chinese cities? What are pagodas? Describe the porcelain tower of Nankin.
6. What is the height of the tea-shrub? When are its leaves gathered? To what are they then exposed? How are they shrivelled? How are the black teas dried? What leaves are the finest?
   Describe the bamboo. To what uses is it applied?
8. What titles does the emperor assume? How do the people and the nobles conduct themselves in his presence? How is he attended when he goes abroad? What do the people do on such occasions? If a person happen to be on the way, what is he obliged to do?
   How often are mandarins changed from one station to another? What restrictions are they under respecting their native province? Under what restriction are they as to marriage? From what ranks are they generally taken? How do the people act towards them?
9. What articles do the Europeans receive in commerce from the Chinese? What do they give in return? How is commerce looked on in China? How are merchants regarded?
10. What kind of agriculturists are the Chinese? How much of the country consists of lakes and swamps? What rank do husbandmen hold? Describe the opening of the ground with the plough by the emperor. Who sows the first seed of the season? What is done with the produce? By whom are the like acts done on the same days? What is the effect of these ceremonies?
11. What do the Chinese think respecting the figure of the sky and earth? What respecting the stars? What do they conceive respecting the sun and moon when eclipsed? What do they do on such occasions?
12. What, in general, is the personal appearance of the Chinese? What qualifications are thought by them to constitute female beauty? What is done with the feet of females during youth? What are the effects of this treatment?

with numerous subdivisions. The principal town of the former is Mookden or Shin-yan; and that of the latter, Zheholl. In 1759, Little Bukharia was conquered by the Chinese. Its chief towns are Cashgar and Yarkand.

2. *Face of the Country.*—The Man-tchoo territory contains many vast forests, with some deserts; but a large proportion of it is fertile. Mongolia, in its full extent, embraces the vast sandy desert of Cobi or Shamo, which is 1400 miles in length, and is interspersed with only a few oäses, or habitable tracts.

3. *Climate, &c.*—A great part of this vast region is much colder than might be expected from its latitude. This is particularly the case in Mongolia, which is situated on the high central plateau of Asia. There are, however, many fertile plains and valleys, which produce excellent pastures.

4. *Manner of Living, &c.*—Among the numerous tribes in this extensive country, there are many varieties in manners and customs. Most of the Mongols live in tents, which, as the pastures fail, they remove ten or fifteen times a year, going northward in spring and southward in autumn. In these peregrinations, they move with their flocks in regular procession; and the young women, who are placed in the rear, enliven the march by cheerful songs. Their flocks consist of horses, camels, black cattle, sheep, and goats. The people live principally on animal food. They play at draughts; and amuse themselves with archery, wrestling, and, above all, horse-races, in which even the young women excel. It will appear, therefore, that they are in a very imperfect state of civilization: at the same time, they have many amiable qualities, and they seem to enjoy a very considerable degree of happiness.

5. *Government, &c.*—The khans or chiefs are subject to the emperor of China, and pay an annual tribute. The religion is Lamaism, or that of the Dalaï Lama.

6. *Corea.*—The peninsula of Corea is governed by a king, who has absolute authority among his own subjects, but pays an annual tribute to the emperor of China. The capital is King-ki-tao; but very little is known of the country.

Exercises on the Map of Chinese Tartary.

How are Shin-yan and Zhe-holl situated in respect to Pekin? What towns of India lie nearly south of Cashgar and Yarkand? From what countries does Chinese Tartary separate Asiatic Russia? How is Corea separated from China Proper? How from the Japan Islands? What are the latitude and longitude of King-ki-tao?

XLIX.—INDEPENDENT TARTARY.

1. *Situation.*—Independent Tartary lies between the Caspian Sea and Chinese Tartary, in one direction; and between the Russian dominions on the north, and Persia and Afghanistan on the south.

2. *Divisions.*—This country is very little known; but its principal divisions seem to be the following:

DIVISIONS.	CHIEF TOWNS.
Country of the Kirghees . .	(No towns.)
Turkestan	Tashkent or Tashkund
Khowaresm	Khieva or Khiva
Great Bukharia	SAMARCAND, Bukhaura

3. *Climate.*—The climate is, in general, temperate; but the winters are in some parts very severe.

4. *Condition of the People.*—All the hordes of the Kirghees, and many others, live in tents, and move about with their cattle, like the Mongols. A rich Tartar is sometimes known to possess 10,000 horses, 4000 black cattle, and 20,000 sheep, besides camels and goats.

5. *Historical Sketch.*—The most remarkable events in the history of this part of Asia, are the subjugation of the surrounding countries, by its hordes, under Zenghis Khan and Tamerlane. The former of these, who was a Mongol, conquered Corea, Cathay, all central Asia, and part of China; but he was stopped in his career by death in 1227, and his vast dominions were divided among his four sons. Tamerlane, or Timour, who was a Tartar of Bukharia, overran Persia and India, and spoiled Delhi of its treasures. He next overthrew the Turks under Bajazet; and, having thus made himself master of all the centre and south of Asia, he conquered Egypt, and carried off the treasures of Cairo. He then made Samarcand his capital; and received homage from the emperor of Constantinople, and the king of Castile in Spain. He died in 1405, while preparing to invade China. The exploits and success of these conquerors have perhaps not been exceeded by any on record; but their tracks, particularly that of Tamerlane, were marked with cruelty and blood.

Exercises on the Map of Independent Tartary.

How is Samarcand situated in respect to Delhi, Ispahan, and Astrakhan? How are Tashkent and Khieva situated in respect to the Sea of Aral? What towns of Asia have nearly the same latitude as Samarcand

L.—EMPIRE OF JAPAN.

1. *Situation.*—The empire or kingdom of Japan consists of the islands of Niphon, Kiusiu, Sikoff, and many smaller, situated east of Corea, between the Sea of Japan and the Pacific Ocean.*

2. *Face of the Country.*—The country is greatly diversified with mountains, hills, and valleys; and the shores are bold and rocky.

3. *Towns.*—The principal towns are IEDO or YEDO, Miaco, Namboo, and Osaka, in Niphon; and Nangasaki and Sanga, in Kiusiu.†

4. *Climate and Soil.*—The climate is variable, and rather moist; and there is often great heat in summer, and severe cold in winter. Much of the soil is naturally unproductive; but such is the industry of the people, that every spot which will at all admit of it, is carefully cultivated.‡

5. *Produce, &c.*—Japan produces tea, and other articles, in common with China; and the animals are nearly the same, except sheep, goats, and pigs, scarcely any of which are allowed to be in the country, as they are supposed to be injurious to agriculture, which is encouraged in preference to every other occupation.

6. *Population.*—The population is supposed to be fifteen or twenty millions.

7. *Government.*—The emperor is an hereditary absolute monarch; and the princes under him are the same in their respective territories.

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* 1. These islands are situated between 31° and 41½° of north latitude, and between 129° and 142° of east longitude. Niphon is nearly 800 miles long, and has an average breadth of above 100 miles. Kiusiu is above 200 miles long and 100 broad, and Sikoff about 120 miles long and 60 broad. The content of these and the smaller Japanese islands, is above 120,000 square miles. The island of Matsumai or Iesso, north of Niphon, now belongs to Japan; but it is very imperfectly known. Little indeed is known of the empire at large, in consequence of the extreme jealousy of the government in respect to foreigners.

† 2. Iedo is said to be sixty miles in circuit; and it contains the emperor's palace, which, with the numerous buildings belonging to it, is said to be no less than fifteen miles round. In these buildings, the various princes of the empire reside, during half the year; and their families, or part of them, are always kept there as hostages for their fidelity. The "Hall of a hundred mats" is 600 feet long and 300 wide. The houses in Japan have neither chairs nor tables, the people sitting on mats; and the emperor himself, when he grants an audience, sits on a carpet. Miaco, according to a census taken in 1674, contained above 400,000 inhabitants. In this city is the palace of the Dairi, or supreme dignitary of the church; who, in the degree of homage and adoration that he receives, is little inferior to the Grand Lama of Tibet.

‡ 3. Even on the sides of mountains, terraces are formed by means of walls, and are sown with grain and pulse

8. *State of Education, &c.*—The schools of Japan are said to be superior to those of any other country in Asia; and the people are more enterprising than the Chinese.

9. *Religion.*—There are different religious sects, some of which resemble those of China, and others those of India. Christians have been held in detestation since about the commencement of the seventeenth century, when the Jesuists were expelled for political reasons, after they had made many converts, a great number of whom were put to death.

Exercises on the Map of Japan.

In what direction does Niphon stretch? What towns of Asia have nearly the same latitude as Iedo? What towns of Japan are nearest China? How are Sikoff and Kiusiu situated in respect to Niphon?

AFRICA.

LI.—GENERAL VIEW.

1. *Boundaries, &c.*—Africa is the south-western part of the old continent.* It is joined to Asia by the Isthmus of Suez; and is bounded on the north-east by that isthmus, the Red Sea, and the Strait of Bab-el-Mandeb; on the east and south-east, by the Indian Ocean; on the west, by the Atlantic Ocean; and on the north, by the Strait of Gibraltar and the Mediterranean Sea.*

2. *Divisions.*—The principal divisions of Africa are as follows:

Questions on the Notes to Section L.

1. What is the content of the principal islands of the empire of Japan? Why is so little known of that empire?
2. What is said to be the circuit of Iedo? Of the emperor's palace? What persons reside in the palace? What are the length and breadth of the "Hall of a hundred mats"? On what do the people sit? The emperor? What population did Miaco contain in 1674? What remarkable person resides there?

* 1. This country, which is greater than Europe, and less than Asia, is about 5000 miles in length, from Cape d'Aguillas to the north of Tunis; and about 4700 in breadth, from Cape Verde to Cape Guardafui. It lies between 37° of north and 35° of south latitude, and between 18° of west and 52° of east longitude. From the want of inland seas and gulfs, and from other obstacles to travelling, Africa is less known than any of the other great divisions of the earth.

NORTHERN AFRICA.

Egypt, Barbary, and Sahara. Barbary is divided into the states of Barca, Tripoli, Tunis, Algiers, Fez, and Morocco.

WESTERN AFRICA.

Guinea and Congo.

SOUTHERN AFRICA.

Countries of the Namaquas and Hottentots, district of the Cape of Good Hope, and Hambrona.

EASTERN AFRICA.

Sabia, Sofala or Botonga, Mocaranga or Monomotapa, Mozambique, Zanguebar, Magadoxa, Ajan, Adel, Abyssinia, and Nubia.

CENTRAL AFRICA.

Soudan or Nigritia, comprehending Houssa, Timbuctoo, Bornoo, Darfoor, and several other states, besides many unknown countries south of it.

3. *Islands.*—Madagascar, the Comora Isles, Bourbon, Mauritius or the Isle of France, and Socotra, in the Indian Ocean; and the Madeiras, Canaries, Cape Verde Islands, St. Matthew, Ascension, St. Helena, Fernando Po, and St. Thomas, in the Atlantic.

4. *Capes.*—The Cape of Good Hope and Cape d'Aguillas, at the south; Capes Serra and Bon, at the north; Cape Guardafui, at the east; and Cape Verde, at the west. Besides these, there are Capes Spartel, Cantin, Bojador, Blanco, Roxo, Mezurado, Palmas, Three Points, Formosa, Lopez Gonzalvo, Ledo, Voltas, and others, on the Atlantic; and Corrientes, Delgado, &c. on the Indian Ocean.

5. *Mountains, &c.*—The principal mountains are the Atlas chain, in the north; the mountains of Lupata, in the south-east; and the mountains of Kong and of the Moon, in the middle.* Vast sandy deserts

* 2. The Atlas mountains consist of several chains, rising in gradual succession, like terraces from the sea. These mountains give name to the Atlantic Ocean, from its proximity to their western extremity. The mountains of Lupata are sometimes called the Spine or Backbone of the World.

constitute a striking feature of the country. That of Sahara is the greatest in the world.

6. *Lakes.*—Dembea, in Abyssinia; the Sea of Soudan, in Houssa; and Lake Maravi, near the mountains of Lupata.

7. *Rivers.*—The principal rivers are the Nile, which flows through Abyssinia, Nubia, and Egypt, into the Mediterranean; the Senegal and Gambia, which fall into the Atlantic, on opposite sides of Cape Verde; the Zaire or Barbela, in Congo; the Zambezi or Cuama, south of Mozambique; and the Kowara or Niger, in Soudan.*

8. *Climate.*—More than three fourths of Africa is in the torrid zone; and hence the heat is, in general, very great.

9. *Soil, &c.*—Many parts of Africa, of great extent, are parched deserts, which are irrecoverably barren. In places, however, where there is sufficient moisture, particularly in the valleys of great rivers, and in tracts where there are copious springs, the fertility is extreme, and vegetable productions attain a growth and magnificence unusually great.

10. *Inhabitants.*—There are three distinct varieties of inhabitants in Africa: the Moors, in the north; the negroes, in the middle; and the Caffres, in the south-east and south. The first of these resemble the Europeans, except that their colour is darkened by the climate. The negroes have black complexions, thick lips, and woolly hair. The Caffres have complexions, varying from a yellow brown to a shining black; and, compared with the negroes, they have more erect faces, higher noses, hair less curled, and lips not so thick. Besides these varieties, which are strongly marked, there are several intermediate ones.

11. *Population.*—The amount of the population is extremely uncertain; but it has been estimated at 60 or 70 millions.

Exercises on the Map of Africa.

How is Africa situated in respect to Asia and Europe? How is it separated from them? Whether is more of Africa north or south of the equator? What countries of Africa have the same latitude as the Cape Verde Islands? The Canaries? The Madeiras? In what zones is the island of Madagascar? To what part of Africa is it nearest? What is the least distance? What are the latitude and longitude of St. Helena? How far is it from the nearest point of Africa? What is the general direction of the coast from the Cape of Good Hope to Cape Guardafui? What are the different directions of the coast from the Strait of Gibraltar to the Cape of Good Hope? Describe the situations of Socotra, Bourbon, Mauritius, Ascension Isle, and the Comora Isles.

* 3. Various attempts have been made to explore the course of the Niger; but they have all failed from the difficulties opposed by climate, and by the inhabitants of the states through which it flows. Some suppose that it terminates in an unknown inland lake, such as the Caspian; but the most probable opinion seems to be, that it discharges itself into the Gulf of Guinea, about Biafra.

LII.—EGYPT.

1. *Boundaries.*—Egypt is bounded on the north by the Mediterranean, on the east by the Isthmus of Suez and the Red Sea, on the south by Nubia, and on the west by the Libyan Desert.*

DIVISIONS.	CHIEF TOWNS.
Lower Egypt, or Bahari .	Cairo,† Alexandria, Raschid or Rosetta, Damietta, Djizeh
Middle Egypt, or Vostani .	Medineh, Benisooef
Upper Egypt, or Said . . .	Djirdjeh, Sioot, Meshieh, Denderah

2. *Seaports.*—The principal ports are Alexandria, Rosetta, and Damietta, on the Mediterranean; and Suez and Cosire or Coseir, on the Red Sea.

3. *Lakes.*—Menzaleh, Mareotis, Boorlos, Etko, &c.

4. *River.*—The only river is the Nile, which in

Questions on the Notes to Section LI.

1. What are the length and breadth of Africa? What are its extreme latitudes and longitudes? Why is it so little known?
2. Of what do the Atlas mountains consist? To what do they give name?
3. Why have the attempts to trace the course of the Niger failed? What opinions are there respecting it?

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* 1. Egypt lies between the latitudes of 23½° and 31½° north; and its extreme longitudes are about 30° and 35° east. Its length from north to south is upwards of 500 miles. Its breadth is uncertain; but it nowhere exceeds 250 miles, while in most places it is much less.

+ 2. The population of Cairo is about 300,000. That of Damietta is differently stated, from 20,000 to 30,000; and that of Alexandria is about 16,000, and of Rosetta about 12,000.

Cairo, or Grand Cairo, called by the Arabs Kahira, was founded in the year 970, by the caliph Almanzor. From the Nile, this city has a fine appearance; nothing being seen except the tops of the citadel, and other large buildings, rising above beautiful trees. On inspection, however, it disappoints the expectations thus formed; mean hovels every where presenting themselves, in narrow, crooked streets, unpaved, and choked with dirt and dust. The houses of the higher classes are two, and sometimes three stories high, and are of stone; but those of the lower orders are of mud or unburned bricks, and are but one story high. It contains a few handsome public buildings, particularly mosques.

Alexandria, so called from its founder, Alexander the Great, continued to be the metropolis of Egypt, and the principal seat of the arts and sciences, from his time till it was captured by the Saracens in the year 640. It contained the two noblest streets in the world; which, crossing each other perpendicularly, extended through its entire length and breadth, and were each 2000 feet in width. These streets contained the most beautiful and magnificent palaces, temples, and other public buildings, composed of the finest materials, and planned and executed with the greatest elegance and taste. The neighbourhood of the present town, for the extent of two leagues, still presents remains of pilasters, obelisks, and other monuments of its ancient greatness, in such abundance, that the heaps of them are often higher than the houses erected beside them.

Lower Egypt separates into two principal branches. One of these falls into the sea near Rosetta, and the other near Damietta; and they enclose between them the fine fertile tract called the Delta.*

5. *Climate and Soil*.—The climate of Egypt is very hot, particularly during the inundation.† The soil in the Delta and the valley of the Nile, which are the only parts that are of much value, is uncommonly fertile; consisting of black unctuous mould, deposited from time to time by the river.

6. *Produce, &c.*—The vegetable productions of the country are extremely numerous. Some of the principal are rice, wheat, barley, doura, tobacco, flax, sugar-cane, indigo, and cotton, with various kinds of fruit. Besides the common domestic animals, there are crocodiles and hippopotamuses. These, however, are now confined almost entirely to Upper Egypt.

7. *Population*.—The amount of the population is uncertain; but it is supposed to be about two millions and a half. Of these,

* 3. The Nile, in ancient times, had seven mouths, some of which have since been choked up. By this means, the Delta is now much smaller than formerly. This river has been celebrated, since the earliest times, for its annual inundations or floods, which lay the greater part of Lower Egypt under water; though in that country, except on the coast of the Mediterranean, there is seldom even a shower. These inundations are occasioned by the great rains which fall between the tropics; and on them the fertility of Egypt, and even the existence of the inhabitants, depend. The river begins to swell about the middle of June, is at the highest in the middle of September, and is again at its natural level about the winter solstice. At this latter period, the lands are put under culture; and, after the grain is sown, the chief labour of the husbandman consists in irrigating the ground with water preserved in canals, from the time of the inundation. Disastrous effects result to the inhabitants from the rise of the river being either much greater or much less than the average height. In the latter case, there is not sufficient water to fertilize the ground, and to leave the necessary quantity in the canals; and in the former, there is often great loss of life and property, by the overwhelming of villages. Many of these are not raised even above the level of the ordinary inundations; but depend for safety on fences of earth and reeds, which, when the water rises three or four feet above the usual height, are unable to resist its pressure. On such occasions, the boats of the pasha are employed in removing first the corn, which he considers most valuable, and then the people; and individuals often climb palm-trees, or keep themselves afloat on logs of timber, or bundles of reeds, and wait for relief; while others endeavour to escape on buffaloes or cows: but many, particularly women, children, and old men, perish.

† 4. The following remarks on the appearance of Egypt at different times, are characteristic and beautiful: "The aspect of Egypt undergoes periodical changes with the seasons. In our winter months, when nature is for us dead, she seems to carry life into these climates; and the verdure of Egypt's enamelled meadows, is then delightful to the eye. The air is perfumed with the odours of the flowers of orange and citron-trees, and numerous shrubs. The flocks overspreading the plain, add animation to the landscape. Egypt now forms one delightful garden, though somewhat monotonous in its character. On all hands, it presents nothing but a plain, bounded by whitish mountains, and diversified here and there with clumps of palms. In the opposite season, this same country exhibits nothing but a brown soil, either miry, or dry, hard, and dusty; immense fields laid under water, and vast spaces unoccupied and void of culture; plains in which the only objects to be seen are date-trees; camels and buffaloes led by miserable peasants, naked and sunburned, wrinkled and lean; a scorching sun, a cloudless sky, and constant winds varying in force. It is not, therefore, surprising that travellers have differed in their physical delineations of this country."

about a quarter of a million are Kopts, who are descended from the ancient inhabitants; and the rest are principally of Arabian origin, with some Turks, Jews, and Greeks.

8. *Government.*—Egypt is governed by a pasha, appointed by the Grand Seignior.*

9. *Commerce.*—The greater part of the trade of Egypt is carried on by caravans, which travel to Abyssinia, Barbary, Syria, and other places. Exertions have of late been made to increase the commerce with Europe, and considerable quantities of cotton have been exported to Britain.

10. *Learning, &c.*—This country was greatly celebrated, in ancient times, for the progress of its inhabitants in the arts and sciences. There is at present a kind of college in Cairo, in which instructions are delivered on grammar and astrology, and on the doctrines of Mohammedanism, which is the established religion. The country, however, is destitute of any knowledge of real science.

11. *Antiquities.*—Egypt displays numerous and striking remains of ancient art and greatness. The principal of these are pyramids, catacombs, sphinxes, obelisks, and the ruins of many beautiful temples, and other buildings.†

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* 5. The pasha had formerly only nominal power; the real authority belonging to the Mameluke beys, who ruled the country as they chose, and sometimes even dismissed the pasha. The Mamelukes, who were originally military slaves, purchased by the caliphs to form their body guards, and whose numbers were kept up by new purchases, suffered severely from the late French invasion. After that event, a pasha of determined spirit was appointed, who treacherously put most of the Mameluke chiefs to the sword. The rest of the body fled to Nubia, and were driven from thence to Darfoor; and thus, the body is for ever removed from Egypt. The government is now like that of other Turkish provinces, the pasha usually paying a tribute to the Grand Seignior, but in other respects yielding only a nominal subjection.

† 6. There are numerous pyramids in different places; but the most remarkable are those of Djizeh, near Cairo. These are composed of stone, are erected on square bases, and taper almost to a point. The perpendicular height of the first is 477 feet, and each side of its base is 720 feet. In the second, the like dimensions are 456 and 684 feet. Hence, the first of these vast masses covers the space of nearly twelve acres, and the second nearly ten acres and three quarters. From late examinations of their interior, it seems to be fully established that they were erected as sepulchres for the early kings. They contain within them large apartments, one of which has been found to be 66 feet long and 27 wide. It is remarkable, that in six pyramids which have been opened, the principal passage is directed towards the polestar, having an inclination of 27° to the horizon. It is also remarkable that their faces are turned with precision towards the north, south, east, and west points of the horizon; and the sloping side of the first forms with the horizon an angle equal to the sun's altitude at the equinoxes. From these facts it appears, that at a very early period, the ancient Egyptians must have made some progress in practical astronomy.

Catacombs, or subterranean vaults for the dead, are found in several places; but the most remarkable, are those near the site of Thebes, in Upper Egypt. Some of these are thought to have been formed between three and four thousand years before the present time. They consist of subterranean passages and chambers, cut in the sides of the mountains, at different heights above the adjacent plain. They exhibit numerous hieroglyphics, and are adorned with many paintings, which often display much excellence in their execution, and which still retain their colours fresh and good. Those intended for the remains of the Theban monarchs, were peculiarly spacious and magnificent; and each of them contained a sarcophagus or stone coffin, of great magnitude. One of these coffins that has been examined, consists of a

12. *Historical Sketch.*—The earliest line of kings in Egypt, of which there is any authentic account, was that of the Pharoahs. It is supposed that by them Thebes and Memphis were built, and the pyramids and many of the other stupendous works of the country were erected. This dynasty was overturned by Cambyses, king of Persia, 525 years before Christ; and Egypt continued occasionally subject to the Persians, and occasionally independent, till it submitted to Alexander the Great. After his death, it was seized, 323 years before Christ, by Ptolemy, one of his generals, who was the first of the kings of that name. To this line of sovereigns, it continued subject till the death of the celebrated queen Cleopatra, when it fell under the power of Rome, thirty years before Christ. The next conquerors of Egypt were the Saracens, under the caliph Omar, by whom it was subjected in the year 640. In 1517 it was subdued by the Turks, who extinguished the glory of the country, already obscured by the Saracens. In the recent history of Egypt, the most prominent events are those connected with its invasion by the French, under Bonaparte, in 1798; and its defence by Britain. The result of these extraordinary proceedings, was the overthrow of the French power in the country, in 1801, by the English; and the restoration of the province by the latter to the Turks, to whom it still continues nominally subject.

Exercises on the Map of Egypt.

Why are Upper and Lower Egypt so called? How are Alexandria, Cairo, and Damietta, situated in respect to each other? On which side of the Nile is Djizeh? What are the latitude and longitude of Cairo? Whether has it or Suez the greater latitude? What country of Asia is nearest Egypt? How far is Cairo from Jerusalem? How may a ship sail from Damietta to Suez?

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mass of granite sixteen feet long, six broad, and eight high; and has a lid of a single block of stone, adorned with the effigy of a king. The formation of these catacombs, arose from an opinion entertained by the ancient Egyptians, that if the body were preserved from dissolution, it would again, after the lapse of five or six thousand years, be animated by the soul. On this account, also, they embalmed the bodies of the dead in such a manner, that little change was made in the appearance and figure; and many of them remain, even at the present day, in a high state of preservation, and are known by the name of mummies.

The largest of the numberless sphinxes found in Egypt, is near the pyramids of Djizeh. This monstrous production consists of the head of a virgin joined to the body of a quadruped, and is principally formed out of the solid rock.

Near Alexandria are the two obelisks called Cleopatra's Needles. These are columns each about seventy feet high, and consisting of a single stone. One of these is still erect; but the other is overturned. Near the same place is the beautiful column called Pompey's Pillar, which is above ninety feet high. Neither the time at which these were erected, nor their object, is known.

In speaking of the antiquities of Egypt, its two most ancient capitals, Thebes and Memphis, may be mentioned. The site of Thebes is in Upper Egypt, and is known by the ruins of some of its public edifices, by the catacombs, and by some great statues; but respecting Memphis, as after its decline its principal architectural ornaments were carried to Alexandria, it is only known, that it was situated on the western side of the Nile, near the great pyramids. It was the seat of government during the reigns of the Pharaohs. The greatness of Thebes has doubtless been much overrated. At the same time, the poetic exaggeration, that in time of war it could send forth 200 chariots and 20,000 men from each of its hundred gates, gives reason to believe, that it must have been a place of extraordinary magnitude and population.

LIII.—NUBIA.

1. *Boundaries.*—The limits of Nubia are uncertain; but, in its largest extent, it lies between Egypt and Abyssinia, in one direction; and between the Red Sea and Bornoo, in the other.*

2. *Divisions and Towns.*—The principal divisions are Nubia Proper and Sennaar; and the chief towns are Deir or Dehr, Ibrim, Dongola, Gherri, Harbaghi, and Sennaar.†

3. *Climate.*—The heat in Nubia is excessive; and there is a rainy season, which lasts from June till September.‡

Questions on the Notes to Section LII.

1. Between what latitudes and longitudes does Egypt lie? What are its length and breadth?
2. What are the populations of the principal towns of Egypt?
   When was Cairo founded, and by whom? What appearance has it from the Nile? Describe the streets and houses.
   Why is Alexandria so called? What did it continue to be till the year 640? Describe the two principal streets of the ancient city. What marks of its greatness are still found round the present city?
3. How many mouths had the Nile in ancient times? For what has this river been celebrated? Is there rain in Egypt? How are the inundations occasioned? When do they commence and terminate, and when are they highest? When are the lands put under culture? In what does the subsequent labour of the husbandman consist? What evils result from the river rising either too high or too low? On what do many of the villages depend for safety? When villages are inundated, what is done by the boats of the pasha? How are individuals often obliged to endeavour to save themselves?
4. Describe the appearances of Egypt at different seasons of the year.
5. Who had formerly the real authority in Egypt? Who were the Mamelukes? What first weakened their power? What was their fate finally? What is the nature of the present connexion of Egypt and Turkey?
6. Where are the principal pyramids? Of what are they composed? What is their form? What are the dimensions of the first and second? What spaces do they cover? What were their uses? What do they contain within them? What is remarkable as to their principal entrances, and their situation with respect to the points of the compass? What may we infer from this?
   What are catacombs? Where are the most remarkable found? What is thought to be the age of some of these? Of what do they consist? What do they exhibit, and how are they adorned? What was contained in the ones designed for the kings? Describe a sarcophagus that has been examined. Why were these catacombs formed? Why were bodies embalmed? What are such bodies called?
   Describe the sphinx that is near Djizeh.
   What columns are there near Alexandria?
   What were the two most ancient capitals of Egypt? Where were they situated? Which of them was capital during the reigns of the Pharaohs?

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* 1. Taken in this extent, Nubia is about 700 miles long and 500 broad. From the comparatively small importance of this country and several others in Africa, the accounts of them here given will be short.

† 2. Sennaar is said to have formerly contained 100,000 inhabitants.

‡ 3. The greatest heat is between January and April; and the burning sands then render travelling impracticable, except at night. The high grounds consist of frightful deserts, either of sharp stones or deep sand.

4. *Produce, &c.*—The most important production is durra, which is the principal article of food. This is brought to maturity by irrigation with water raised by wheels, which are turned by cows. The animals are elephants, rhinoceroses, and most of the others which are found in the rest of Africa.

5. *Population, Government, &c.*—The population is extremely small, compared with the extent of territory; and most of the country belongs to the pasha of Egypt, who has lately added much to the part that formerly belonged to the Turks.

6. *Inhabitants.*—The inhabitants are all black, or at least of a dark brown. Some of them towards the south, have the features and appearance of negroes; but, of the rest, some resemble in figure and features the Arabs, and others the Europeans.

7. *Religion.*—The religion is partly Mohammedanism, and partly idolatry.

LIV.—ABYSSINIA.

1. *Situation.*—Abyssinia or Ethiopia, or, as the natives prefer that it should be called, Agazi or Ghez, is situated south of Nubia, between the seventh and fifteenth degrees of north latitude; but its boundaries are very fluctuating and uncertain.

2. *Towns.*—The chief towns are GONDAR,* Axum, Dixan, and Antalé.

3. *Climate.*—Abyssinia is in general an elevated country; and hence, except in low valleys, the heat is less than in Nubia and Egypt. The wet season continues from June till September, during which period the rains fall in torrents, and are often accompanied by thunder and dreadful hurricanes.

4. *Produce.*—The principal produce is wheat, barley, maize, and various tropical fruits, with numerous perfumes.

5. *Animals.*—Besides lions, panthers, and leopards, which are common over most of Africa; there are elephants, rhinoceroses, hyenas, hippopotamuses, and crocodiles, with great numbers of black cattle, and other domestic animals.

6. *Government.*—The government is a despotic monarchy.

7. *Religion.*—The religion is nominally Christianity, but is in a most corrupted state; being mixed with many Jewish, Mohammedan, and Pagan absurdities.

8. *Character, &c.*—The people are barbarous and depraved in their manners, and disgusting in all their habits.†

* 4. Gondar, the capital, is said by Bruce to contain 10,000 families, and a hundred Christian churches.

† 5. Bruce's statement, that they eat raw flesh just cut from the living animal, has been controverted. It is certain, however, that they often feed on raw flesh,

9. *Historical Sketch.*—One of the earliest events recorded by the Abyssinians in their annals, is the visit of their sovereign, the queen of Sheba or Ethiopia, to Solomon. By him she is said to have had a son, from whom they assert that their monarchs at the present time are descended. Abyssinia was overrun by the Egyptians in the reign of Ptolemy Euergetes, and by the Romans in the reign of Augustus. Neither, however, made any permanent settlement in the country. Christianity was introduced from Egypt, in the year 330. Since that time, there have been various wars with the Moors, the kingdom of Adel, and other adjoining states; and there have been many internal commotions, and several revolutions. The history of these, however, is of little general importance.

Exercises on the Map of Nubia and Abyssinia.

What are the latitudes and longitudes of Dongola, Sennaar, and Gondar? What are the distances from Dongola to Cairo and Deir? How are Darfoor and Adel situated in respect to Abyssinia? Whether has Dongola or Bornoo the greater latitude? What towns of Africa have nearly the same longitude as Sennaar?

LV.—BARBARY.

1. *Situation.*—Barbary extends from Egypt to the Atlantic, and from the Mediterranean to Sahara.*

DIVISIONS.	CHIEF TOWNS.
Barca	Barca
Tripoli	Tripoli
Tunis	Tunis
Algiers	Algiers, Constantine
Fez	Fez
Morocco†	Morocco, Mogadore

with recent blood for sauce. In their punishments, they are excessively severe; and prisoners taken in war are treated with the greatest barbarity.

Questions on the Notes to Sections LIII & LIV.

2. What number of inhabitants is Sennaar said to have formerly contained?
3. At what time is the heat greatest in Nubia? When, at that period, is travelling practicable? Of what do the high grounds in Nubia consist?
4. What is Bruce's account of Gondar?
5. What is the character of the punishments in Abyssinia? How are prisoners taken in war treated?

* 1. This country lies between 10° of west and 30° of east longitude, and between 28° and 37° of north latitude. Its length is about 2700 miles, and its breadth varies between a little more than 100 and nearly 600 miles.

† 2. Another portion of the north of Africa, which may also be regarded as a part of Barbary, is BELAD-EL-DJERID, or, as it is generally called, BILDULGERID, a name which signifies "the land of dates." Under this name, the Arabs compre-

2. *Climate.*—A large proportion of the country, particularly the higher parts and the seacoasts, has a mild, salubrious climate. In the southern parts, however, and in Barca, the heat is often excessive.*

3. *Soil.*—Much of the country is remarkably fertile: but some parts are barren deserts.

4. *Produce.*—Some of the chief productions are wheat, barley, Indian corn, rice, hemp, flax, cotton, tobacco, sugar-cane, and olives.

5. *Animals.*—Barbary contains most of the animals found in Africa, except the rhinoceros, the hippopotamus, the zebra, the camelopard, and several kinds of monkeys.†

6. *Population.*—The amount of the population is unknown; but it is so small, that the country could support four or five times the number. The inhabitants are composed chiefly of Turks, Moors, Arabs, Jews, Negroes, and Berebbers.‡

7. *Government, &c.*—In all the states of Barbary, the govern-

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hend all the countries situated on the southern declivity of the Atlas mountains. This stripe extends from the Atlantic to Egypt; and comprehends Darah, Tafilet or Tafilelt, Sedjelmessa, Zab, Gadamis, Fezzan, Audjelah, Sivah, and some other districts. Bildulgerid is often limited, so as to comprehend only a greater or less part of the extensive region above mentioned.

* 3. The mildness of the climate is produced partly by the vicinity of the country to the sea, and partly by the refreshing breezes from the snowy summits of the Atlas mountains. In the southern provinces, a suffocating wind, called the *sioom* or *shoom*, from Sahara, is often felt for one, two, or even three weeks, about the beginning of September. Such is the effect of this, that the ground is so heated as to render it almost impossible to walk upon it; and the people retire to subterranean apartments or ground stories, sprinkling the floors and walls with water and vinegar, and eating nothing but fruits. Over all Barbary, from March till September, scarcely a cloud is to be seen, and scarcely a shower falls; and, during the rest of the year, there is rarely a day during which the sun is not at least occasionally visible. The plague sometimes produces dreadful effects in various parts of this country.

† 4. The camels of Barbary are extremely useful. Of these, the *heirie*, or camel of the desert, is far the most valuable; sometimes selling for as much as two hundred common camels. An instance is recorded, in which one of these arrived in seven days at Senegal, from Mogadore, a distance, including the windings of the road, of 1000 or 1100 miles; thus travelling, for so long a period, at the rate of 150 miles a day: and, on another occasion, a Moor of Mogadore set out in the morning for Morocco, at the distance of 100 miles, and returned on the same animal in the evening of the same day. The following is the expressive description of the swiftness of this animal, given by the Arabs of Barbary: "When you meet a heirie, and say to the rider *Salem alik* (peace be with you), he is out of sight before he can return the *alik salem*; for he flies like the wind."

‡ 5. The Turks, who are the least numerous, are in general an abandoned race, a great part of them being pirates and fugitives from Turkey. At the same time, as they consider themselves masters of the country, they are haughty and overbearing to all others. The Moors and Jews are the descendants of those who were expelled from Spain. The towns and cultivated plains are chiefly occupied by the former. The Arabs are partly the descendants of those who overran the country at the commencement of Mohammedanism, and partly recent settlers from Sahara; and both kinds lead a nomade or wandering life, moving from place to place with their tents and cattle. The Jews are subjected to the most severe treatment, though they practise various trades, are the most useful class of the people, and possess the greatest degree of information. They are tolerated in the exercise of their religion; but are not allowed to possess lands, to wear a sword, to ride a horse, or to leave the country without special permission.

ment is of the most despotic kind; justice is badly administered; and punishments are excessively severe.

8. *Religion.*—The religion is Mohammedanism, of a less rigid character than in Turkey.

9. *Character, &c.*—The inhabitants of this country are represented by European writers as being treacherous, deceitful, and addicted to falsehood; and they are remarkable for their hatred and contempt of Christians, and others who differ from them in religion.

10. *Historical Sketch.*—One of the most remarkable events in the ancient history of this part of the world, was the overthrow of Carthage by the Romans, who thus made themselves masters of a great part of the north of Africa, and held it till its invasion by the Vandals in the fifth century. These barbarians succeeded in conquering all the Roman provinces in this country, by the year 455; and thus gave a blow to its ancient prosperity, from the effects of which it never recovered. About the year 530, these invaders were themselves overcome by the celebrated Belisarius; and the country continued subject to the Greek emperors, till it was overrun by the Saracens, in the latter part of the seventh century. After continuing for some time a part of the great empire of the caliphs, its governors rendered themselves independent, and erected in it several petty states, which were continually changing their limits, in consequence of mutual wars. Early in the sixteenth century, the states of Barbary attracted notice by their piracies against European ships. This annoying practice they have since continued till the present time, as far as circumstances have permitted; making prizes of vessels and their cargoes, and selling the crews and passengers as slaves. On this account, they have more than once subjected themselves to chastisement from the offended nations of Europe. One of the latest events of this kind was the bombardment of Algiers by the British in 1816, when the dey was obliged to yield to the terms dictated by his powerful assailants.

Exercises on the Map of Barbary.

In what direction does Barbary stretch? What part of it is south of Greece? Of Sicily? Of Spain? What is the general direction of the Atlas chain? What are the most northern parts of Barbary? What part has the same longitude as the Cape of Good Hope? What towns have nearly the same latitude as Jerusalem?

Questions on the Notes to Section LV.

1. Between what latitudes and longitudes does Barbary lie? What are its length and breadth?
2. What is the signification of the name Belad-el-djerid? What portion of Africa do the Arabs comprehend under this name? What countries are contained in it?
3. What occasions the mildness of the climate of Barbary? Describe the sioom, and its effects. What do the people do while it continues?
4. Which of the camels of Barbary are the most valuable? At what extraordinary rates have some of these been known to travel?
5. Of what character and conduct are the Turks of Barbary? Of what origin are the Arabs who are found there? What kind of life do they lead? What is the condition of the Jews?

LVI.—BARCA.*

1. *Situation, &c.*—Barca, a part of the ancient Libya, is the most eastern division of Barbary.

2. *Face of the Country, &c.*—Much of this country consists of barren sandy deserts. Some parts, however, particularly along the seacoast, are naturally very fertile; but they are now badly cultivated.

3. *Towns.*—Barca, Tolometa, (anciently, Ptolemais), Audjelah, Derne, and Bengazi.†

4. *Government.*—This country is governed by the beys of Derne and Bengazi, who are appointed by the bey of Tripoli.‡

LVII.—TRIPOLI.

1. *Situation.*—Tripoli lies between Barca and Tunis, extending from the Gulf of Sidra or Syrtis to that of Gabes or Cabes.

2. *Towns.*—Tripoli and Lebida.

3. *Political State.*—This country, which is of small consequence, is governed by an hereditary bey, who is in more subjection to Turkey than the deys of Tunis and Algiers.

LVIII.—TUNIS.

1. *Situation.*—Tunis lies between Tripoli and Algiers, and is bounded on the north and east by the Mediterranean.

2. *Towns.*—Tunis,§ Hammamet, Sfakes.

3. *Population, &c.*—The population is thought to amount to four or five millions. The people are more employed in agri-

* 1. After the foregoing general remarks, a few particulars may be given respecting the states of Barbary, considered individually.

† 2. This country contains magnificent ruins of the ancient Cyrené; and others supposed to be those of the temple of Jupiter Ammon, which was so difficult of access on account of the sandy tracts by which it was surrounded.

‡ 3. South-west of Barca is Fezzan, a state which is tributary to Tripoli. The chief town is Moorzook; but little is known either of it, or of the country at large.

§ 4. Tunis is one of the finest towns in Barbary. Ancient Carthage stood a few miles north-west of the site of this city; and some of its ruins still remain.

culture, and are less addicted to piracy, than those of the other states; and they are more civilized and courteous.

4. *Political State.*—Tunis is governed by an hereditary bey, who scarcely acknowledges the sovereignty of Turkey.

LIX.—ALGIERS.

1. *Situation.*—Algiers lies between Tunis and the empire of Morocco. It is bounded on the north by the Mediterranean; but its southern boundary is uncertain.*

2. *Towns.*—ALGIERS, Constantine, Oran or Warran, Telemsen, Bona,† &c.

3. *Climate, &c.*—The climate is delightful, except when the sloom blows from the desert; and a great proportion of the country is exceedingly fruitful.

4. *Government.*—Since 1710, the dey has been invested with absolute power, though nominally controlled by a douan or council. He is chosen by the soldiers, out of their own body. Hence, the elections often produce bloody contests; and not one in ten of the deys escapes assassination by some aspirant to the sovereignty.

LX.—EMPIRE OF MOROCCO.

1. *Situation, &c.*—The empire of Morocco consists of the kingdom of Fez or Faz in the north-east, and that of Morocco or Marocca in the south-west; and is situated between Algiers and the Atlantic.

2. *Towns.*—The principal towns are MOROCCO, Mequinez, Mogadore, Fez, Sallee, Tangier, Mazagan, and Ceuta.‡

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* 5. This country comprehends the ancient Numidia, with part of Mauritania.

† 6. Algiers, or Algier, properly Al-jezair or Al-jezirah (*the island*, from an island before the city, now joined to it by a mole), is a handsome town, finely situated, and containing from 80,000 to 100,000 inhabitants. Constantine, anciently Cirta, has a population of nearly 100,000, and exhibits many fine remains of Roman architecture.

‡ 7. Morocco, or Merakash, was founded in the year 1052. Its population has been stated by different writers at 20,000, 270,000, and 650,000; and that of Fez at 30,000, 100,000, and 380,000! The high estimates here given are evidently absurd exaggerations; as the country has neither trade, manufactures, nor other resources, to support towns of such population. Equal uncertainty prevails respecting the population of the empire, which has been estimated by different travellers at 2,000,000, 6,000,000, and 15,000,000.

3. *Soil, &c.*—Most of the country is remarkably productive, particularly in grain and pasturage.

4. *Government.*—The government of Morocco is, both in principle and practice, one of the most despotic in the world; the mandates of the emperor being the only laws, and the exercise of his authority being limited by no restraints.

5. *Commerce.*—The commerce, which is very limited, is carried on chiefly by the port of Mogadore, and by means of caravans through Sahara to Timbuctoo.*

LXI.—SAHARA.

1. *Situation, &c.*—Sahăra, or Zahăra, is a vast country, reaching, in its entire extent, from the Atlantic to Egypt, and having in some places a breadth of nearly a thousand miles. This name, however, is generally confined to the desert regions west of Fezzan, while other names are given to the eastern parts.

2. *Face of the Country.*—A large portion of the surface is covered with loose sands; while in other parts, there are rocky heights and some valleys. In some instances, also, there are extensive tracts covered with sharp pebbles.†

* 8. The chief imports at Mogadore are cloths, linens, muslins, tea, sugar, iron, and hardware; and the principal articles exported are almonds, raisins, gums, olive oil, leather, elephants' teeth, and drugs. From the misgovernment of the country, however, and the difficulty of recovering debts, the Europeans have little inducement to engage in a trade, which, under proper regulations, might be of great mutual advantage. The caravans carry into the interior of Africa, Irish and German linens, muslins, cloths, tea, sugar, spices, tobacco, &c.; and bring back slaves, gold, elephants' teeth, gums, ostrich feathers, and various other articles.

† 9. In these dreary regions, the only vegetable productions commonly to be met with, except in the oases, are thorny shrubs, brambles, nettles, and ferns, which afford support to a few monkeys and gazelles. Other animals are ostriches, numerous flocks of which feed on lizards, snails, and some of the thinly-scattered plants; also, lions, panthers, and serpents, sometimes of enormous magnitude; while ravens, and other birds of prey, dispute with dogs about the dead bodies of men and quadrupeds. A great part of the scanty population are Arab Moors, who are scarcely less savage than the wild beasts of the desert, and are far more to be dreaded by travellers. Caravans, or *akkabahs*, traverse the desert in different directions. One of the principal is that which travels annually from Fez to Timbuctoo. This passes through Tatta and Tarassa, and completes the journey in 129 days; 54 of which are employed in travelling about seven hours daily, at the rate of three miles and a half per hour; and 75 in resting at different places. Another caravan takes a more westerly route, and employs five or six months on the journey. The distresses to which travellers through the desert are subjected, from exposure to a burning sun, and from want of water, are often dreadful. The samoom, or sloom, often blows with such a burning influence, as to dry up the water carried by the camels in leathern bottles for the use of the caravan. On these occasions, the camels often die from thirst; and they are sometimes killed by their owners, for sake of the little

3. *Climate.*—The heat in the desert is often extreme; and the atmosphere, near the horizon, appears glowing with red vapour in all directions, as if it were lighted up by the fires of numerous volcanoes. In some places, there is scarcely any rain; and in others, its effects are slight and transient

Exercises on the Map of the Barbary States and Sahara.

What towns of Africa have nearly the same latitude as Mogadore? Whether is Algiers or Sallee farther north? How are Tunis, Tripoli, and Algiers, situated in respect to each other? Trace the route of the caravan from Fez to Timbuctoo, as described in note 9, page 169. What are the latitudes and longitudes of Tunis, Fez, and Morocco?

LXII.—GUINEA AND CONGO.

1. *Situation, &c.*—These large countries reach along the Atlantic, from the river Senegal to the southern extremity of Benguela. Their extent into the interior is uncertain; but it is often very considerable.

2. *Divisions.*—The principal divisions of GUINEA are,

Senegambia, Senegal, or North Guinea; containing the countries of the Yalofs, Foulahs, &c.

South Guinea; containing the Grain Coast, Ivory Coast, Gold Coast, country of the Ashantees, &c.

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liquid that may remain in their stomachs. By such means, the travellers are perhaps enabled to make their way to the next fountain; and, if it contain water, their lives are saved: if it be dried up, as not unfrequently happens, they all perish by a death of a more dreadful nature than it is possible to conceive. Occurrences of this kind are by no means rare. Such an event took place in 1805, when a caravan, consisting of 2000 men, with 1600 camels, was so circumstanced, and the men and animals all perished without exception.

Questions on the Notes to Sections LVI.....LXI.

2. What ruins are there in Barca?
3. Where is Fezzan? What is its chief town?
4. Where did Carthage stand? Are there any ruins of it remaining?
5. What ancient country is comprehended in the state of Algiers?
6. Whence does Algiers get its name? What sort of town is it? What are the populations of it and Constantine? What was the ancient name of the latter?
8. What are the chief imports of Mogadore? Its chief exports? What obstacles are there to commerce in Morocco? What articles do the caravans carry into the interior of Africa?
9. What vegetable productions are to be met with in the desert of Sahara? What animals? What inhabitants are there? What is their character? Describe the journey of the caravan from Fez to Timbuctoo. At what rate do they travel? How are the distresses of travellers in the desert occasioned? What is the effect of the samoom? What means do the travellers adopt, on such occasions, to save themselves? When do these means succeed? When do they fail? What dreadful event of this kind took place in 1805?

East Guinea, or the Slave Coast; comprehending Dahomey, Benin, Biafra, the country of the Calbongos, &c.

The principal parts of CONGO, or, as it is sometimes called, LOWER GUINEA, are,

Loango, Congo Proper, Angola, and Benguela.

3. *Towns.*—There are few towns of importance in these countries. The principal are Jillifrey, Medina, Sierra Leona or Sierra Leone,* Timbo, Dromera, Cape Coast, Abomey, Angra, Montong, Booali, St. Salvador, Bombi, and Benguela. The towns, or rather villages, of the natives consist of mud cabins; and those of the Europeans are forts or factories.

4. *Climate.*—On this coast, the heat is more intense than in any other part of the world.†

5. *Animals, &c.*—Almost all the African animals are to be found in Guinea. The vegetable productions are extremely numerous and varied. Some of the principal are rice, durra, Indian corn, pine-apples, tobacco, aromatic plants, gums, indigo, and various kinds of trees.‡ The principal mineral is gold, which is found in considerable quantities.

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* 1. Sierra Leona is an English settlement, formed in 1787, by a philanthropic association, called the African Institution, for the express purpose of civilizing the Africans and improving their condition. Great exertions have been made by this laudable society, to counteract the evils of the slave trade, and finally to abolish it; and, though they have had numerous difficulties to contend with, they have established above 2000 schools, and done much good in other respects.

† 2. In this part of Africa the wind blows almost constantly from the north or north-west, except in the Gulf of Guinea, where the prevailing wind is from the south-west; a circumstance which makes vessels avoid that gulf, from the difficulty of getting out of it, if they venture in. On some parts of the coast, there are tremendous tornadoes or hurricanes. These are whirlwinds which continue only about a quarter of an hour; but, in that short time, they tear up trees by the roots, throw down cottages, and sometimes destroy entire villages. They also occur in Saharn, where they raise vast columns of sand, like water-spouts at sea. An easterly wind, called the *harmattan*, is felt about the solstices, which causes the air to be darkened with a dry haze, and the skins of men and animals to become cracked and chopped.

‡ 3. The most remarkable tree is the vast *baobab*, which, while only 20 or 30 feet high, is sometimes above 100 feet in circumference. As the tree increases in size, its trunk becomes hollow, so as to form a cavity large enough to serve as a temple for the negroes, a hall of assembly for a tribe, or a habitation for several families. It is clothed with beautiful green foliage, which is said to have given name to Cape Verde; and it produces fruit, called monkey's bread, which affords abundant aliment to the negroes. There are also cocoa, palm, and orange trees; as also the valuable butter-tree: and cotton is produced, which even surpasses that of Brazil. The Guinea grass grows to the vast height of ten, twenty, and even thirty feet; covering extensive spaces, where flocks of elephants, boars, and other animals, wander unseen, and where the huge boa serpents lie in wait for their prey. The African elephants are smaller than those of Asia; but they produce better ivory. They are never tamed. Monkeys are very numerous; and there are multitudes of beautiful birds, particularly paroquets. In remote forests also, there are found

6. *Political State.*—These countries contain a great number of states, which are in general governed by kings or chiefs, and which differ much in extent and power. Some of the principal are the empire of the Yalofs or Jalofs; the kingdoms of Benin, Dahomey, Warree, Owal, Bambook, Loango, Cacongo, Congo, and Angola. Most of the sovereigns are absolute; and the country is almost perpetually in a state of anarchy and internal warfare.

7. *Slave Trade.*—For more than three centuries, natives of this part of Africa have been exported in great numbers, as slaves, to America and the West Indies. This inhuman traffic has been productive of misery to millions of individuals, thus exiled from their homes and friends; and has been the cause of cruelty, oppression, and wars, by which thousands perish, in consequence of the means employed to furnish the slaves.*

8. *Religion.*—Mohammedanism is professed in the northern parts: but, in the southern regions, the religion is in general fetichism; the people worshipping a bird's feather, a shark's tooth, a tree, a serpent; the horns, hoofs, or other parts of quadrupeds; the beak or claw of a bird, and numerous other objects; any of which is called a *fetich.* Attempts have been made, by the French and Portuguese, to introduce the Roman Catholic faith in the southern kingdoms, but with no permanent success.

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numberless swarms of termites, a kind of ants, which erect structures in form of pyramids, sixteen feet high, and covering a space of more than a hundred square feet.

* 4. This trade was commenced by the Spaniards and Portuguese in 1503; and, holding out strong inducements to mercantile avarice, it was gradually engaged in by the various commercial nations of Europe; and, in later times, by the United States of America. This last power and England abolished it in 1807; and, since that time, the other states engaged in it have yielded a tardy and reluctant assent to a similar measure. Still, however, a contraband trade is carried on to a great extent; but it is to be hoped, that the exertions of England will finally succeed in annihilating this unnatural and unchristian commerce. In the practice of this trade, the slaves are brought to the coast of Guinea, for sale to the Europeans, by the natives themselves; who obtain, in return, brandy, fire-arms, and various other articles of European manufacture. The persons thus sold are prisoners taken in war, individuals found guilty of crimes, and others whom there may be any pretext for thus disposing of. Hence, it is not unusual for a prince, on the arrival of a slave ship, to set out at night with an armed force, to set fire to a village while the inhabitants are asleep, and to carry them off while they are endeavouring to save themselves from the flames. The same cause perverts justice; as persons are often condemned on the slightest grounds, and false witnesses are frequently procured to charge individuals with witchcraft or some other crime, and the universal punishment is slavery. Even a father or mother will sometimes sell a child for a few bushels of rice; and a son has been known to sell his father. Of the slaves embarked on board the vessels, it has been computed, that seventeen out of the hundred die on the passage in consequence of diseases arising from so many of them being crowded into the same ship; and that thirty-three others die in the *seasoning*, the term applied to the training of them to the severe labours which they are destined to undergo: so that about half of those who leave Africa are carried off by a miserable death in a few months; and the wretched and degraded state in which the survivors live, is well known. Such are some of the evils brought by the Europeans on this part of Africa, instead of the improvement and happiness which they might have produced by the introduction of arts, civilization, and the Christian religion.

9. *Character, &c.*—The inhabitants are very little civilized, and have many bad propensities and practices. Their princes are, in general, proud, cruel, and tyrannical.

LXIII.—DISTRICT OF THE CAPE OF GOOD HOPE.

1. *Situation, &c.*—The principal part of the southern division of Africa, is the district of the Cape of Good Hope. This, which is as large as Great Britain and Ireland, is situated between the Koussie and Fisch rivers; and is bounded on the north by mountains in the latitude of about thirty-two degrees south. It now belongs to Britain.

2. *Town.*—The only town of any consequence is Cape Town, which has a population of about twenty thousand.

3. *Climate, Soil, &c.*—The climate is remarkably mild and healthful: and much of the soil is very fertile, yielding valuable agricultural productions, with fine pastures; and producing wines, particularly that called Cape Madeira,* and the excellent kind called Constantia.

4. *Population.*—The population exceeds 120,000; of whom above a third are free, about a fourth part Hottentots, and the rest slaves.†

Exercises on the Map of Guinea, Congo, and the District of the Cape of Good Hope.

What are the latitudes of Angra and Montong? The longitude of Abomey? How is Loango situated in respect to Biafra and Benguela? What towns of Africa have nearly the same longitude as Timbo? What part of Barbary lies north of the Cape of Good Hope? What are the latitude and longitude of Cape Town? Of Cape Verde? How are Jillifrey and Sierra Leone situated in respect to each other?

* 5. This wine is so named, because the species of vine that produces it was originally brought from Madeira.

† 6. The whites are of Dutch, German, French, or English origin. Those of Dutch descent are the most numerous, in consequence of the colony having, till lately, belonged to Holland; and hence, the Dutch manners and religion predominate. The Hottentots, Bushmans, and other tribes dwelling to the north of this district, are in the most uncivilized state, and are represented as excessively disgusting in figure and appearance, particularly the females. They are also extremely dirty in their habits; and the Bushmans, or Boschmans, are cowardly, cruel, and murderous, in their dispositions. Many efforts have been made by the Christian missionaries, to reclaim these barbarians; and, in several instances, with much success, and with the prospect of still greater. The Caffres, on the eastern coast, are a much more interesting race, and have shown much willingness to be instructed in Christianity.

LXIV.—SOUTH-EASTERN AFRICA.

1. THE principal divisions of this part of Africa, which is very little known, have been given already in the *General View* of this division of the world. The coast, between Capes Corrientes and Delgado, is claimed by the Portuguese: the rest is independent.

2. The principal kingdoms are those of Sofala or Botonga, Monomotapa, Magadoxa, and Adel; and there are numerous petty states. Mozambique is governed, in subjection to the Portuguese, by a native prince.

3. The chief towns on the coast, are Sofala, Mozambique, Quiloa, Zanzibar, Melinda, and Magadoxa; and the chief town of Monomotapa is Zimbao.

4. The Portuguese formerly possessed much more of the country than they do at present, but were driven out by the Arabs. Many of the inhabitants profess Mohammedanism, and appear to be of Arabian descent.

5. A great proportion of the country is naturally rich in soil; and gold seems to be abundant in several places. The inhabitants are, for the most part, in a very uncivilized state, and do not avail themselves of the natural advantages of the country.

LXV.—INTERIOR OF AFRICA.

1. A LARGE portion of the interior of Africa is known by the general name of Soudan, Nigritia, or Negroland. The interior of Southern Africa is almost entirely unknown.

2. Some of the principal states in Negroland are Karta, Bambarra, Timbuctoo or Tombuctoo, Houssa or Hoossa, Bornoo, and Darfoor; and there are many smaller.

Questions on the Notes to Sections LXII & LXIII.

1. What was the object of the African Institution? What has this association effected?
2. In what direction does the wind blow on the coast of Guinea? What are the durations and effects of the tornadoes? What effect is produced by the harmattan?
3. Describe the baobab. What is its size? What does it produce? Name some of the other trees of Guinea. What sort of cotton is produced there? To what height does the Guinea grass grow? In what do the African elephants differ from the Asiatic? What are the termites? What do they erect?
4. Who commenced the African slave trade? Who were the first to abolish it, and when? How were slaves procured in this trade? What description of persons were the slaves? What were the unjustifiable means taken to procure them? What proportion of the slaves usually died on the passage from Africa? What proportion in the seasoning? What is meant by the *seasoning*?
5. Why is Cape Madeira wine so called?
6. Of what origin are the whites at the Cape of Good Hope? Of what appearance, habits, and dispositions, are the natives? With what success have the efforts of the missionaries been attended?

3. Some of the chief towns are Karta, Sego, Walet, Timbuctoo, Hoossa, Bornoo. Of these, Walet, Timbuctoo, Hoossa, and Bornoo, are large and populous. The last, in particular, is larger than Tripoli; and, according to some accounts, it is even more populous than Grand Cairo.

4. In these regions, the climate is in general very hot; but the country is refreshed by copious periodical rains, and much of it is remarkably fertile. The inhabitants are, in many places, considerably more civilized than is generally imagined.

LXVI.—AFRICAN ISLANDS.

1. Madagascar is a vast island, 1000 miles long and 250 broad. Its population is, according to some accounts, a million and a half; and, according to others, four millions. It is divided into several kingdoms. The principal towns are Bombetoc and Moozangaye, the latter of which contains 30,000 inhabitants. It is a fine, fertile island; and the climate is agreeable, and in general salubrious, though hot.

2. Saint Helena, in the Atlantic Ocean, lies about the sixteenth parallel of south latitude, and belongs to Britain. It is a rocky isle, twenty or thirty miles in circuit, and contains about two thousand inhabitants. From its remote situation, and its great security, it was selected by the British government as the final place of exile for Bonaparte; and within its narrow limits, he terminated his mortal career, after having shaken to its centre a large portion of the civilized world.

3. The Cape Verde Islands are a groupe, ten in number, lying about 400 miles west of the promontory of that name. The largest is San-Iago. They are often subjected to great droughts, which produce famine and distress among the inhabitants. They belong to Portugal.

4. The Canary Isles are another groupe, near the coast of Morocco. These—from their mild, agreeable climate, their fine productions, and other advantages—were called, by the ancients, the *Happy* or *Fortunate Islands*. The most important are Teneriffe, Grand Canary, Ferro or Hierro, Lancerota, and Forteventura. Though sometimes scorched with droughts, the islands of this groupe yield, in the greatest abundance, the necessaries and luxuries of life. The island of Teneriffe produces Teneriffe wine; and contains the celebrated *Peak*, which is more than 11,000 feet high. These islands belong to Spain, and their population exceeds 200,000 inhabitants.

5. About 300 miles north of the Canaries, is the fine island of Madeira, which belongs to Portugal, and which is famous for its wine. The climate is temperate and agreeable, and there

is almost perpetual spring. The population is about 100,000; and the principal town is Funchal, which contains about 15,000 inhabitants. Near this island there are some others of minor importance.

6. There are many other islands near the coast of Africa; but they do not require individual notice.

Exercises on the Map of the South-Eastern and Interior Parts of Africa, and of the African Islands.

Whether is Cape Guardafui or Cape Verde farther north? What towns in Africa have nearly the same longitude as Jerusalem? Through what other island of Africa does the parallel of St. Helena pass? What are the latitudes and longitude of Moozangaye, Mauritius, Bourbon, and Teneriffe? How are the Comora Isles situated in respect to Mozambique and Quiloa? How are Timbuctoo, Hoossa, and Bornoo, situated in respect to each other?

AMERICA.

LXVII.—GENERAL VIEW.

1. *Situation, &c.*—America is situated between the Atlantic Ocean on the east, and the Pacific on the west. It consists of two grand divisions, North and South America, which are joined together by the Isthmus of Panama or Darien.*

NORTH AMERICA.

2. *Divisions.*—The principal divisions of North America, are the United States; the British Possessions; and Mexico, with the adjoining countries, which lately belonged to Spain.

3. *Islands.*—Besides the West Indian groupe between North and South America, there are New-

* 1. Notwithstanding the adventurous voyages of Captain Parry, for the purpose of discovering the northern boundary of America, it is still but partially traced. Scarcely any rational doubt, however, can now remain, that it is formed by parts of the Northern Ocean, extending, near the seventieth degree of north latitude, from Baffin's Bay to the sea north of Bhering's Strait. The southern boundary of the American Continent is the Strait of Magallan or Magellan, in 53° or 54° of south latitude.

foundland, Cape Breton, St. John's, Anticosti, and others off the eastern coast of North America; and several near the north-western coast.

4. *Seas, &c.*—The seas contiguous to North America, are the Atlantic and Pacific Oceans, the Gulf of Mexico, and Hudson's and Baffin's Bays. There are also the Gulf of California, the Bays of Honduras and Campechy, the Gulf of St. Lawrence, &c.; also Bhering's Strait, the Strait or Gulf of Florida, the Strait of Belleisle, Hudson's Strait, &c.

5. *Peninsulas.*—The peninsulas are those of California, Yucatan, East Florida, Nova Scotia, Labrador, &c.

6. *Mountains.*—The principal mountains in North America, are the Rocky Mountains, and their continuation, the Mexican chain, which extend from the Isthmus of Panama to the sixty-fifth parallel of north latitude; and the Apalachian or Alleghany chain, extending through the United States in a direction nearly parallel to the shore of the Atlantic.*

7. *Lakes.*—The chief lakes are the five south-west of Canada. These are Superior, Huron, Michigan, Erie, and Ontario.† Besides these, there are Lake

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* 2. The Alleghanies are, in general, low; the highest not exceeding 5000 or 6000 feet. The Rocky Mountains have a base, in several places, 300 miles broad; and their loftiest summits, which are covered with perpetual snow, rise in the north to the height of 12,000 feet, and in Mexico to the height of 17,000 or 18,000. These seem obviously to be a continuation of the great chain of the Andes, in South America. The whole chain, therefore, extends 9000 or 10,000 miles, a length which greatly exceeds that of any other chain in the world.

† 3. The largest of these lakes is Lake Superior, which exceeds in extent every other body of fresh water at present known in the world. Its length is about 400 miles, and its breadth about 160. It receives the waters of nearly forty rivers, some of which are of considerable magnitude. It contains several islands; one of which, Isle Royale, is said to be 100 miles long, and 40 broad. Its water is remarkable for its great transparency, so that fish may be seen at a vast depth. It is subject to tremendous storms, and has waves little inferior to those of the ocean. From its northern situation, it is often covered with ice to the extent of 70 miles from the shore. Lake Huron, the second in point of magnitude, is of an irregular form, and is about 250 miles long, and 200 broad. Lake Erie or Oswego, and Lake Michigan, are each about 300 miles long; and Lake Ontario or Cataraguy, about 160 miles. Ontario is so deep that, in some places, the bottom has not been found, though it has been sounded with a line of 350 fathoms; and, from this circumstance, as well as from volcanic matter having been observed on its shores, some have supposed it to have been, at one period, the crater of a volcano. Lake Erie contains, towards the west, a number of beautiful islands, which are infested, in a remarkable degree, with reptiles, especially rattlesnakes: and the margin of the lake is, in several places, completely covered for many acres, with the large leaves of the pond lily; on which, in summer, myriads of water-snakes are seen basking in the sun.

Winipic or Ouinipic, Slave Lake, Lake Champlain, and many others.

8. *Rivers.*—The largest rivers are the St. Lawrence and the Mississipi. The former flows north-easterly, from Lake Ontario, through the Gulf of St. Lawrence, into the Atlantic. The Mississippi flows southward into the Gulf of Mexico, after receiving in its course the Missouri, the Ohio, the Arkansas, the Red River, the Illinois, and several others. Of these, the Missouri is greater than the Mississippi itself, at the place of their junction.* Besides those above mentioned, there are the Rio Bravo del Norte, or North River, flowing south-eastward, through Mexico, into the Gulf of the same name; and many in the United States.

SOUTH AMERICA.

9. *Divisions.*—The principal countries of South America, according to the former division, were New Granada, Venezuela or Caraccas, and Quito, in the north; Peru and Chilé, in the west; Patagonia, in the south; Paraguay and Brazil, in the east; and Amazonia, extending from the north-east into the interior. By the late changes, it has been divided into the republics of Colombia, Peru, Upper Peru, Chilé, and the United Provinces of Rio de la Plata; besides Brazil and Amazonia.

10. *Islands.*—Terra del Fuego, the Falkland Isles, Juan Fernandez, &c.

11. *Mountains.*—The principal mountains are the great chain of the Andes, which extends, near the shore of the Pacific, from the Strait of Magallan to the Isthmus of Darien; and contains the highest

* 4. The St. Lawrence is 700 miles in length, if its origin be taken from Lake Ontario; or above 2500 miles, if it be taken from the source of some of the rivers that fall into Lake Superior. It is 90 miles wide at its mouth; and it there contains the island of Anticosti, which is 120 miles long and 30 broad. It is navigable for ships of the line, at the distance of nearly 400 miles from the sea; and for ships of considerable size, as far as Montreal. It is thus justly ranked among the largest rivers in the world. The Mississippi is also a very large river; having a course of about 2500 miles, from the source of the Missouri to the Gulf of Mexico.

mountains in the world, except some in the Himalaya chain in Asia.* The western region of South America is, in general, a vast plateau, of the ordinary elevation of 12,000 feet; to the east of this, there is an expanse of low, plain country, two or three times broader; and Brazil, on the east of the continent, is another plateau, of less elevation.

12. *Rivers.*—The Amazon, the largest river in the world, has an easterly course from the Andes, and falls into the Atlantic, at the equator. The Rio de la Plata, or River of Silver, is composed of the Parana, the Pilcomayo, the Vermejo, and others; and falls into the Atlantic, at Buenos Ayres. The Orinoco, in the north, flows north-easterly into the Atlantic; and the St. Francis passes, in the same direction, through Brazil.†

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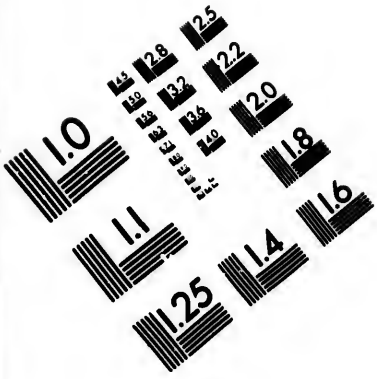
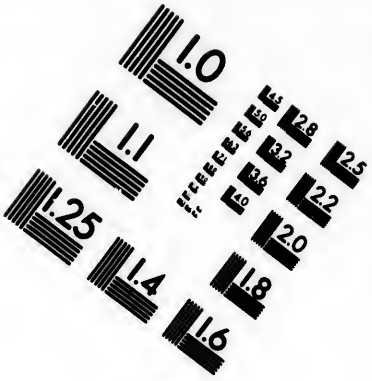
* 5. The stupendous chain of the Andes may be regarded as a vast plateau, crowned with other cordillēras or chains; from which, peaks and summits often rise to an extraordinary height. The plateau is narrow towards its southern extremity; but, in Potosi, it has a breadth of 180 miles. Its distance, from the shore of the Pacific, seldom exceeds ten or twelve leagues; and, like its continuation in North America, it forms a barrier which causes the rivers to flow towards the Atlantic, and thus occasions their great magnitude by lengthening their courses. Some of the highest summits are Chimborazo, Cotopaxi, Pichincha, Antisana, and Cayambé; and, in the entire chain, there are said to be fifteen or sixteen volcanoes, one of the most dreadful of which is Cotopaxi. The height of Chimborazo, which is situated under the equator, has been found by measurement to be about 21,000 feet or almost four miles; and some of the others are nearly as high. So much of the summits of these mountains as exceeds the height of 15,000 or 16,000 feet, is covered with perpetual snow. At these high elevations, there are tremendous storms of snow and wind; and the greatest hardships have been endured by those who visited them. Such persons experienced great difficulty in breathing, from the extreme rarity of the air: and such was the cold, that their feet were swelled so as to render them almost incapable of walking; their hands were covered with chilblains; and their lips and faces were so swelled and chopped, that it was impossible to move a muscle, or even speak, without blood issuing from the skin. They were often enveloped in dense fogs; and the intervals during which these disappeared, only enabled them to ascertain more fully the desolation of the surrounding scene, and to see the clouds beneath them, which were often discharging storms of rain and thunder on the plains that lay thousands of feet below the place where they stood.

† 6. The rivers of America, like its lakes and mountains, are on the grandest scale. The gigantic Amazon, called also the Maranon or Orellana, is composed of a vast number of streams; several of which, in other parts of the earth, would be considered large rivers. The principal of these have their origin in the Andes; and the distance from the Atlantic to the source of the Ucayal, which seems to be the largest, is more than 3000 miles. For 200 or 300 miles from the Atlantic, such is the size of the river, that the banks on both sides can scarcely be seen at the same time, from a vessel in the middle; and, for many hundred miles above this part of its course, the breadth is from half a league to a league. The depth, also, for a long space, exceeds 100 fathoms; and, at 1500 miles from the sea, it is nearly 40 fathoms. It and its branches are so well adapted for navigation, that large vessels may ascend nearly to the Andes, the fall being generally little more than six inches in the mile. The tide ascends to the distance of 600 miles from the ocean; and, when it and the





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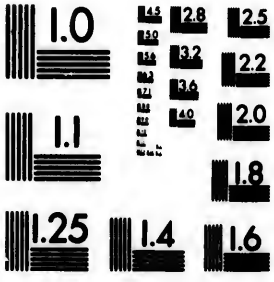

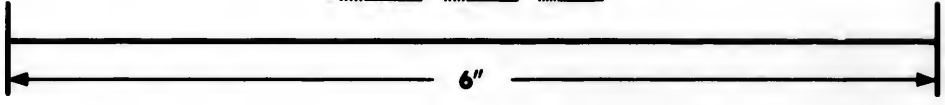

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13. *Climate of America.*—At the northern and southern extremities of this great division of the globe, the cold is intense. In many of the intermediate parts, particularly in districts that have small elevation, the heat is great. In all America, however, the heat is less than in the old continent, in the same latitude, and at the same elevation; and the climate is in general moist.*

14. *Historical Sketch.*—America was discovered, in 1492, by Christopher Columbus or Colon, a native of Genoa, in the service of Spain; who thus opened a noble field for European enterprise, and communicated an impulse to the energies of Spain, Portugal, England, and France, which has produced perhaps greater effects on the civil and political state of the world, than any other event that has ever occurred. Soon after the original discovery, Brazil was occupied by the Portuguese, and most of the rest of South America by the Spaniards. In North America, Mexico and some of the neighbouring countries were

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river meet, the shock occasioned by the collision, is tremendous; causing the water to rise to an extraordinary height, with loud noise, and inundating the adjoining banks. This conflict is called by the Indians the *pororoca*. The Orinoco, though much inferior in magnitude to the Amazon and La Plata, is so large, that when Columbus saw the volume of water which it poured into the ocean, he immediately concluded that the country which could produce such a river, must be a continent.

* 7. Various causes have been assigned for the coldness and humidity of the American climate. The most satisfactory seem to be the narrowness and elevation of the continent about the torrid zone, and its being covered with vast forests; and also its great extent in the frozen regions of the north.

Questions on the Notes to Section LXVII.

1. How is it probable that the northern boundary of America is formed? What is the southern boundary of the American continent?
2. What is the elevation of the highest of the Alleghany mountains? What are the heights of some of the Rocky and Mexican mountains? What is the length of the entire chain of these and the Andes?
3. What is the largest fresh-water lake at present known? What are its dimensions? How many rivers does it receive? For what is its water remarkable? To what is it subject? What is the consequence of its northern situation? What opinion has been entertained respecting Lake Ontario, and why? What does Lake Erie contain? What reptiles are in its islands, and round its margin?
4. What is the length of the St. Lawrence? How broad is it at its mouth? What are the length and breadth of the island of Anticosti? How far is it navigable for ships of the line? How long is the course of the Mississippi?
5. What is the breadth of the Plateau of the Andes? How far is it from the shore of the Pacific? What occasions the great magnitudes of the American rivers? What are some of the highest summits of the Andes? What volcanoes do they contain? What is the height of Chimborazo? What storms are there on the summits of the Andes? Describe the hardships suffered by persons who have ascended them.
6. What other names has the Amazon? Of what is it composed? Where have the principal rivers that flow into it their origin? How far is the source of the largest from the Atlantic? What is the breadth of the Amazon at different places? The depth? How far does the tide ascend? Describe the pororoca. What did Columbus infer when he saw the quantity of water poured into the ocean by the Orinoco?
7. What are the most probable causes of the coldness and humidity of the American climate?

also seized by Spain; while the eastern parts were gradually occupied by Britain. The most prominent events that have occurred in late times, are the formation of the United States into an independent republic, in 1783; and the recent establishment of the late Spanish possessions, both in North and South America, into independent states.

Exercises on the Maps of North and South America.

What are the longitudes of the most eastern and most western points of North and South America? What is the latitude of the Isthmus of Panama? Of the most southern point of North America? Of the most northern point of South America? What is the latitude of Bhering's Strait? Through what parts of America does the meridian of 70° west longitude pass? How are the three peninsulas of East Florida, California, and Yucatan, situated in respect to each other? What is the general direction of the western coast of South America? Whether is the greater part of South America north or south of the equator? Between what parallels are the five great lakes south-west of Canada situated? With what meridian does the chain of the Andes coincide for a considerable length?

NORTH AMERICA.

LXVIII.—UNITED STATES.

1. *Situation, &c.*—The territories of the United States extend from the Atlantic to the Pacific, and from the Gulf of Mexico to the St. Lawrence and the great lakes of Canada.*

2. *Divisions.*—This vast territory is at present divided into the district of Columbia; twenty-four states; three territories, with civil governments, but without the constitution or privileges of states; and three other territories, not yet occupied by a civilized population. These are as follows:

* 1. The northern boundary, which is not exactly settled, is formed by New Brunswick, the St. Lawrence, Lakes Ontario, Erie, Huron, and Superior; and a line extending to the Pacific, and nearly coinciding with the forty-ninth parallel. The coast of the Pacific, between this and the forty-second parallel, belongs to the United States. They claim also the coast as far as the sixtieth parallel; but this is disputed by Russia. The entire territory is divided, by the Mississippi, into parts which are nearly equal. The greatest length, from east to west, is about 2800 miles; the breadth, from north to south, about 1300; and the content has been estimated at 2,300,000 square miles. This extent has been equalled by few of the great empires that have ever been established in the world; and such are the fertility and resources of the country, that it is capable of supporting an immense population, and may yet attain no ordinary degree of greatness and power.

DIVISIONS.	CHIEF TOWNS.
I. Federal District of Columbia	WASHINGTON
II. New England States:	
1. Maine (1820)*	Portland
2. New Hampshire	Portsmouth
3. Vermont (1791)	Montpellier
4. Massachusetts	Boston, Salem
5. Rhode Island	Providence
6. Connecticut	Newhaven
III. Middle States:	
1. New York	NEW YORK, Albany
2. New Jersey	Newark, Trenton
3. Pennsylvania	PHILADELPHIA, Pittsburg
4. Delaware	Wilmington, Dover
5. Maryland	Baltimore, Annapolis
IV. Southern States:	
1. Virginia	Richmond, Norfolk
2. North Carolina	Newbern, Edenton, Raleigh
3. South Carolina	Charleston
4. Georgia	Augusta, Savannah, Louisville
5. Alabama (1819)	Mobile
6. Mississippi (1817)	Natchez
7 Louisiana (1811)	New Orleans
V. Western States:	
1. Tennessee (1796)	Knoxville, Nashville
2. Kentucky (1792)	Lexington
3. Ohio (1802)	Cincinnati
4. Indiana (1816)	Vincennes
5. Illinois (1818)	Kaskaskia
6. Missouri (1820)	St. Louis
VI. Territories with Settlements:	
1. Florida	St. Augustine, Pensacola
2. Michigan	Detroit
3. Arkansas	Arkopolis
VII. Territories without Settlements:	
1. North-west Territory	
2. Missouri Territory	
3. Western Territory	

* 2. The numbers annexed to the names of eleven of the states, denote the years in which they were erected into distinct states. The other thirteen have been

3. *Seaports.*—The principal ports for trade are New York, Boston, Philadelphia, Baltimore, New Orleans, Salem, and Charleston.

4. *Rivers.*—Missouri, Mississippi, Ohio, Illinois, Tennessee, Alabama, Connecticut, Hudson's River, Delaware, Susquehanna, Patomac, &c.

5. *Towns.*—The principal cities and towns are New York, Philadelphia, Baltimore, Boston, New Orleans, Charleston, Washington, Salem, Albany, Richmond, and Providence.*

6. *Climate.*—The climate is variable; sudden changes from heat to cold, and the contrary, being very usual. There are, in general, more dry days than in most of Europe; and yet there is more rain, in consequence of its falling in heavier showers. The high and mountainous districts are favourable to health; but malignant fevers are very prevalent in the low, marshy districts, near the Atlantic. In the northern states, the cold in winter is very severe.

7. *Soil and Produce.*—The soil, in its general character, is fertile; producing Indian corn, and other grain, with fine pasturage, over most of the country. In the middle states, wheat and tobacco are produced in great abundance; in the southern, cotton and rice; in Louisiana, cotton, rice, and sugar; and in the western states, wheat, Indian corn, cotton, tobacco, and hemp. Much of the country west of the Alleghanies, is remarkably fine and fertile, particularly the vast valleys of the Ohio and Mississippi.

8. *Animals.*—Besides many of the common animals, there are

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distinct since the country declared itself independent, in 1776. By the constitution, any new settlement is entitled to be erected into a separate state, when the population amounts to not less than 60,000.

* 3. According to the census of 1820, the foregoing were the only towns whose population exceeded 10,000. By that census the population of New York was 123,700; of Philadelphia, 114,400; of Baltimore, 62,700; of Boston, 43,300; of New Orleans, 27,200; of Charleston, 24,800; and of Washington, 13,200: but some of them, particularly New Orleans, have increased greatly since that time.

New York is a fine, well-built city; and its commerce is so great, that perhaps London and Liverpool are the only places that exceed it in this respect. It has also, by means of the Hudson, and the canals from that river to Lakes Erie and Champlain, advantages for inland trade far surpassing those of any other town in the United States, except New Orleans.

Philadelphia is the handsomest and most regularly built town in these states. The houses in it, as well as in New York, are of brick, and are generally three stories high. The principal streets are a hundred feet wide, and the rest not less than fifty.

The city of Washington, the seat of the supreme government, and the nominal capital of the United States, has advanced much more slowly than was expected. It has been commenced on a regular and excellent plan; very little of which, however, is yet completed. The District of Columbia lies between Maryland and Virginia, and is about ten miles square.

bisons (improperly called buffaloes), bears, wolves, ermines, beavers, seals, alligators, rattlesnakes, and other reptiles.*

9. *Population.*—By the census of 1820, the population of the United States was 9,650,000, of whom nearly a sixth were slaves.†

10. *Government.*—All the states, taken together, form a republic; which is governed by a congress, consisting of a president, a senate, and a house of representatives. Each state has also, for its own internal government, a legislature; which, in most instances, resembles the general congress.‡

11. *Manufactures, &c.*—Agriculture is the chief employment of the people. Next to this, they succeed best in some of the mechanic arts; such as in cabinet-making, in the construction of mill machinery and wooden bridges, and in the building of ships, particularly steam-vessels. They have an extensive com-

* 4. The alligators are from twelve to twenty-four feet in length, and the rattlesnakes from four to six. The lion, leopard, elephant, hippopotamus, rhinoceros, and several other animals of the old continent, do not exist in America. The horse, ass, sheep, goat, hog, and others, were not found originally, but have been introduced from Europe. Nine-tenths of the quadrupeds of the United States produce furs, which are employed for use or ornament. The principal minerals are iron, lead, and coal. The last of these is little used, in consequence of the great abundance of wood.

† 5. The population is increasing with extreme rapidity. In 1790, it was 3,920,000; in 1800, 5,320,000; and in 1810, 7,240,000; at present (1829), it probably exceeds twelve millions. The slaves are principally in Maryland, Virginia, Kentucky, North and South Carolina, Georgia, Louisiana, and Tennessee. In South Carolina, they form more than half the population. There are none in Vermont, New Hampshire, Maine, Massachusetts, or Ohio. The standing army does not exceed five or six thousand; but the militia, consisting of all the males between eighteen and forty-five, amounts to about a million. The latter have, when on service, the same pay and clothing as the regular army; but they are obliged to serve only six months at once. The navy, though very effective, is small; consisting of only eight or ten ships of the line, and about an equal number of frigates, with smaller vessels.

‡ 6. The senate consists of two members for each state, who are chosen by the respective legislatures of the states to which they belong. These are elected for six years, and one third of them vacate their seats every two years. They must be at least thirty years old; must have been citizens of the United States for at least nine years; and must be resident in the state for which they are chosen.

The house of representatives now consists of more than 200 members. Each state elects one representative for every 40,000 inhabitants, exclusive of Indians, and of two fifths of the people of colour. The representative must be an inhabitant of the state for which he is elected; must be at least twenty-five years old; and must have been seven years, or longer, a citizen of the United States. The representatives are chosen every second year.

Both senators and representatives take an oath to support the constitution; but they may be of any religion. When attending congress, they receive eight dollars per day; and when going to it, or returning from it, they receive the same sum for every twenty miles of their journey.

The president and vice-president are elected for periods of four years, by electors appointed by the people in the several states; and both are generally re-elected, so as to serve eight years. They must be natives of the United States, and not under thirty-five. The president receives a yearly salary of 25,000 dollars, or £5500 sterling; and the vice-president, a fifth of that sum.

If a bill pass both houses, after three readings, as in the British parliament, it becomes a law on being signed by the president. If he disapprove of it, he sends it for re-consideration, with written objections, to the house in which it originated. If it then pass both houses, by a majority of two thirds, it becomes a law; otherwise, it falls to the ground.

merce: exporting cotton, tobacco, sugar, grain, and timber; and importing various articles of European manufacture, besides tea, and other productions of the old continent. About half their commerce is with the British dominions.

12. *State of Education.*—Laudable and successful efforts have been made to diffuse the elements of instruction among the people at large. There are about thirty universities, the most flourishing of which are those of Harvard in Massachusetts, and Yale in Connecticut, which contain from 300 to 400 students each.*

13. *Religion.*—The prevailing religious sects are Baptists, Methodists, Congregationalists, Presbyterians, and Episcopalians; and, besides these, there are a few Roman Catholics, and some others. These all support their own clergy, as there is no established religion in any of the states.†

14. *Character, &c.*—The inhabitants are independent in spirit, intelligent, and active; but they do not yet equal the more polished nations of Europe, in refinement of taste and manners.

15. *Language.*—The English language is universally spoken in the United States; but it is, in some places, corrupted by a mixture with others.

16. *Curiosities.*—One of the most remarkable curiosities, is the great cavern in Kentucky, 130 miles south-west of Lexington.‡ Another curiosity is a natural bridge over Cedar Creek, in Virginia. This is formed by a rock stretching over a chasm 90 feet wide, and above 200 deep.

17. *Historical Sketch.*—The original United States were colonies established by emigrants, chiefly from the British Isles. The states were formed at different times, between 1607 and 1732; and they continued in peaceable subjection to Britain till 1776, when, in consequence of discontents produced by taxes imposed on them by the British parliament, during the preceding ten or eleven years, they broke out into rebellion, and declared themselves independent. The celebrated General Washington was

* 7. In the northern states, almost every grown person can read and write. The universities, however, are in general far behind those of the British Isles; and the country has yet produced few men who have made great advances in science or literature.

† 8. There are about 9000 congregations; of which, about 3000 belong to the Baptists, 2000 to the Methodists, 1200 to the Congregationalists, 900 to the Presbyterians, and 600 to the Episcopalians. Maryland is the chief seat of the Roman Catholics.

‡ 9. This astonishing cavern has been traced to the great extent of ten miles. It consists of various avenues, and several areas covered with vast arches or vaults. One of these areas occupies eight acres, and has a roof at least a hundred feet high, without a pillar to support it. The cavern contains much nitrous matter; and the air in it is pure, and the streams of water sweet and refreshing. There are also large and curious caverns in other parts of the United States, particularly in Virginia; and there are remains of walls and fortifications in Kentucky, and other places to the south-west, which show that, at a remote period, the country must have been occupied by people much farther advanced in civilization than those found in it by the Europeans.

made commander-in-chief; and, after a war of seven years, their independence was acknowledged by Britain, in November, 1782. In 1788, the present constitution was adopted; and, the succeeding year, Washington was elected the first president of the republic; an office which he held for eight years. The most remarkable event since that period, was a war with Great Britain, which began in 1812, and ended in 1815.

Exercises on the Map of the United States.

What is the general direction of the Alleghany chain of mountains? What states have no sea-coast? What states lie along the Atlantic? What are the latitudes and longitudes of New York, Philadelphia, Washington, and New Orleans? How might a person travel by land from New Orleans to Boston, without crossing a river? What are the distances from Washington to Boston, Charleston, and Kaskaskia? How are Boston, New York, and Philadelphia, situated in respect to each other? What states get their names from rivers?

Questions on the Notes to Section LXVIII.

1. How does the Mississippi divide the territories of the United States? What are the length, breadth, and content of the entire territory?
2. How many distinct states were there when the country declared itself independent? When is a new settlement entitled to be erected into a separate state?
3. What were the populations of New York, Philadelphia, Baltimore, Boston, and Washington, in 1820? How many towns had then upwards of 10,000 inhabitants?
   What kind of city is New York? In what state is its commerce? What advantages has it for inland trade?
   What kind of city is Philadelphia? What sort of houses has it? What width are the streets?
   Of what is Washington the seat? Where is the District of Columbia? What is its extent?
4. Of what dimensions are the alligators and rattlesnakes? What animals of the old continent do not yet exist in America? What others were not found in it at first, but have been since introduced? What proportion of the animals in the United States yield furs? What minerals are there? Why is coal little used?
5. What is probably the population of the United States at present? In what states are there slaves? In what are there none? Where are there most? What is the amount of the standing army? Of the militia? How long do the latter serve at one time? What pay and clothing have they? Of what does the navy consist?
6. Of what does the senate consist? How are the members elected? For how long? What qualifications must they have?
   Of what does the house of representatives consist? For how many inhabitants is a representative elected? What qualifications must a representative have? How often are representatives elected?
   What oath is taken by the members of both houses? Is there any restriction as to religion? What pay do they receive?
   How are the president and vice-president elected, and for how long? What qualifications must they have? What salaries do they receive?
   After a bill has passed both houses, how does it become a law? If the president disapprove of the bill, how does he act? How may it become a law, notwithstanding his disapproval?
7. How are the people educated in the northern states? In what state are the universities compared with those in the British Isles?
8. How many congregations are there in the United States? What proportions of these belong to the different religious denominations? What is the chief seat of the Roman Catholics?
9. To what extent has the great cavern of Kentucky been traced? Of what does it consist? What is the extent of one of the areas? What is the height of its roof? Has it any pillars to support it? Of what kind are the air and water in the cavern? Where are there remains of walls and fortifications found? What do these seem to prove respecting the former inhabitants of country?

LXIX.—BRITISH POSSESSIONS IN NORTH AMERICA.

1. *Divisions.*—The British colonies in North America, are Canada, New Brunswick, Nova Scotia, and Hudson's Bay; with the islands of Newfoundland, Cape Breton, and Prince Edward or St. John's Island.

2. *Situation, &c.*—Canada lies north of the St. Lawrence and the great lakes, and extends to about the fifty-first or fifty-second parallel. The eastern part is called Lower, and the western Upper Canada.

New Brunswick is situated between the United States, and the river and gulf of St. Lawrence.

Nova Scotia is a peninsula, lying between the Gulf of St. Lawrence, the Atlantic, and the Bay of Fundy.

The territory of Hudson's Bay extends east, south, and west of the gulf of that name; but its limits are not fixed.*

The islands of Newfoundland, Cape Breton, and Prince Edward, lie on the south-eastern side of the Gulf of St. Lawrence.

CANADA.

3. *Face of the Country, &c.*—There are several ridges of mountains, particularly in Lower Canada. The valleys between these are, in general, pleasant and fertile. The part of Upper Canada which lies east and south-east of Lake Huron, is scarcely surpassed in fertility by any district in the world. A large proportion of Canada is covered with immense forests, containing timber of almost every kind, and of the largest dimensions.

4. *Lakes.*—In addition to the four great lakes between Canada and the United States, there are

* 1. The country on the eastern coast of Hudson's Bay, is called East Maine; and that on the west and south-west, New Wales or New South Wales. The large country, between East Maine and the Atlantic, is called Labrador. Sometimes these are all comprehended under the general name of New Britain.

vast numbers of others, some of which are of considerable magnitude.

5. *Rivers.*—Besides the St. Lawrence, there are the Ottawas or Utawas, the Saguenay, and several smaller. The Ottawas forms a great part of the boundary between Upper and Lower Canada.

6. *Towns.*—The principal towns in Lower Canada are QUEBEC, Montreal, and Three Rivers or Trois Rivieres; and in Upper Canada, York and Kingston.*

7. *Climate.*—The heat in summer, and the cold in winter, are both very great, particularly in Lower Canada.†

8. *Produce, Animals, &c.*—The principal productions are tobacco, grain, and timber. Among the animals are the beaver, otter, bear, martin, elk, and wolf, which are valuable for their furs.‡

9. *Population.*—The population in 1814 was 335,000, of whom more than two thirds were descendants of the original French settlers. It is now perhaps half a million.

10. *Government.*—In each of the two great divisions of Canada, there are a legislative council and a house of assembly, modelled after the British parliament. The acts of these bodies must have the assent of the governor; and the king of England has the right of repealing them any time within two years.§

11. *Commerce.*—Canada has a very extensive commerce, chiefly with the British Isles.

12. *Education.*—Education is very little attended to, particularly among the peasantry.

13. *Religion.*—The established religion is that of the Church of England; but most of the people are Roman Catholics.‖

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* 2. The population of Quebec is, by some accounts, 18,000; and, by others, 22,000; of Montreal, about 15,000; and of the others mentioned above, about 2500 each. Quebec is built on a rock about 350 feet high, and is a place of uncommon strength. Montreal is on an island, at the junction of the Ottawas and St. Lawrence.

† 3. The thermometer sometimes rises, in summer, to the height of above 100 degrees; and sinks, in winter, 30 or 40 below zero. There may be said to be only two seasons, summer and winter; the changes being so sudden as to exclude the genial mildness of our spring and autumn.

‡ 4. Curious insects found here are fire-flies; two or three of which, on the hand, will afford light equal to that of a candle.

§ 5. A governor-general is appointed by the British government over the four provinces of Upper Canada, Lower Canada, Nova Scotia, and New Brunswick; and, over each province, there is a lieutenant-governor, who, in the absence of the governor-general, has the supreme power.

‖ 6. In the established church, there are ten or twelve clergymen, who are under the bishop of Quebec. The Roman Catholic clergy are entitled to tithes and other dues from Roman Catholics, but not from others.

14. *Character, &c.*—The descendants of the French settlers are sprightly and polite. The chief peculiarities in manners and customs, are produced by the nature of the climate.*

15. *Curiosities.*—The principal curiosities of Canada are the numerous water-falls, particularly those of Niagara, between lakes Erie and Ontario.†

16. *Historical Sketch.*—Canada, or New France, as it has sometimes been called, was first occupied by the French, who were long engaged in contests with the native Indians. It was conquered by the English, in the reign of Charles I. in 1629, but was restored in 1632. It was again conquered by the English in 1760; and it has since continued to be a British colony.

HUDSON'S BAY, &c.

17. The countries east, west, and south of Hudson's Bay, and extending northward to the arctic seas, are cold and inhospitable in the extreme, and are valuable to Europeans only for the large quantities of furs which they produce. In these regions, the light of the aurora borealis often equals that of the full moon.

NEW BRUNSWICK.

18. The chief towns of New Brunswick are St. John's, Frederick-town, and St. Ann's, on the river St. John. The popu-

* 7. In winter, the inhabitants wear fur caps, fur coats, and fur gloves; also, worsted stockings, both under their boots and over them. In travelling, they wear also a double coat, muff, and tippet, all of fur; and when their way is off the beaten track, they use snow shoes, of a kind of network fixed in a frame, two feet long, and a foot and a half broad. During this period, the inhabitants, being prevented from following their ordinary occupations, spend the greater part of their time in various amusements, particularly dancing; and this is the season of their principal enjoyment. One advantage, arising from the severity of the climate, is the great facility which it presents for the conveyance of provisions, firewood, and other articles, and their consequent cheapness. By the same means also, fish and butcher's meat, by being allowed to become frozen, are preserved fresh and good, without salt, for several months. So intense is the cold, that, notwithstanding all the precautions that are taken, the cheeks, noses, chins, or other exposed parts, are often frost-bitten; and, without proper treatment, are lost by a speedy mortification. On these occasions, the individual is ignorant of his danger, as no pain is felt, the state of the part being indicated only by its white colour. The first person he meets, however, on perceiving this change of colour, applies instantly the only remedy, a handful of snow; and, by continuing to rub the part with this simple application, he generally succeeds in restoring it to its natural state. The exposure of it to heat before the application of the snow would hasten the mortification, and ensure the loss of the part.

† 8. At these astonishing falls, the St. Lawrence, or, as it is called, the Niagara, is 600 yards broad, and is divided by two islands, into three parts; the largest, or western one of which, descends through the height of 142 feet, and the smallest through that of 163 feet. So loud is the noise, that it is heard at the distance of 15 miles; and the water is broken into vapour, which ascends in such quantity, as to form a cloud that is said to be sometimes visible at the distance of 90 miles. When the sun shines, the numberless drops of the spray exhibit a beautiful rainbow; and the whole scene is one of a degree of grandeur and sublimity that cannot be described. The fall of Montmorency is still higher, being 246 feet. This is on the river Montmorency, almost at its junction with the St. Lawrence, eight miles east of Quebec. In its general effect, it is far inferior to those of Niagara, in consequence of the smaller mass of water.

lation is supposed to be 150,000. The principal exports are timber, fish, and furs; and the commerce is very considerable.

NOVA SCOTIA.

19. The climate of Nova Scotia, or Acadia, is warm in summer, but cold in winter. In the latter season, the air is excessively foggy. The chief towns are Halifax, Shelburne, and Annapolis;* the first of which has a population of 15,000 or 20,000; and the second, of 9000 or 10,000.

NEWFOUNDLAND, PRINCE EDWARD'S, AND CAPE BRETON ISLANDS.

20. The population of Newfoundland is 70,000 or 80,000; and the chief towns are St. John's and Placentia. The principal town of Cape Breton Island is Louisburg, and that of Prince Edward's Island is Charlotte's Town. The climate, in these islands, is cold and foggy.† Newfoundland is barren, but is

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* 9. The Bay of Fundy, on which Annapolis is built, is remarkable for its tides, which rise with uncommon rapidity, and reach the height of 60, and sometimes, it is said, of 100, or even 120 feet.

The BERMUDAS ISLANDS may be mentioned in connexion with Nova Scotia, as they are dependent on that colony. They lie in the Atlantic, 700 or 800 miles east of Carolina. Their chief wealth consists in cedar-trees, which are made into large skiffs, and are sold to advantage for coasting along the shores of the United States and the British American colonies. The climate is mild, and air pure and wholesome. The population is above 10,000, nearly half of whom are slaves.

† 10. The fogs are thought to arise from the heat of the water in the sea being greater than that of the atmosphere, the water being principally brought by what is called the *gulf stream* from the Gulf of Mexico. The same cause is supposed to occasion the vast collection of fish about the banks.

Questions on the Notes to Section LXIX.

1. What places are sometimes comprehended under the name of New Britain?
2. What are the populations of Quebec and Montreal? For what is Quebec remarkable?
3. What seasons are there in Canada? What is the range of the thermometer?
4. What is remarkable respecting the fire-flies?
5. What governors are appointed for the British territories in America?
6. What clergy are there in the established church? To what are the Roman Catholic clergy entitled, and from whom?
7. What do the people of Canada wear in winter? What, in particular, when travelling? How do the people spend their time in winter? What benefits result from the severity of the climate? How are parts of the body that are frost-bitten known to be in that state? What is done in such cases? What would be the effect of exposing them to heat before the application of snow?
8. How broad is the St. Lawrence at the falls of Niagara? How is it divided? What are the heights of the falls? At what distance is the noise of the falls heard? At what distance is the cloud of vapour that rises from the falls seen? What is seen when the sun shines? How high is the fall of Montmorency? Where is this? In what respect is it inferior to the falls of Niagara?
9. For what is the Bay of Fundy remarkable? To what heights do the tides rise? Where do the Bermudas Islands lie? In what does their wealth chiefly consist? What is the nature of the climate? What is the population?
10. What is thought to cause the fogs about Newfoundland, Prince Edward's, and Cape Breton Islands? What else is the same cause thought to occasion?

important for the cod-fishery on its banks, which is the most valuable in the world. The Great Bank is 330 miles long and 75 wide, and there are others. Above 100,000 men are annually employed in the fishery.

Exercises on the Map of the British Possessions in America.

How are Quebec and Montreal situated in respect to New York? What are the latitudes and longitudes of Quebec, St. John's in Newfoundland, and Halifax? What are the latitudes of the most northern point of New Brunswick, and the most southern point of Hudson's Bay? How are Cape Breton and Prince Edward's Islands situated in respect to Nova Scotia and New Brunswick? How is Labrador situated in respect to the Gulf of St. Lawrence?

LXX.—MEXICO, OR NEW SPAIN.

1. *Situation.*—Mexico, or New Spain, extends from the Isthmus of Panama to the thirty-eighth degree of north latitude; and from Louisiana to the Pacific Ocean.*

DIVISIONS.	CHIEF TOWNS.†
NORTHERN.	
New Mexico	Santa Fe
California	Loretto
Sonora	Arispe, Sonora
Durango, or New Biscay	Durango
San-Louis Potosi	Loredo
MIDDLE.	
Zacatecas	Zacatecas
Guadalaxara	Guadalaxara
Guanaxuato	Guanaxuato
Valladolid	Valladolid
Mexico	Mexico, Queretaro
Vera Cruz	Vera Cruz
La Puebla	Puebla
SOUTHERN.	
Oaxaca or Guaxaca	Oaxaca or Guaxaca
Yucatan or Merida	Merida, Campechy
Guatimala	Guatimala

* 1. The eastern boundary is uncertain, the United States claiming the country as far as the Rio del Norte; while the Spaniards fixed, as boundary, the river Sabine, about 300 miles west of the Mississippi.

+ 2. The population of Mexico is about 150,000; of Guanaxuato and Puebla, about 70,000 each; of Queretaro, 30,000 or 40,000; and of Oaxaca, 24,000.

Mexico is the most superb city in America; having spacious streets, fine build-

2. *Face of the Country.*—A great proportion of this country is a vast plateau, of different heights, between 6500 and 8500 feet above the level of the sea. From this plateau, many mountains rise to great elevations, and several of them are volcanoes.*

3. *Lakes and Rivers.*—There are several lakes; but there are few rivers and little water, in proportion to the extent of the country; and some of the elevated parts are so parched, as to be destitute of vegetation. The chief rivers are the Rio del Norte, and the two Colorados.

4. *Climate.*—In the elevated parts of the country, the climate is mild and salubrious; but in some low parts, it is hot and unhealthy.

5. *Soil and Produce.*—A large proportion of Mexico is not exceeded in fertility by any country in the world. Among the numerous productions are bananas, maize, wheat, barley, sugar-canes, mahogany, and the best indigo; with cocoa, and various other fruits.†

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ings, and an excellent police. It stands in the middle of a fine valley, 70 leagues in circumference, and was formerly surrounded by the lake Tezcuco, through which it was approached by three causeways, each 20 feet in breadth. The waters of the lake, however, have partly receded of themselves, and have partly been carried off by draining, so that the city is now above two miles from the lake. The floating gardens in this lake, which were first formed by the ancient Mexicans, and many of which are still kept up, are objects of curiosity. They are formed by covering rafts of reeds, rushes, roots, and brushwood, with vegetable mould; and are generally above 300 feet long, and 18 or 20 broad. In several instances, a cottage is built on one of them for an Indian, who has the charge of a groupe. Some of them are driven about by the winds; while others can be removed to new situations by poles, and can be anchored at pleasure. From their deriving abundant moisture from the lake, they are uncommonly fertile; producing for the city, a large supply of vegetables, such as beans, peas, potatoes, artichokes, and cauliflowers. This city is at the great elevation of 7470 feet above the level of the sea.

In 1777, the ancient city of Guatimala was destroyed by one of the most tremendous earthquakes on record. In an instant, the city, with its 8000 families, and all its wealth, was swallowed up; while the place where it stood was overwhelmed with torrents of mud and sulphur, and is now a frightful desert. The new city is built at the distance of four leagues from the site of the old.

* 3. This plateau extends from the eighteenth to the fortieth degree of north latitude. The ascent to it is very difficult, particularly from the Gulf of Mexico; and this greatly interrupts the communication between the interior and the sea-coast. Several of the Mexican mountains are from 13,000 to 18,000 feet high.

† 4. The banana is highly valuable in this country as an article of food. It is so productive, that a tract planted with it will support twenty-five times as many people as the same space would if sown with wheat. It is sometimes prepared like the potato, and sometimes dried and pounded into flour. The maize, or Indian corn, is also very productive, yielding at an average 150 grains for one; and, in some very fertile districts from 300 to 800. The fine red dye, cochineal, which is produced from an insect, is procured in large quantities in Oaxaca. The bays and shores of Honduras and Campechy have been long celebrated for their mahogany and log-wood, a great part of which is cut and carried away by the English, who have a colony in the Bay of Honduras.

6. *Animals.*—The most useful of the European animals have been introduced into Mexico, and thrive well. Before these became numerous, there was a great want of beasts of burden.

7. *Minerals.*—The mines of Mexico are uncommonly valuable; producing annually gold and silver to the amount of four or five millions sterling, and giving employment to 30,000 miners, who are all free and well paid.

8. *Population.*—The population is supposed to be eight or nine millions.*

9. *Commerce.*—The foreign commerce is chiefly carried on by the ports of Vera Cruz on the Gulf of Mexico, and Acapulco on the Pacific. The exports consist of the precious metals, and various other Mexican productions; and the imports are linen, cottons, woollens, paper, brandy, wine, &c.†

10. *State of Learning.*—The scientific establishments of the city of Mexico, are not equalled by any others in the new continent. Such are the botanic garden, the school of mines, the academy of the fine arts, and the university. These institutions produce several men of learning; and Lancasterian schools have lately been established over the country, for the education of the working classes.

11. *Religion.*—As in all the Spanish and Portuguese colonies, the religion is the Roman Catholic. The inquisition was formerly established; but it has been abolished since the recent revolution.‡

12. *Historical Sketch.*—When Mexico was first visited by the Spaniards, early in the sixteenth century, the inhabitants were found to be considerably advanced in civilization. The country was subject to an emperor; and there was a regular government. It was soon reduced under the power of Spain, and has

* 5. The inhabitants here, as in the other Spanish colonies, are of four principal classes; the whites, the Indians, the negroes, and the people of mixed extraction. The whites are either those born in Europe, who consider themselves superior to all others; or those of European extraction, born in Mexico, and called Creoles. The Indians are descended of the ancient Mexicans, and constitute about two fifths of the entire population. The whites amount to about a sixth of the population, and about a fifteenth of these are of European birth. The number of the negroes is very small, not exceeding, it is thought, six thousand.

† 6. The commerce is greatly impeded by the badness of the ports in the Gulf of Mexico, which are choked up with sand; by the storms in winter, and the yellow fever in summer, on the coasts of the Pacific; and by the difficulty of conveying goods between the seacoasts and the interior. The trade on the western side, is chiefly carried on by a galleon of 1200 or 1500 tons, which sails annually across the Pacific, between Manilla and Acapulca, and back again; and each time carries a cargo worth £300,000 or £400,000.

‡ 7. The Roman Catholic religion is established in great splendour in Mexico. The churches in the capital glitter with gold and silver. The cathedral, in particular, surpasses all other churches in the world, in this respect. The balustrade round the great altar, is composed of massive silver. A lamp of the same metal is of so vast a size, that three men go into it when it is to be cleaned; and is enriched with lion's heads, and other ornaments, of pure gold. The statues of the Virgin and the saints are either made of solid silver, or are richly gilded; and they are ornamented with precious stones. The number of the ecclesiastics, of all kinds, is 13,000 or 14,000. The revenue of the archbishop of Mexico, is about £27,000 sterling.

continued in that state, till the recent insurrection of the colonists against the mother country. The result of this revolution has been the formation of Mexico into a republic, independent of Spain. The declaration of independence was made in 1821.

Exercises on the Map of Mexico.

What are the latitudes and longitudes of Mexico and Vera Cruz? What parts of America lie north of Yucatan? What proportion of the Mexican republic is in the torrid zone? What is the shortest distance between Yucatan and East Florida? Whether is Honduras or Campechy nearer the Atlantic?

SOUTH AMERICA.

LXXI.—NEW GRANADA, CARACCAS, & QUITO, OR THE REPUBLIC OF COLOMBIA.

1. *Situation.*—New Granada, Caraccas, and Quito, formerly called Terra Firma, and now constituting the republic of Colombia, occupy all the north-western part of South America.

2. *Divisions.*—The principal divisions are Darien, Cartagena, Santa Marta, Maracaybo, Caraccas Proper or Venezuela, Santa Fe de Bogota, Spanish Guiana, Popayan, and Quito.

3. *Towns.*—The chief towns are Quito, Santa Fe or Santa Fe de Bogota, Caraccas, Popayan, Cuma-

Questions on the Notes to Section LXX.

2. What are the populations of the principal towns of Mexico? How does Mexico rank among the cities of America? How is it situated? How was it formerly approached? What change has since taken place? What objects of curiosity still remain in lake Tezcuco? How are the floating islands formed? What are their dimensions? Do any persons live on them? Are some of them moveable? What do they produce? What is the height of Mexico above the sea?
3. What are the heights of some of the Mexican mountains?
4. Whether will a tract planted with the banana, or another planted with wheat, support more people? How is the banana prepared? What is the produce of maize? What fine dye is produced in Mexico, and in what part of it? What remarkable kinds of wood are produced in Yucatan?
5. What principal classes of inhabitants are there in the Spanish colonies? What are the proportions of these in Mexico?
6. What obstacles are there to commerce in Mexico? What vessel sails annually between Acapulco and Manilla? What is the value of her cargo?
7. What is the appearance of the churches in Mexico? Describe the splendour of the cathedral of Mexico. What number of ecclesiastics are there in the state of Mexico? What is the revenue of the archbishop?

na, Maracaybo, Cartagena, Riobamba, Guayaquil, and Panama.*

4. *Climate.*—In some low parts, particularly on the seacoast, the heat is excessive; but in the elevated districts, the climate is temperate, and sometimes even cold.†

5. *Soil, Produce, &c.*—Much of the country is very fertile; and the vegetable productions are, in general, the same as those of other tropical countries. The produce of the gold mines, which are principally in New Granada, is worth about half a million sterling.

6. *Population.*—The population is thought to be between three and four millions.

7. *Government.*—These countries have formed a republic since 1819; and the constitution and government resemble those of the United States of North America.

Exercises on the Map of Colombia.

What are the latitudes and longitudes of Quito, Santa Fe, and Cartagena? How is Panama situated in respect to Quito and Cumana? In what zone is this republic?

* 1. The population of Quito is 70,000; of Santa Fe and Caraccas, 30,000 or 40,000 each; and that of the other towns above mentioned, from 25,000 to 10,000.

Quito is at the extraordinary elevation of more than 9000 feet above the level of the sea. Its situation was formerly delightful; and it enjoyed a perpetual spring, and an almost equable temperature. In 1797, however, there was a tremendous earthquake, which destroyed, in an instant, 40,000 people in the province of Quito; and, since that time, earthquakes have been almost continual; the atmosphere has become lowering and cloudy; and, instead of the former mild temperature, cold has almost uniformly prevailed.

The city of Santa Fe is pleasantly situated on a plateau, at the height of 8200 feet. This plateau has been supposed to have been the bottom of a lake, drained at some remote period, by the opening of a passage for the water, through the surrounding rocks, by an earthquake. The water of the river of Bogota, which is of considerable magnitude, rushes through this opening, and forms the water-fall of Tequendama, one of the most splendid in the world, descending at two bounds through the space of 630 feet. The cloud of vapour which is thus raised into the atmosphere, is so great, that, on being precipitated by the cold air, it greatly contributes to the extraordinary fertility of the surrounding parts of the plain of Bogota. The natural bridges of Icononzo are also extremely curious. These are two enormous arches extending over a torrent, with precipitous banks; and one of them is elevated more than 300 feet above the surface of the water.

† 2. There are, in general, only two seasons; the rainy, from November till April, and the dry. In the hot season, the water of the river Magdalena acquires the temperature of a hot bath; and the stones are frequently so warm, that they cannot be touched with the hand. The hot parts are extremely unhealthy, yellow fever carrying off great numbers. This is particularly the case at Cartagena and Guayaquil.

Questions on the Notes to Section LXXI.

1. What are the populations of Quito, Santa Fe, and Caraccas? How high is Quito above the sea? What was formerly the nature of its climate? When did it change? What is its present state? What is the height of Santa Fe? What is thought respecting the plateau on which it stands? What water-fall is formed by the river of Bogota? How high is this fall? What contributes to the fertility of the surrounding district? Describe the natural bridges of Icononzo.
2. What seasons are there? Give instances of the greatness of the heat during the hot season. What fatal distemper is prevalent? What places suffer greatly from this cause?

LXXII.—PERU.

1. *Situation, &c.*—Peru extends along the coast of the Pacific, from Quito to Chilé. The part called Lower Peru lies between the Andes and the Ocean, and consists chiefly of sandy plains and deserts. Upper Peru lies principally between two great parallel chains of the Andes, and contains many fertile and pleasant valleys.

2. *Towns and Divisions.*—The principal towns are Lima, Cuzco, Truxillo, Tarma, Arequipa, Guanca-Velica, and Guamanga. Peru is divided into seven intendencies, of the same names as the towns above mentioned, which are their capitals. To these towns may be added Callao, the port of Lima; also, Caxamarca, Chuquisaca or La Plata, Potosi, and La Paz.*

3. *Climate.*—The climate of Lower Peru is cool, in consequence of fogs;† but rain and thunder are almost unknown. The habitable parts of Upper Peru enjoy a temperate, healthy climate.

4. *Produce.*—Among the vegetable productions are grain, sugar, palm-trees, and many other articles. The mines are uncommonly valuable, particularly those of gold, silver, copper, and quicksilver.‡

5. *Population.*—The population is supposed to be three or four millions, nearly half of whom are Indians.

6. *Historical Sketch.*—Peru was first invaded by the Spaniards under Pizarro, in 1532. At this time, the inhabitants were considerably advanced in civilization, and were governed by sovereigns called *incas*. The Spaniards, by perfidious and cruel means, made themselves masters of the country. From

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* 1. The population of Lima is stated to be 54,000; and that of Cuzco, the ancient capital of the Incas, 32,000. The silver mines of Potosi were opened in 1545; and the population of the town increased so rapidly, that it amounted to 160,000 in 1611. It has since decreased to about 30,000. The district of Potosi, and some others formerly connected with Peru, were annexed to Buenos Ayres, in 1778.

† 2. This coolness is also produced, in part, by a cold current which flows along the coast, from the Strait of Magallan. The temperature of the water, in this current, is nine degrees below that of the rest of the ocean. In consequence of the want of rain, the only fertile parts of Lower Peru are those which are watered by rivers or springs; and several of these are delightful.

‡ 3. About the end of the last century, there were wrought in Peru, seventy gold and seven hundred and eighty-four silver mines; the annual produce of which was worth £700,000 sterling.

that period, it continued under the power of Spain till 1819, when the colonists revolted, and formed themselves into an independent republic.

Exercises on the Map of Peru.

What are the latitudes and longitudes of Lima, Cuzco, and Potosi? How far is Guanca-Velica from the Pacific? What towns of South America have nearly the same longitude as Truxillo?

LXXIII.—CHILE.

1. *Situation, &c.*—Chilé or Chili extends from the twenty-fourth to the forty-fifth degree of south latitude. The most important part of it, called Chilé Proper, lies between the Andes and the Pacific; but it also comprehends the provinces of Cuyo and Tucuman.

2. *Islands.*—Chiloé and Juan Fernandez.*

3. *Face of the Country.*—Several summits of the Andes of Chilé are said to be twenty thousand feet high.† In the low parts of the country, there are many delightful plains and valleys, adorned with wood, and watered with numerous rivers.

4. *Towns.*—The chief towns are SANTIAGO, Conception or Penço, Coquimbo, Valparaiso, Copiapo, Quillota, Mendoza, Valdivia, and Tucuman.‡

5. *Climate and Soil.*—The climate is remarkably mild and salubrious; and the soil is, in many places, very fertile. There is

Questions on the Notes to Section LXXII.

1. What are the populations of Lima and Cuzco? When were the mines of Potosi opened? What was the population of Potosi in 1611? What is it now?
2. What partly occasions the coolness of the climate of Lower Peru? What difference is there in the temperature of different parts of the ocean near the coast of this country?
3. What number of gold and silver mines were wrought in Peru about the end of the last century? What was the value of their annual produce?

* 1. On the island of Juan Fernandez, previously uninhabited, Alexander Selkirk, a Scottish sailor, lived in a solitary state, from 1705 till 1709; having been cruelly put ashore, and abandoned by the captain of the vessel in which he was sailing. This event is said to have furnished Defoe with the groundwork of his celebrated romance of Robinson Crusoe. Since that time, the Spaniards made a settlement in the island; but they are said to have lately deserted it.—Chiloé is the largest of a groupe of forty-seven islands.

† 2. One of the highest of these summits is Descabezado, in latitude 35°. The summit of this is very remarkable, presenting a plain of more than six miles square, and having in the middle a very deep lake, supposed to have been the crater of a volcano.

‡ 3. The population of Santiago is stated at upwards of 50,000.

the agreeable vicissitude of spring, summer, autumn, and winter; but their seasons and ours are at opposite times of the year.

6. *Minerals.*—Like the other countries adjoining the Andes, Chilé is rich in mineral wealth, particularly in gold, silver, and copper. The produce of the gold mines has sometimes exceeded a million sterling in a single year.*

7. *Historical Sketch.*—Chilé was invaded in 1534 by the Spaniards, who easily formed settlements in several parts of the country. They were bravely opposed, however, by the Araucanians,† who, after perpetual wars during the long period of 109 years, completely succeeded in establishing the independence of their country in 1643. Since that time, there have been other wars; and, on all occasions, the brave exertions of this people have been rewarded by their success in maintaining the liberty of their country. The Spanish colonists have lately renounced their allegiance to the mother country, and have formed themselves into an independent republic.

Exercises on the Map of Chilé.

What are the latitudes and longitudes of Santiago, Valdivia, and Juan Fernandez? How far is Juan Fernandez from Valparaiso? What towns of South America have nearly the same longitude as Coquimbo? In what zone is Chilé?

LXXIV.—BUENOS AYRES.

1. *Situation.*—Buenos Ayres is a large country, lying between Brazil, Peru, Chilé, Patagonia, and the Atlantic.

* 4. It is generally remarked, that, where minerals abound, the soil is unproductive; but Chilé forms an exception, as its mines are extremely valuable, while it produces luxuriant crops and pastures, fine fruits, and forest trees of the largest kind. It is also the only country in the new continent, in which the culture of the vine has completely succeeded.

† 5. Araucania, one of the finest portions of Chilé, lies between the parallels of 36° 44′ and 39° 50′ south; and extends from the Pacific, 420 miles into the interior. The inhabitants are a highly interesting race. They are brave and magnanimous; and are distinguished, in an extraordinary degree, for their love of liberty and independence. In their wars with the Spaniards, in which even their females took a part, they displayed a degree of perseverance, and a series of heroic deeds, that are perhaps not surpassed in the authentic history of any nation. Besides the Araucanians, the Cuenches and Huilliches, two adjoining tribes, have also maintained their independence, but have not acquired an equal degree of distinction.

Questions on the Notes to Section LXXIII.

1. Who lived in a solitary state on the island of Juan Fernandez? When did this take place? What work is said to have been produced in consequence of this circumstance? How many islands are in the groupe along with Chiloé?
2. What is remarkable respecting the summit of Descabezado?
3. What is the population of Santiago?
4. In what respects does Chilé differ from other mineral countries, and from other countries of America?
5. Where is Araucania situated? What is the character of the inhabitants? How did they conduct themselves in their wars with the Spaniards?

2. *Rivers.*—The principal rivers are the Rio de la Plata, and its branches.

3. *Towns.*—The chief towns are BUENOS AYRES, Monte Video, Maldonado, Assumption, Santa Fe, and Corrientes.*

4. *Climate and Soil.*—The climate of this country is, in general, mild and healthful; and the soil of a large proportion of it, is exceedingly fertile, but is badly cultivated.

5. *Produce.*—Under proper cultivation, this country would yield almost every production of the hot and temperate regions of the earth. A production peculiar to it is the Paraguay tea, which is in universal use over a great part of South America.

6. *Animals.*—Oxen and dogs, which were introduced from Europe, have become wild, and are extremely numerous. The most remarkable birds are the condor† and ostrich. There is also a species of tiger called the *yagouar;* and there are vast numbers of other animals.

7. *Commerce.*—The principal exports are hides, provisions, furs, and wool; the returns for which are European manufactures, sugar, brandy, slaves, and many other articles.

8. *Historical Sketch.*—The Spaniards began to make settlements in this country in 1635, and gradually succeeded against the vigorous opposition of the natives. In 1816, the colonists threw off their allegiance to Spain; and since that time, the country has continued to be an independent republic.

Exercises on the Map of Buenos Ayres.

What are the latitudes and longitudes of Buenos Ayres and Maldonado? What are the principal rivers that compose the Rio de la Plata? How far is Monte Video from Buenos Ayres? What lies between them?

LXXV.—BRAZIL.

1. *Situation, &c.*—The empire of Brazil is a vast country, extending from the equator to about the

* 1. The population of Buenos Ayres is stated, at different amounts, between 25,000 and 70,000.

† 2. The condor is three or four feet in length; and the distance between the tips of its wings, when extended, is ten or twelve feet. Its usual residence, except when it descends to the plains for its prey, is on the sides of the Andes, a little below the region of perpetual snow. These birds are remarkable for their great strength, and for the extraordinary height to which they soar; and two of them will kill and devour a heifer.

Questions on the Notes to Section LXXIV.

1. At what amounts is the population of Buenos Ayres stated?
2. Of what length is the condor? What is the distance between the tips of its wings when extended? What is its usual residence? For what are condors remarkable?

thirty-third parallel of south latitude, and from the Atlantic two thousand miles into the interior.*

2. *Divisions.*—The principal divisions are Para, Maranham, Pernambuco, Bahia, Rio Janeiro, San Paulo, Rio Grande, Minas Geraes (or the General Mines), Goias, and Matto Grosso.

3. *Towns.*—The chief towns are RIO JANEIRO, San Salvador or Bahia, Pernambuco, Cuyaba, Villa Rica, Para, St. Paul, and Maranham or Maranhao, called also San Luiz.†

4. *Rivers.*—The principal rivers are the San Francisco, the Araguay, the Parnaiba, and the Xingu.

5. *Climate.*—The climate, though warm, is not so hot as in most other places in the same latitudes; and the country is in general healthy.

6. *Soil, &c.*—In a great proportion of the country, the soil is uncommonly fertile, yielding many productions of the most valuable kind; while gold and diamonds are found in the greatest abundance.‡

7. *Population.*—The population is supposed to be nearly four millions; about a million of whom are of European origin, while the rest are negroes, Indians, and persons of mixed extraction.

8. *Historical Sketch.*—The Portuguese began to make settlements in Brazil about the year 1500; but, as no precious minerals were found at first, and as the natives made fierce opposition, the country was in a great degree neglected, and the only colo-

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* 1. The boundaries of Brazil are not accurately settled, and have been the source of frequent disputes between Spain and Portugal; the latter having been charged with making frequent encroachments, and, in particular, with having appropriated to itself a great part of what was formerly called Amazonia, or the country watered by the Amazon. The interior countries, especially Amazonia, have scarcely any inhabitants, except Indians; the Europeans being, in general, confined to the coast.

† 2. The population of Rio Janeiro is stated at 110,000; that of Bahia, at different amounts, from 70,000 to 110,000; Pernambuco and Olinda (which almost form one city), at 65,000; and San Paulo and Maranham, about 30,000 each.

Rio Janeiro has one of the finest harbours in the world, and the town contains many good houses. Bahia was formerly the capital of Brazil; and contains some fine buildings, particularly the church of the Jesuits, which is entirely of European marble. This city is built on the excellent harbour called the Bay of All Saints; and hence it gets its name, the Portuguese word *bahia* signifying *bay*.

‡ 3. Some of the principal productions are tobacco, wood, sugar, hides, and excellent cotton. There are forests of vast extent, producing timber well calculated for ship-building and numerous other purposes, as also various dye-woods. So great is the number of cattle, that they are often slaughtered for their hides, while their carcasses are left to be devoured by birds and wild beasts. The gold and diamond mines are found in many parts of the interior, particularly near Rio Janeiro. These are extremely valuable; and are computed to have yielded annually, for sixty years after their discovery, produce worth more than a million and a half sterling.

nists, for some time, were banished criminals. By its natural fertility, however, and by the exertions of these settlers, it began to prosper, and soon attracted the notice of the French and Dutch, who successively made settlements on the coast. The former were quickly overcome; and the latter, though they had nearly made themselves masters of the entire country, were finally expelled in 1654, after various struggles. In consequence of this, a war, which continued seven years, arose between the Portuguese and the Dutch, the result of which was the confirmation of Brazil to the former, on their paying the Dutch eight millions of florins, or about £750,000 sterling. After this, there were sometimes internal commotions, and sometimes disputes with the Spaniards about the mutual boundaries; but nothing of much interest occurred till the removal of the Portuguese court to Rio Janeiro, on the invasion of Portugal by Bonaparte, where it remained from 1808 till 1821. The most important event, however, in the late history of Brazil, is its erection, in 1825, into a separate and independent empire, under the son of the king of Portugal.

Exercises on the Map of Brazil.

How is Brazil situated in South America? What are its most eastern towns? What are the distances from Bahia to Rio Janeiro and Pernambuco? What are the latitudes and longitudes of these cities? What towns of America lie west of Maranham?

LXXVI.—GUIANA.

1. *Divisions, &c.*—Besides Spanish Guiana already mentioned, there are British Guiana, Dutch Guiana, and French Guiana, which all lie along the north-east coast of South America.

2. British Guiana consists of the settlements of Essequibo, Demerara, and Berbice, which formerly belonged to the Dutch, but were taken from them in 1796. The population consists of about 90,000, nearly a tenth of whom are whites, and the rest negroes.

3. Dutch Guiana now consists of only the fine colony of Surinam, the only town in which is Paramaribo. The popula-

Questions on the Notes to Section LXXV.

1. What inhabitants are in the interior of Brazil? Where do the Europeans reside?
2. What are the populations of the principal towns of Brazil? Which of these towns are remarkable for their fine harbours?
3. What are some of the principal productions of Brazil? Where are the gold and diamond mines? What was the annual value of their produce, for a considerable period after their discovery?

tion, and its proportions, are nearly the same as in British Guiana. This country also, as well as that, is highly cultivated, and remarkably fertile; and, in both, every thing bears the marks of Dutch industry, neatness, and cleanliness.

4. The population of FRENCH GUIANA is supposed to be twenty thousand, about two thousand of whom are whites, and the rest negroes; and, besides these, there are Indians. The principal town is Cayenne. This country is naturally fertile, but is badly cultivated.

5. *Climate.*—The climate is milder than that of perhaps any other continental region between the tropics. Much of the country, however, from its lowness, is moist, and subject to inundations; and hence intermittent fevers are very frequent.

Exercises on the Map of Guiana.

What are the relative positions of the different divisions of Guiana? What are the latitudes and longitudes of Cayenne and Demerara? What towns of South America have nearly the same longitude as Essequibo? What is the general direction of the coast of Guiana?

LXXVII.—PATAGONIA, &c.

1. A LARGE portion of the southern part of South America, is called Patagonia. This country is little known; but it is, in general, cold and inhospitable. The inhabitants are savages, who are represented, by the concurring testimony of most of the voyagers that have visited the country, as being taller than any people in the world; their mean stature being between six and seven feet.

2. South of this, and separated from it by the Strait of Magallan,* are the island of Terra del Fuego, and others. These contain volcanoes, and are inhabited by tribes of miserable savages. The Falkland Islands lie east of the Strait of Magallan.

LXXVIII.—WEST INDIES.†

1. *Situation.*—The West Indian Islands, sometimes called the Columbian Archipelago, extend, in form

* The Strait of Magallan or Magellan is about 450 miles in length, and from two to fifteen leagues in breadth. Since the discovery of the passage round Cape Horn, vessels generally avoid this strait; as the passage through it is attended with danger, from its currents, sinuosities, and other causes.

† 1. When Columbus discovered these islands, it was thought that they were some of the islands of India, arrived at by a westward course. After the mistake was discovered, they were called the *West* Indies, for the sake of distinction; and the natives here, and on the American continent, were improperly called Indians.

of an arch, between East Florida and the mouths of the Orinoco.*

2. *Divisions.*—This groupe consists of Cuba, St Domingo, Jamaica, Porto Rico, the Bahama or Lucaya Islands, and the Caribbee Islands.

3. *Climate.*—The summer is excessively hot; and the heat would be almost insupportable, if it were not moderated by the sea-breeze, which blows during the greater part of the day. The climate is in many places very unhealthy, particularly to Europeans.†

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* 2. These islands lie between 10° and 28° of north latitude, and between 60° and 85° of west longitude. Cuba, St. Domingo, Jamaica, and Porto Rico, are sometimes called the *Great Antilles*; and the others, the *Less*. The Caribbean Sea lies between Jamaica, St. Domingo, Porto Rico, and South America. This sea is sometimes subject to hurricanes; but, in fine weather, its water is so transparent, that fish and coral can be seen at the depth of 300 feet. The current which crosses the Atlantic Ocean from the Canary Islands, continues its motion through this sea; and, being interrupted in its course by Mexico, it changes its direction, and passes through the Gulf or Strait of Florida;—a circumstance which causes it, during the rest of its course east of the United States, to be called the *Gulf Stream*. This latter part of it is about 75 miles from the coast of Georgia and the Carolinas; but its distance from the shore increases as it proceeds northward; and, after passing Newfoundland, it turns eastward towards Europe: it then acquires such a breadth, however, that its effect is little perceived. Its general width, near the United States, is about 50 or 60 miles; but it enlarges towards the north. Its rate of motion is about three miles an hour; and it is easily distinguished, by the quantity of sea-weed which it carries along with it, by its fine blue colour, and by its not sparkling at night. It has been found to be from 6° to 11° warmer than the sea through which it runs; and, in the northern part of its course, it is constantly covered with fogs. Its breadth and situation are changed, in some degree, by the winds.

† 3. The spring begins about May; and there are then copious rains, which promote vegetation, and clothe the country with verdure. The summer follows, when there is a cloudless sky and intense heat. The moon shines with such brightness during the night, that the smallest print can easily be read. The heat increases till October, when the great rains commence, and fall in tremendous torrents, which inundate all the lower parts of the country. The atmosphere is loaded with moisture; metals quickly contract rust; and it has been expressively said, that the inhabitants live in a vapour bath.

The following animated description of a West-Indian hurricane is from Malte Brun:

"A hurricane is generally preceded by an awful stillness of the elements, the air becomes close and heavy, the sun is red, and the stars at night seem unusually large. Frequent changes take place in the thermometer, which rises sometimes from eighty to ninety degrees. Darkness extends over the earth: the higher regions gleam with lightning. The impending storm is first observed on the sea: foaming mountains rise suddenly from its clear and motionless surface. The wind rages with unrestrained fury: its noise may be compared to the distant thunder. The rain descends in torrents; shrubs and lofty trees are borne down by the mountain-stream; the rivers overflow their banks, and submerge the plains. Terror and consternation seem to pervade the whole of animated nature: land birds are driven into the ocean; and those whose element is the sea, seek for refuge in the woods. The frighted beasts of the field herd together, or roam in vain for a place of shelter. It is not a contest of two opposite winds, or a roaring ocean that shakes the earth: all the elements are thrown into confusion, the equilibrium of the atmosphere seems as if it were destroyed, and nature appears to hasten to her ancient chaos. Scenes of desolation have been disclosed in these islands by the morning sun,—uprooted trees, branches shivered from their trunks, the ruins of houses, have been strewed over the land. The planter is sometimes unable to distinguish the place of his former possessions. Fertile valleys may be changed in a few hours into dreary wastes, covered with the carcasses of domestic animals and the fowls of heaven."

4. *Produce.*—These islands abound in trees, and other vegetable productions, of a great variety of kinds. The principal of these, and that to which they owe their chief importance, is the sugar-cane. Other valuable productions are coffee and cotton.

BRITISH WEST-INDIA ISLANDS.

5. The principal islands which belong to Britain are Jamaica, the Bahamas, Anguilla, St. Christopher's, Nevis, Antigua, Dominica, St. Lucia, Barbadoes, St. Vincent, Grenada, Tobago, and Trinidad.

6. JAMAICA is 150 miles long and 60 broad. The chief towns are KINGSTON, St. Jago de la Vega or Spanish Town, and Port Royal.* This island is of great value, producing three fourths of the coffee, and more than half of the sugar, which Britain derives from her colonies. It also furnishes excellent mahogany. The coasts are unhealthy, from their lowness and the heat; but in the higher grounds in the interior, the climate is mild and salubrious. The highest mountain has an elevation of nearly 8000 feet. In 1815, the population was estimated at 360,000, seven eights of whom were negro slaves.

7. The Bahama Islands are about five hundred in number; but many of them are merely barren rocks. The twelve principal ones contain 13,000 inhabitants. Guanahani, called also St. Salvador and Cat Island, will ever be remarkable as the first part of the new world discovered by Columbus.

8. The population of Barbadoes is about 90,000, three fourths of whom are slaves.

9. Trinidad, or Trinity Island, was ceded by Spain to England in 1801. It contains a remarkable lake, which is three miles in extent, and is filled with bituminous or pitchy matter. This matter, when melted with tallow, is used for naval purposes.

SPANISH WEST-INDIA ISLANDS.

10. The Spanish West-India Islands are Cuba and Porto Rico.

11. CUBA is 700 miles long and 70 broad. Its population is supposed to be 600,000 or 700,000, about two thirds of whom are slaves. HAVANNAH, the capital, contains about 50,000 inhabitants. Other considerable towns are Puerto del Principe and

* 4. Kingston has a population of about 30,000. St. Jago, which was the capital when the island belonged to Spain, is still the seat of government. Port Royal was once the capital, and was remarkably wealthy and flourishing, its fine harbour attracting numerous settlers. It has been reduced, however, to an inconsiderable size by an earthquake and other calamities. The legislature of the island consists of two houses, and is modelled after the British parliament. Columbus discovered this island in 1494, and it was taken from Spain by the English in 1655.

St. Yago de Cuba. The island is healthy and fertile, and its tobacco is considered the finest in the world.

12. Porto Rico is a fine fertile island, 120 miles long and 40 broad, and contains a population of upwards of 30,000.

FRENCH WEST-INDIA ISLANDS.

13. The principal islands belonging to France are Guadaloupe, Mariegalante, and Martinico or Martinique.

14. Guadaloupe consists of two islands, separated by a narrow channel. The population is about 120,000, and the capital is Basse-Terre.

15. The population of Martinico is nearly 100,000, and the island is rich and valuable.

DANISH WEST-INDIA ISLANDS.

16. To Denmark belong Santa Cruz and St. Thomas; which, though small, are fertile and valuable.

ST. DOMINGO.

17. The large island of St. Domingo, called also Hispaniola and Hayti, which is about 400 miles long and 140 broad, formerly belonged partly to Spain and partly to France. The negro slaves, however, during the wars that followed the French revolution, revolted against the whites; and, after numerous and dreadful atrocities on both sides, the latter were overcome and expelled. Since that time, the island has remained in the power of the negroes, who have divided it into two states. It is now enjoying the advantages of peace and regular government; and the negro sovereigns are forming establishments for affording their subjects instruction both in the elementary and higher branches of education, and are, in general, pursuing a liberal and enlightened policy. Most of the island is fertile, in the highest degree; but the low grounds are very unhealthy. The chief towns are Port-au-Prince, Cape François, and Santiago or San Yago.

Exercises on the Map of the West Indies.

What are the latitudes and longitudes of Kingston, Havannah, Port-au-Prince, Barbadoes, and Guanahani? In what zone are most of the West India Islands situated? Where does the tropic of Cancer pass through them? How are Cuba, Jamaica, and St. Domingo situated in respect to each other? Through which of the Great Antilles does the parallel of Mexico pass? What towns in the United States lie north of Cuba? What north of Jamaica? Of St. Domingo? Which of the West India Islands lie north of the Isthmus of Panama? Which of them lie next the Gulf of Florida? How are Trinidad and Margaritta situated? Which are the principal of the Caribbees?

LXXIX.—AMERICAN INDIANS.*

1. The American Indians are, in general, of nearly the same stature as Europeans, and are well made and robust. Over most of the continent, they are of a copper colour; and, except in the cold regions of the north, there is a remarkable similarity in their complexion and general appearance. They are almost destitute of mental cultivation; having no ideas of any thing beyond their present wants, or what is just presented to their senses. They never think of providing for the future; and they are, in consequence, subjected, from year to year, to distresses and privations which a due foresight, and a moderate degree of labour, would be sufficient to obviate. They have no regular government: but, when they think it necessary to make war, they submit themselves to some individual of their own number, who is distinguished for his bodily strength and deeds of valour; but, as soon as the war is terminated, the chief loses his authority, and all the members of the tribe recover their original independence. They have never advanced so far in civilization, as to tame any of the inferior animals, and employ them as auxiliaries in labour. When first visited, they were ignorant of the use of iron; and hence, an Indian, with his stone hatchet, was occupied two months in cutting down a tree, and a year in hollowing it out into a canoe. Unaided also by the inferior animals, and without iron tools, they practised little agriculture, and lived chiefly on the spontaneous productions of the earth, and on what they caught in hunting and fishing.

Questions on the Notes to Section LXXVIII.

1. Why were the West Indian Islands so called? Why have the native inhabitants of America been called Indians?
2. Between what latitudes and longitudes are these islands situated? What islands are called the Great Antilles, and what the Less? Where is the Caribbean Sea situated? What is remarkable in respect to the water of this sea? Describe the course of the Gulf Stream. How far is it from the Carolinas? How broad is it near the United States? What change does it undergo towards the north? At what rate does it flow? How is it distinguished from the rest of the ocean? How much is it warmer than the sea through which it runs? Where is it covered with fogs? What effects do the winds produce on it?
3. When does the spring commence? What is the effect of the rains at that time? Describe the summer. When do the great rains commence? What is the effect of these?

   Give the substance of Malte Brun's description of a West Indian hurricane.
4. What is the population of Kingston? What was the former condition of Port Royal? What has caused its decline? Of what does the legislature of Jamaica consist? Who discovered this island? When did the English obtain possession of it?

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* 1. The foregoing sketches of America, so far as they respect the inhabitants, have been chiefly confined to those of European origin. It may now be proper to give a few particulars respecting the aboriginal inhabitants, who, when the new world was discovered, were all, with the exception of the Mexicans and Peruvians, in a savage state.

2. Their wars, which are commonly undertaken to revenge an injury, generally the death of some of their own tribe, are of the most dreadful description. Before the expedition sets out, the war-kettle is put on; and the shell is sent round, to indicate their intention to eat the flesh and drink the blood of their enemies. When they arrive at the scene of action, they employ stratagem, and endeavour to surprise the enemy. If they get possession of a village while the young men are engaged in the chase, they set fire to the huts, and drive the women, children, and old men, into the flames, or massacre them indiscriminately by other modes. When they are obliged, however, to come to close fight with their armed foes, the conflict is dreadful. The combatants on each side discharge, successively, volleys of arrows or bullets, and then shelter themselves behind trees. The combat is continued in this manner, till one party is incapable of farther resistance.

3. The prisoners are then secured, and are borne to the residence of the victors, where some of them are taken into families, to supply the places of those who have fallen in the war; and are ever after treated in the same manner as the other members of the tribe into which they are adopted. For the others, a fate of the most dreadful kind is reserved. They are put to death, after undergoing a series of cruelties, not surpassed by any ever devised by the depraved ingenuity of man. They are tied to stakes, beaten with clubs, torn with pincers, and burned with hot irons. The nails are pulled out, one by one, from their fingers; gashes are cut in their flesh, and instantly seared to prevent the effusion of blood, and thus to protract their torments. Their toes are pounded between stones, the bare nerves and tendons are pulled and twisted, their eyes are put out, and their teeth torn out of their heads. After these tortures and many others, the victim is stuck all over with matches, which are set on fire, and burn slowly. This cruel treatment is sometimes continued for several days, till at length one of the chiefs releases the sufferer from his torments, by despatching him with a dagger or club. In the infliction of these torments, even the women bear a part, and do not yield to the men in those deeds of cruelty.

4. The cool and determined fortitude of the prisoners, on these occasions, is such as can scarcely be conceived. A groan or a complaint, escaping from their lips, would be considered disgraceful to their tribe, and is carefully avoided. The cruelty on the one side, and the endurance* on the other, seem to arise

* 2. Another instance of the extraordinary endurance of pain, of which these people are capable, is furnished by the mode in which a chief is appointed, particularly in some of the southern regions. He is obliged to undergo rigorous fasting, and severe flagellation. He is suspended in his hammock; and, while multitudes of ants, whose bites occasion severe pain, are thrown upon him, a fire of stinking

from example, and from the principles instilled into their minds from infancy; as, on many other occasions, they show the same feelings of tenderness and kindness, that ornament civilized society.

5. To conclude the account of these dreadful scenes, it may be stated, that the mangled remains of the prisoners form a banquet for their foes. It is only the captives taken in war, however, that furnish such repasts; as every individual would shudder at the idea of devouring any other human flesh. It may also be remarked, that many of these dreadful practices are now, in a great degree, discontinued.

6. As among other savages, the Indian women are the slaves, and not the companions, of the men; being obliged to perform all the offices of labour and fatigue, and to undergo severe bodily chastisement if they displease their cruel masters. Among some of the tribes, if twins be born, one of them is exposed, and allowed to perish; and, if a woman die while nursing, the child is buried with her in the same grave. The children are never taught to obey or reverence their parents; and, as they advance towards maturity, they are regarded by the parents with increasing indifference. When the parents become old and helpless, they are put to death by their children; the old man placing himself voluntarily in the grave which he has ordered to be dug; and the son, or nearest relation, pulling the thong, or striking the blow which is to terminate his life.

With respect to the mode in which America was first peopled, there have been various opinions. The geographical discoveries of modern times, however, show the proximity of that continent to Asia on one side, and to Greenland on another; and hence there is good reason to suppose, that it received settlers from both these parts of the earth, at remote, and probably successive times.

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herbs is kindled below him, which scorches him with heat, and almost suffocates him with smoke. During all this trial, under which many expire, a look, a motion, or a sound, expressive of uneasiness, would exclude him for ever from the honour to which he aspires; but, if it be passed successfully, he is ever after regarded as a person of proved valour, and one who is fit to lead his fellows against their foes.

OCEANICA.*

LXXX.—GENERAL VIEW.

1. *Divisions.*—The following are the principal divisions of this part of the earth:

NORTH-WEST OCEANICA.

The Sunda Islands, consisting of Borneo, Sumatra, Java, and others; the Philippine Islands, comprehending Luzon, Mindanao, &c.; and the Moluccas or Spice Islands, consisting of Celebes, Gilolo, Ceram, and others.

SOUTH-WEST OCEANICA.

New Holland, Van Dieman's Island, New Guinea or Papua, New Zealand, New England, New Ireland, and Solomon's Islands.

EASTERN OCEANICA, OR POLYNESIA.

The Ladrone or Marianne Islands, Pelew Islands, Carolinas, Sandwich Islands, New Hebrides, Friendly Islands, Society Islands, Marquesas, and many others.†

2. *Straits.*—The principal straits are the Strait of Sunda, between Sumatra and Java; the Strait of Macassar, between Borneo and Celebes; Torres or Endeavour Strait, north, and Bass's Strait, south of New Holland; and Cook's Strait, between the two islands of New Zealand.

LXXXI.—NORTH-WEST OCEANICA.

1. Borneo.—Borneo, the largest island in the world, except New Holland, is 750 miles long, and above 600 broad. From the unhealthiness of its climate, it is little known. It produces

* 1. This part of the world, though in many respects interesting, is of little importance compared with the other great divisions already described. Hence, the account of it here given will be confined to the principal parts, and will be short.

† 2. Such as the Mulgrave Islands, the Feejee Islands, Navigator's Islands, Low Islands, Easter Island, Christmas Island, &c.

gold and diamonds, in large quantities. Among its vegetable productions are camphor, pepper, ginger, and cotton. Among the animals are monkeys, called *pongos*, as large as men, and also the ourang outang. The country is governed by several despotic sovereigns, and the prevailing religion is Mohammedanism. Two of the principal towns are Benjarmasson and Borneo. The Dutch have a settlement near the former.

2. SUMATRA.—The large island of Sumatra is above 1000 miles long, and from 50 to 240 broad. A chain of mountains runs through its entire length; but the coasts are low and marshy. Some of the mountains are volcanoes; and one mountain, called Mount Ophir, is nearly 14,000 feet high. Three fourths of the country are covered with an impenetrable forest, containing trees and shrubs of numerous kinds. The island is divided into several states, one of the principal of which is the kingdom of Acheen or Atcheen. The chief towns are Acheen, Nattal, Palembang, and Bencoolen. The English and Dutch have settlements on the coast.

3. JAVA.—Java is 700 miles long, and its breadth varies from 80 to 140 miles. The northern shore is very unhealthy, and often fatal to Europeans; but the elevated parts in the interior, are pleasant and salubrious. The fertility of the unhealthy districts, is extremely great.* The eastern part of the northern coast, is the chief seat of the Dutch power in India. The rest of the island is governed by native princes, who, as well as their subjects, are of the Mohammedan religion. The population of the island is supposed to exceed two millions. Batavia, the Dutch capital, contained in 1799 above 170,000 inhabitants; and Samarang contains 30,000. Other towns are Bantam and Sheribon. The chief exports are sugar, coffee, and pepper.

4. PHILIPPINE ISLANDS.—The Philippine Islands belong partly to Spain, and partly to native sovereigns. They have mountains of great height, and many volcanoes. Earthquakes are frequent, and there are often great rains and hurricanes. The islands, however, are scarcely equalled in fertility. The fields are always verdant, the trees constantly in leaf, and fruit and blossoms are found on the same tree at the same time. The chief town, Manilla, in the island of Luzon, contains about 40,000 inhabitants.

5. MOLUCCAS, or SPICE ISLANDS.—The Moluccas, properly so called, are the five small islands of Ternaté, Tidore, Motir, Makian, and Bakian or Batchian, which lie west of Gilolo; but

* 3. A poisonous tree, called the *upas*, grows in this island. It furnishes an active poison; but does not kill men or animals at a distance, nor blast and destroy the surrounding plants, as has been often stated.

Celebes, Gilolo, Ceram, and several others, are generally comprehended in the same groupe. Celebes and Gilolo are remarkable for their curious figures, and their resemblance to each other. The five islands above mentioned, are the only places in the world where cloves and nutmegs are produced in perfection. The Dutch have monopolized the entire traffic in these commodities, which, in consequence, sell at extremely high prices.*

LXXXII.—SOUTH-WEST OCEANICA.

1. NEW HOLLAND.—This vast island seems to be nearly 2500 miles long, from east to west; and above 2000 miles in breadth, from north to south. Except the eastern coast, which is called New South Wales, it is almost unknown. This part is the seat of an English colony, a great part of the population of which is composed of convicts, sentenced to transportation for crimes. Several of these have reformed, and become respectable and wealthy members of the colony. Many, however, have shown little improvement in their habits and propensities. There are several useful and efficient schools, for the instruction of the children, both of the free settlers and of the convicts. There is one also for instructing the children of the original savage inhabitants, which is likely to be productive of much good, as the children show sufficient aptness, though their parents are among the rudest and most uncultivated of the human race found in any part of the world. The principal town, Sydney, on Port Jackson, contains about 7000 inhabitants; and there are several smaller, which are fast increasing.

2. VAN DIEMAN'S ISLAND.—Van Dieman's Land is a fine island which lies south of the eastern part of New Holland. The climate is mild and salubrious, and the soil fertile. Many settlers have of late resorted to it from the British Islands; and the colony is in a very prosperous state.

3. NEW GUINEA.—New Guinea is a large island, north of New Holland. It is very imperfectly known, but it seems to be fertile; and the inhabitants, who are blacks, are savages of the rudest kind, and of the most disgusting appearance.

* 4. Cloves are the fruit of a tree, which grows to the height of forty or fifty feet. The nutmeg is the fruit of a similar tree; and the coating by which the nutmeg is covered, is called mace. These spices, were there no monopoly, might be sold in Europe for sixpence per pound; while in England, in consequence of the high price paid to the Dutch, and of the duties, they sell for seventeen times that sum. These islands, as well as those already mentioned, have many birds of extreme beauty; such as birds of paradise, paroquets, and several others.

4. New Zealand.—New Zealand consists of two islands, of which the northern seems to be rather smaller, and the southern rather larger, than Ireland. The northern island is fertile, and well adapted for cultivation; but the southern seems to be rather mountainous. The climate of both is good. The inhabitants are far superior in intelligence to those of New Holland, and are much farther advanced towards civilization. They devour the bodies of their enemies, however; but this is done from vengeance, and not from fondness for human flesh.

LXXXIII.—POLYNESIA, OR EASTERN OCEANICA.*

1. Sandwich Islands.—The principal of the Sandwich Islands is Owhyhee or Hawaii, the place where Captain Cook was unfortunately killed, in an affray with the natives, in 1779. Since that period, the inhabitants have greatly advanced in civilization; and have now twenty merchant ships, with which they perform voyages to the coast of America. They are described as a gentle, benevolent race; though, from custom and their religious ideas, they sacrifice human victims.

2. Friendly Islands.—The Friendly Islands are about a hundred in number, and are in general fertile and pleasant, but are subject to earthquakes.† The principal island is Tongataboo, which is divided into three small states. The inhabitants of these islands frequently sacrifice human victims; but they are, in general, represented as in other respects gentle and kind towards each other.

3. Society Islands.—The principal islands in this groupe are Otaheité, Huaheiné, Ulietea, and Eimeo. Of all the islands in the Pacific, none is perhaps so interesting as Otaheité, or, as it is also called, Tahiti. The plains and valleys are extremely fertile; and produce, in the greatest perfection, almost all the

* 5. In the almost numberless islands scattered over the Pacific Ocean, the climate, from their insular situation, is in general much milder than might be expected from their latitudes. Several of them contain volcanoes; and others exhibit marks of former ones, now extinct. Most of them are fertile and pleasant, and yield in profusion the fine productions of the tropical regions of the earth, such as the bread-fruit, cocoa, and orange trees, the sugar-cane, and many others. Their shores abound in fine fish, and their forests are peopled with myriads of beautiful birds. In almost all these islands, however, the Europeans found very few quadrupeds. In some, indeed, it is said there were none; and in others, only pigs, dogs, and rats. Several of the most useful species have since been introduced.

† 6. The inhabitants of Tongataboo believe, that the island is supported on the back of the god Mauwi; and that earthquakes take place when he moves, in consequence of becoming tired of his load.

vegetable species known in the islands of the Pacific. Of late, the inhabitants have very generally embraced the Christian religion, as propagated by the missionaries; and, with it, the manners, and even the dress of civilized Europe.

Exercises on the Map of Oceanica.

Through what parts of Oceanica does the equator pass? Whether is the greater part of this division of the earth in north or south latitude? What parts of it lie north of New Holland? What east of it? What are the extreme latitudes and longitudes of New Holland and Borneo? How are the Philippine Isles situated in respect to China? What parts of America are in the same latitudes as Otaheité and Owhyhee? What islands are most nearly in the longitude of 180°? How are the Society, Sandwich, and Friendly Islands, situated in respect to each other? How are the islands of New Zealand situated in respect to the Society Islands? What islands lie east of Van Dieman's Island? How are Borneo, Sumatra, Java, and Celebes, situated in respect to each other? How far is Easter Island from the coast of Chilé? How far is Owhyhee from California?

Questions on the Notes to Sections LXXX....LXXXIII.

3. Where does the upas tree grow? What is its nature? What false statements have been made respecting it?
4. What are cloves? Nutmeg? Mace? At what rate might these spices be sold in Europe, were there no monopoly? At what rate do they sell? What beautiful birds are found in these several islands?
5. What is the nature of the climate in the islands of the Pacific? What do most of these islands produce? What animals are found on their shores and in their forests? What animals were found to be scarce in them?
6. How do the inhabitants of Tongataboo account for earthquakes?

END OF THE GEOGRAPHY.

APPENDIX.

I.—FIGURE OF THE EARTH.*

1. The Earth is proved to be nearly globular, by various arguments. When a ship approaches the land, the first parts of her that are seen by those on shore, are her masts and rigging; and she seems gradually to rise out of the water, till at length the hull becomes visible. In like manner, the persons in the vessel see first the tops of mountains or hills, and last of all the beach. When the vessel sails from the land, the hull first disappears from the view of those on shore, and the top of the mast is longest visible; and those in the vessel see the tops of spires, hills, and mountains, for a considerable time after the beach has disappeared. In all these cases, the disappearance of the lower objects can be accounted for, only on the supposition, that the surface of the water is convex; as, were this not the case, the bulkiest objects—such as the hull of the ship, and the lower parts of buildings, hills, and mountains—would be longest visible. These appearances are observed at every shore in the world, and in every direction. The surface of the sea, therefore, must in all places be nearly globular;† and the

* 1. Other interesting particulars respecting the Earth, will be found in what follows. The remarks on its figure, in this section, are given in a separate form, on account of their close connexion with Geography.

† 2. The same phenomena are observable in the ocean, at any distance from land; as the seaman finds from experience, that, in all places, he has a more extended view from the top of the mast, than from the deck of the ship. In sandy deserts also, and in regions which are destitute of mountains and hills, the same appearances are exhibited; the lower parts of remote objects being constantly concealed from the view by the intervening country. These phenomena may be illustrated, by moving a pencil, or any similar object, along the surface of a ball or artificial globe, in such a manner, that its length may always be directed towards the centre. They are also well illustrated by the appearances observable on the sides of a round hill, the lower parts of the objects disappearing as we recede from them. It may be far-

highest mountains on the land are far smaller, in comparison of the Earth's magnitude, than the inequalities on the surface of the smoothest fruit are in comparison of the fruit itself.*

2. This conclusion is confirmed by eclipses of the Moon; as the shadow of the Earth on that luminary, is always found to be terminated by a boundary not differing sensibly from an arch of a circle; and no body, except a globe, can, in all positions, cast a circular shadow.†

3. A farther proof of the same conclusion is, that the Earth has been circumnavigated by Magallan, Drake, Anson, Cook, and many others.‡

4. All calculations also, particularly in Geography and Navigation, which are made on the supposition that the Earth is spherical, are found to give results which are very nearly true; while the results derived from the supposition that its surface is a plane, are quite false.§

5. None of the inhabitants of the Earth feel any inconvenience from this figure; as in every place all objects are attracted towards the centre, and every person conceives the Earth to be beneath his feet, and the heavens to be over his head.

6. A plane touching the Earth's surface at any point, is called the *sensible horizon* of that point; and a great circle whose plane is parallel to the sensible horizon, is called the *rational horizon* of the same point.‖

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ther observed, that, if the Earth were an extended plane, as was believed in early times, the Andes and other high mountains would be visible at vast distances, the thickness of the atmosphere being the only obstacle to their being seen from elevated positions, at the remotest parts of the Earth.

* 3. How small the heights of mountains are, in comparison of the magnitude of the Earth, will appear, if we consider that five miles, a space which almost equals the height of any mountain at present known, is only about a sixteen-hundredth part of the Earth's diameter. Now, the sixteen-hundredth part of twelve inches is about the hundred and thirtieth part of one inch; so that the highest mountain on the Earth would be represented on a terrestrial globe, twelve inches in diameter, by a prominence very little exceeding the thickness of common writing paper.

† 4. The nature of eclipses will be explained hereafter in Section X.

‡ 5. If the Earth were a flat surface, it might, in one sense, be circumnavigated by a vessel perpetually changing her course, and thus describing a circuit on the plane, in the same manner as a boat may sail round a lake. In the cases above referred to, however, the navigators constantly sailed in the same direction, except when obliged to deviate in some degree for the purpose of doubling certain lands, particularly the southern parts of Africa and America; and they at length arrived at the place from which they had set out, which they could not have done, had the Earth been a plane.

§ 6. We also naturally infer from analogy, that the Earth is of the figure mentioned above, since all the other planets are found to be very nearly of that figure.

‖ 7. The term *horizon* is the participle of a Greek verb, which signifies *to bound*; and, having the word synonymous with *circle* understood, it denoted originally the

7. The *zenith* of any place is the point in the imaginary celestial sphere around us, which is exactly over the place; and the *nadir* is the point of the same sphere, which is diametrically opposite, or which is the zenith of the antipodes of that place.

8. When the figure of the Earth is accurately examined, it is found not to be exactly spherical. This is inferred from the fact, that degrees of the meridian are rather greater towards the poles, than near the equator;* and from this it follows, that the Earth must be somewhat flattened at the poles, and protuberant at the equator.

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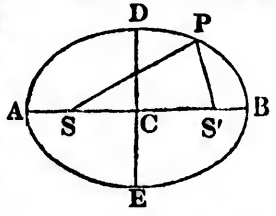
circle which limits the view, as nothing below it can be seen. In a popular sense, it is the circle in which the sky and the surface of the Earth, or rather of the sea, appear to meet; and, if the eye be supposed to have no elevation, this circle will coincide with the sensible horizon, as above defined.

8. If the Earth were an exact sphere, and if a person should travel due north or south, the altitude of the pole star, or of any other when on the meridian, would increase or decrease exactly in proportion to the space passed over. This is found to be nearly, but not exactly so; a degree of the meridian at the equator being about 1675 feet less, and one at the polar circle about 1158 feet greater, than the one above mentioned at the parallel of 45°. Hence it is evident, that a circle nearly coinciding with the meridian at the equator, would be less than one nearly coinciding with it in the higher latitudes; and, consequently, the curvature is greater in a given space near the equator than near the poles; or, which is the same, the surface differs less from a plane in the polar regions than in the equatorial. According to late measurements in various parts of the world, the difference of the polar and equatorial diameters is found to be between a three hundredth and a three hundred and twenty-fifth part of the latter.

If there be two places on the same meridian, or due north and south of each other; and if, at each, the altitude of any star, when on the meridian, be taken with a quadrant or other instrument; the difference of the altitudes will be the difference of latitude of the two places. Should the difference of latitude be one degree, if the distance between the places be measured, it will be the length of a degree at that part of the meridian. Should it not be a degree, the length of a degree will be determined by proportion.

Some terms occurring in this Appendix will be understood from the following illustrations. If the ends of a thread, S P S′, be fastened to two pins, S S′, fixed at a less distance asunder than the length of the thread, and if the point of a pen or pencil, P, be carried round in such a manner as to keep the thread constantly stretched, the figure enclosed by the curve line thus described, is called an *ellipse*: the points S and S′, where the pins are fixed, are called the *foci* (and each of them a *focus*): the line A B, drawn through the foci, and terminated both ways by the curve, is called the *greater axis*; and the line D E, drawn perpendicular to this axis through its middle point, and terminated by the curve, is called the *less axis*.



If one of the parts into which an ellipse is divided by either of the axes, revolve about that axis, the figure which it describes is called a *spheroid*;—*prolate*, if the revolution be performed round the greater axis; *oblate*, if round the less. An egg is nearly of the former figure; and a watch, or a flat turnip, nearly of the latter.

The diameter of a circle is to its circumference nearly as 113 to 355, or more nearly as 1 to 3·141593. A straight line drawn from the centre to the circumference, is called a *radius*, and is evidently half the diameter.

The length of a degree at the parallel of 45°, is found by measurement to be 69 miles 79 yards, which may be taken as the mean length of a degree. If this be multiplied by 360, the product is 24,856 miles, the circumference of a great circle passing through the poles; and hence, the mean diameter of the Earth is found to be nearly 7912 miles. From a comparison of the lengths of degrees measured in various parts of the world, it is inferred, that the Earth is very nearly an oblate spheroid, which has its equatorial diameter about twenty-five miles longer than its polar.

Questions on Section I.

1. What appearances does a ship approaching the land present to an observer on the shore? What parts of the land are first seen by those in the vessel? Describe the corresponding phenomena, when the vessel sails from the shore. How are these appearances accounted for? Were the Earth flat, what objects would continue longest visible? Are these appearances observed at all shores and in all directions? What is the general inference from these phenomena? Are the magnitudes of mountains considerable in comparison of the Earth's magnitude?
2. How do eclipses of the Moon prove the Earth to be nearly globular? What is the only body that in all positions can cast a circular shadow?
3. What proof of the Earth's being a round body is drawn from the voyages of certain navigators?
4. How is the correctness of this opinion inferred from the truth of some, and the falsity of other calculations?
5. Why do the inhabitants of the earth feel no inconvenience from its figure?
6. What is the sensible horizon? The rational?
7. What is the zenith of a place? The nadir?
8. How is it inferred that the Earth is not exactly spherical? What is the mean length of a degree? What is the circumference, and how is it found? What is the mean diameter? Of what figure is the Earth? How much is the polar diameter less than the equatorial? How is this known?

Questions on the Notes to Section I.

2. How is it shown that the lower parts of distant objects are invisible at any part of the ocean, as well as near its shores? In what cases are the same phenomena exhibited on land? How may these appearances be illustrated?
3. How may the smallness of the heights of mountains, compared with the magnitude of the Earth, be illustrated?
5. Illustrate the argument in support of the opinion, that the Earth is a round body, drawn from its having been circumnavigated.
6. What argument is there from analogy, in support of the opinion that the Earth is nearly globular?
8. How much shorter is a degree at the equator than one at the parallel of 45°? How much is one at the polar circle longer than the same? How do we infer from this, that the Earth is flatter towards the poles than about the equator? What part of the equatorial diameter is the difference between it and the polar one found to be?

How may the length of a degree of the meridian be found?

How may an ellipse be described? What are the foci? The greater axis? The less axis?

What is a prolate spheroid? An oblate one? Give instances of objects which are nearly of these figures.

What is the ratio of the diameter and circumference of a circle? What is the radius of a circle?

ASTRONOMY.

II.—GENERAL VIEW OF THE SOLAR SYSTEM.

1. *Number of the Planets, &c.*—The solar system consists of the Sun, and several bodies which revolve round him, and are called planets; besides many comets. The planets are of two kinds, *primary* and *secondary*. The *primary* are those which revolve round the Sun, as the centre of their motions; and the *secondary*, which are also called *satellites* or *moons*, are smaller planets which revolve round some of the primary, and are carried with them round the Sun.* The number of primary planets at present known is eleven, and that of the secondary eighteen.

2. *Names of the Planets, &c.*—The primary planets are Mercury, Venus, the Earth, Mars; Vesta, Juno, Ceres, Pallas; Jupiter, Saturn, and Uranus or the Georgium Sidus.†

The secondary planets, at present known, are the Moon, which accompanies the Earth; four satellites belonging to Jupiter, seven to Saturn, and six to Uranus.‡

3. *Orbits of the Planets.*—The primary planets revolve from west to east, in elliptical paths or orbits, having the Sun in one of the foci. Most of these orbits differ very little from circles; the eccentricity, or distance between the centre of any of them and the focus, being in most cases very small in comparison of the magnitude of the

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* 1. The essential difference between a secondary planet and its primary is, that the latter contains many times more matter than the former. In consequence of this, the common centre of gravity of both is very near the primary; and though, in strictness, both revolve round that point, the motion of the primary, from its nearness, is very small: and the primary may be regarded, without much error, as the centre about which the secondary revolves.

† 2. Uranus was discovered by Dr. (afterwards Sir William) Herschel, in 1781; Ceres by M. Piazzi, at Palermo, on the first of January, 1801 (the first day of the present century); Pallas in 1802, and Vesta in 1807, both by Dr. Olbers, at Bremen; and Juno in 1804, by Mr. Harding, at the observatory of Lilienthal, near Bremen. The other primary planets have all been known since the earliest times.

‡ 3. The satellites of Jupiter were discovered in 1609, immediately after the invention of the telescope; and those of Saturn and Uranus, at different times since.

orbit itself. The secondary planets also describe orbits of the same kind, having each its respective primary in one of its foci.*

4. *Distances of the Planets.*—The mean distances of the planets from the Sun, in millions of miles, are as follows: Mercury, 36; Venus, 68; the Earth, 93; Mars, 142; Vesta, 221; Juno, 248; Ceres, 257; Pallas, 257; Jupiter, 486; Saturn, 890; Uranus, 1790.†

5. *Periodic Times.*—The periods of their sidereal revolutions, or the times in which they complete their revolutions round the Sun, are nearly as follows: Mercury, 88 days; Venus, 7½ months; the Earth, 12 months; Mars, 1 year 10½ months; Vesta, 3 years 8 months; Juno, 4 years 4 months; Ceres and Pallas, 4 years 7 months; Jupiter, 11 years 10½ months; Saturn 29½ years; and Uranus, 84 years.‡ These times are the lengths of the years in the several planets.

6. *Velocities.*—From the distances and periodic times of the planets, their mean velocities in their orbits may be

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* 4. This will be illustrated by the foregoing figure, in which S will represent the Sun, the curve line A D B E the orbit of a planet, and C S its eccentricity. At the point A, the planet will be nearest the Sun; at B, most remote; and at D or E, it will be at its mean distance. By the nature of the ellipse, the mean distance, S D or S E, is equal to A C or C B, half the greater axis. The planetary orbits, however, differ much less from circles than the figure referred to. In the Earth's orbit, for instance, the eccentricity, S C, is only about a sixtieth part of the mean distance A C. From the table at the end of this article, it appears, that the orbits of Juno, Pallas, and Mercury, are the most elliptical; and those of Venus and the Earth, the least so. It may be farther remarked, that the eccentricities are all subject to some variation, in consequence of the mutual attractions of the planets.

† 5. These distances are nearly as the numbers 4, 7, 10, 15, 24, 27, 28, 28, 52, 95, and 192. If round a point representing the Sun, circles be described with these distances, as radii, they will nearly represent the orbits of the planets. The radii may be taken from a scale of equal parts, which the pupil can form for himself, with the parts greater or smaller, according to the intended size of the scheme. If much accuracy be wished for, and more especially if the scheme be large, the orbits of Juno, Pallas, and Mercury, may be made elliptical by means of their eccentricities.

So vast are these distances, that a body moving at the rate of 13 miles per minute, which is about the velocity of sound, would be five years and a quarter in moving from the Sun to Mercury; and a cannon ball, with the velocity of 20 miles per minute, would be 170 years in passing from the Sun to Uranus.

‡ 6. By the time of a sidereal revolution, is meant, the period that elapses between the planet's appearing, as seen from the Sun, in any position in respect to the fixed stars, and its being again seen in the same position. It has been found, that *the squares of these periods are proportional to the cubes of the mean distances.* Thus, by squaring 365 and 88, the nearest days to the periods of the Earth and Mercury, we get 133225 and 7744; and the cube of 93, the millions of miles in the Earth's mean distance, is 804357. Then, as 133225 : 7744 : : 804357 : 46755; the cube root of which is 36, the millions of miles in the mean distance of Mercury. This important theorem is the last of the three Laws that were discovered by Kepler. The first of these is, that *if a straight line be drawn from the central to the revolving body, it will describe equal areas in equal times*; and the second, that *the planets revolve in elliptic orbits, having the Sun in one of the foci.* Kepler was a distinguished German astronomer, who died in 1630.

calculated. Thus, by multiplying double the Earth's mean distance by 355, and dividing the product by 113, we obtain 584 millions of miles, the space described during one revolution. If this be divided by $365\frac{1}{4}$, the quotient is 1,600,000 nearly, which is the average space described in one day. Dividing this again by 24, we get 66,600 miles, the motion in one hour; and two successive divisions by 60 give 1110 miles, the space described in a minute; and 18 miles, that which is described in a second. By similar processes, we should find the mean hourly spaces in miles described by Mercury, Jupiter, and Uranus, to be 110,000,* 29,000, and 15,000; the velocity being less, the more remote the planet is from the Sun.

7. *Apparent Motions of the Planets.*—Seen from the Earth, any of the other planets appears sometimes to move westward among the fixed stars, or contrary to the direction of its real motion. At the beginning and end of this apparent retrograde motion, the planet appears for a short time to be stationary. These appearances are the effect of the combined motions of the Earth and planet.†

8. *Inclinations of the Planetary Orbits.*—The planes in which the orbits of the planets are situated all pass through the centre of the Sun. With the exception of the orbits of Juno, Ceres, and Pallas, they are all inclined to each other at small angles; none of them making, with the plane of the Earth's orbit, an angle exceeding seven degrees and a few minutes; while most of them make much smaller angles.‡

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* 7. This space is between four and five times the circumference of the Earth.

† 8. These phenomena may be illustrated, by causing two balls to move round a candle or other centre, the interior one in shorter time than the other. Then, the eye being kept at one of them, if the other be observed, it will appear generally to advance in reference to any marks on the walls, but sometimes to recede. In like manner, the planets generally appear to move eastward, in relation to the fixed stars; but sometimes they seem to have a motion in the contrary direction. The inferior planets have this apparent retrograde motion, for some time before and after their *inferior conjunctions*, or their positions when between the Earth and Sun; and the superior planets, for some time before and after their oppositions. The periods of retrogradation are nearly the same: but the mean period for Saturn is about 140 days; for Jupiter, 120 days; for Mars, 73 days; for Venus, 42 days; and for Mercury, 22 days. It may be remarked, that the Earth, seen from any of the planets, would appear to move retrograde at the same time that the planet appears to move retrograde, as seen from the Earth.

‡ 9. To illustrate this subject, take a piece of pasteboard, to represent the plane of the Earth's orbit, and on it describe a circle for the *orbit*, the centre representing the Sun. Then, through this centre, cut a straight slit, in which put another circle, described on a separate piece of pasteboard, and of a size different from that which represents the Earth's orbit. Make the two centres coincide, and incline the circles at a small angle. Then the circle thus inserted will represent the orbit of an infe-

9. *Rotations.*—While the planets are performing their revolutions round the Sun, several of them are known to revolve from west to east, on lines within themselves, called their axes; and thus all parts of their surfaces enjoy the vicissitudes of day and night. The times of rotation, except for the Earth, are found by observing the periods occupied by certain spots in completing revolutions round the planets. Some of the planets, from their distance, smallness, or other causes, do not exhibit any spots by which their rotations can be ascertained;* but there seems to be every reason to conclude from analogy, that they all have such motions. The Sun also is found, in a similar manner, to perform a rotation in upwards of twenty-five days, and the Moon in the same time in which she revolves round the Earth.

10. *Figures of the Planets.*—The planets are all nearly globular. Mars, Jupiter, and Saturn, are found to be compressed at the poles in the same manner as the Earth, but in a much more considerable degree; the polar and equatorial diameters of Mars being as 15 to 16, of Jupiter as 13 to 14, and of Saturn as 10 to 11. This compression is thought to be produced in the two latter, principally by their swift rotations on their axes; and in the former, by its being composed of matter which is denser in some parts of his body than in others.

11. *Magnitudes of the Planets.*—Some of the planets are much smaller, and others vastly larger than the Earth. Thus, the bulk of Jupiter is nearly 1300 times, of Saturn nearly 1000 times, and of Uranus nearly 90 times, that of the Earth; and, while Venus and the Earth are of nearly equal size, the magnitude of Mars is about one seventh, and that of Mercury about one fifteenth, of the Earth's magnitude. The Sun is of enormous dimensions, his bulk being nearly 1,400,000 times that of the Earth.†

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rior planet. The points in which the orbit of the planet cuts the plane of the ecliptic, are called the *nodes* of its orbit; and the straight line joining these, is termed the *line of the nodes.*

* 10. For these reasons, the times of rotation of Uranus, Vesta, Juno, Ceres, and Pallas, are unknown. That of Mercury, also, is doubtful. It will be seen, by the table to be given hereafter, that the lengths of the day in Venus, the Earth, and Mars, are nearly equal; and that in Jupiter and Saturn, they are also nearly equal to one another, but are much smaller than with us.

† 11. The magnitudes of Vesta, Juno, Ceres, and Pallas, are not well ascertained; but Ceres is thought to be about as large as the Moon, and Vesta a little larger; while Juno and Pallas are much smaller. The magnitudes, or solid contents, of spherical bodies, are proportional to the cubes of their diameters. Thus the dia-

12. *Sun's Attraction, &c.*—The Sun's direct influence on the planets in respect to heat, light, and attraction, and also his apparent magnitude as seen from them, are inversely proportional to the squares of their distances from him; that is, it decreases as the squares of the distances increase. Hence, the direct influence of the Sun on Mercury is nearly seven times as great as on the Earth; and seen from that planet, he will appear nearly seven times as large: while his influence on Uranus will be only a three hundred and sixty-eighth part of his influence on the Earth, and his apparent magnitude will be diminished in an equal degree.*

13. *Densities, &c.*—From comparing the attractive powers of the bodies in the system, and their magnitudes, the quantities of matter which they contain and their densities have been determined. Thus, it has been found, that Jupiter contains 312 times as much matter as the Earth; Saturn, nearly 98 times; and Uranus, nearly 17 times, as much. The densities of Jupiter and Uranus are rather above one fifth of the Earth's density, while that of Saturn is little more than one tenth. The Sun's density rather exceeds one fourth of that of the Earth; but so vast is his magnitude, that he contains nearly 334,000 times as much matter as the Earth, or above 600 times as much as all the planets at present known.†

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meters of the Earth and Saturn being nearly as 1 to 10, their solid contents or volumes will be nearly as 1, the cube of the first, is to 1000, the cube of the second. The contents of the surfaces of such bodies, are proportional to the squares of their diameters. Hence, the surface of Saturn is almost 100 times as great as that of the Earth. By this means, it would be readily found, that the surfaces of all the planets, taken together, are nearly 250 times that of the Earth.

* 12. For the distance of Mercury is to that of the Earth nearly as 5 to 13; and the squares of these are 25 and 169, the latter of which is nearly seven times the former. Again, the Earth's distance is to that of Uranus nearly as 1 to 19·18, the squares of which are 1 and 368 nearly.

We are not entitled to conclude, from these results, that Mercury is so hot and so brilliantly illuminated, or Uranus so cold and gloomy, as we might at first suppose. We are ignorant of the nature of their surfaces, structures, and atmospheres; and, consequently, we cannot know what effects may be produced on them by the solar rays. They may, therefore, be as well adapted as the Earth, to afford comfortable habitations for animals; and even if they and the other planets should differ considerably in this respect, there can be no doubt, but the wisdom and goodness of the Creator have suited the constitutions of the inhabitants to the residence which they are destined to occupy. The degree of attraction, and the Sun's apparent magnitude, follow precisely the law above stated. Hence, in Mercury, the Sun's diameter will appear to be more than two and a half times as great as it does to us, and his disk nearly seven times as great; while in Uranus, he will appear very little larger than Jupiter or Venus does to the inhabitants of the Earth.

† 13. The quantities of matter contained in bodies, are proportional to the degrees of attraction which they exert on other bodies in similar circumstances. Hence, the degrees of attraction exerted by the primary planets on their satellites,

Questions on Section II.

1. Of what does the solar system consist? What are primary planets? Secondary? How many planets are at present known?
2. Name the first four of the primary planets. The next four. The rest. Which of the primary planets have secondaries, and how many has each?
3. In what direction do the planets revolve? Of what figure are their orbits? Where is the Sun situated? What is the eccentricity of an orbit? Are the eccentricities in most of the planetary orbits great or small? Of what kind are the orbits of the secondary planets?
4. What are the mean distances of the several planets from the Sun?
5. In what times do the several planets revolve round the Sun?
6. Show the method of calculating the velocity of the Earth's motion in its orbit. Show the same in respect to Mercury, and the other planets. What is the velocity of Mercury per hour? Of Jupiter? Of Uranus? What planets have the greatest velocities?
7. What apparent irregularities are exhibited in the motions of the planets, as seen from the Earth? Whence do these result?
8. Through what point do the planes of all the orbits of the planets pass? How are the orbits situated in respect to each other?
9. What motions have the planets, besides those in their orbits? What effects result from these motions? How are the times of rotation of the Sun, and the other planets, besides the Earth, determined? Why are the times of rotation of some planets unknown? Why is it probable, that they all have such motions? In what times do the Sun and Moon perform their rotations?
10. What are the figures of the planets? Which of them are observed to be compressed at the poles? In what degree do the equatorial diameters of these exceed their axes? How is this compression thought to be produced?
11. How many times greater are Jupiter, Saturn, Uranus, and the Sun, than the Earth? What is the Earth's bulk compared with those of Venus, Mars, and Mercury?
12. What is the law that regulates the degree of the Sun's direct influence on the planets, in respect to heat, light, and attraction? In respect to what else does the same law hold? Compare the Earth, in these respects, with Mercury and Uranus; and also with Venus and Jupiter.
13. How are the densities of the planets, and the quantities of matter which they contain, determined? How many times more matter do Jupiter, Saturn, Uranus, and the Sun, contain than the Earth? What are the densities of the same bodies, compared with that of the Earth? What is the quantity of matter contained in the Sun, compared with that contained in all the planets at present known?

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being known from the periods and distances of the satellites, the quantity of matter contained in those planets which have secondaries, can in general be ascertained with a great degree of accuracy. The case is different with respect to those which have not satellites, as their power of attraction can be known only by the effects which they produce in disturbing the motions of the other planets. Hence, the quantities of matter contained in such planets, are determined with much more difficulty and less certainty. The results which appear to be most nearly correct, will be found in the table at the end of this article. By examining these, it will appear that, with the single exception of Uranus, the nearer any planet is to the Sun, the greater is its density.

It may be farther remarked, that the mean density of the Earth is supposed to be about five times that of water; and hence it will follow, that the planet Mercury, if its density be correctly determined, is considerably heavier than a mass of copper of the same magnitude; while the mean density of Saturn is only about three fourths of the density of fir, or less than twice that of cork.

Questions on the Notes to Section II.

2. Who was the first in modern times to discover a new planet? What planet was this, and when was it discovered? Who discovered Ceres, and when? Pallas? Vesta? Juno?
3. When were the satellites of Jupiter discovered, and on what occasion?
4. Point out in the diagram the place of the Sun; the orbit of a planet, and its eccentricity. Shew the planet's positions, when nearest the Sun, when

III.—THE SUN.*

1. The Sun is nearly, but not exactly, the centre of the system. The real centre is the common centre of gravity† of the Sun, and all the other bodies in the system; and round this, the Sun and all those bodies move.

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most remote, and when at its mean distance. In the earth's orbit, what part is the eccentricity of the mean distance? What planets have the most elliptical orbits? Which differ least from circles?

5. In what time would a body, moving with the velocity of sound, pass from the Sun to Mercury? In what time would a cannon ball, with the velocity of 20 miles per minute, move from the Sun to Uranus?
6. What is meant by a sidereal revolution? What is the first of Kepler's laws? The second? The third? Who was Kepler? When did he die?
7. How many times the Earth's circumference, is the space described by Mercury in his orbit in a single hour?
8. How may the apparent motions of the planets be illustrated? When are the apparent motions of the inferior planets retrograde? When those of the superior planets? When would the Earth's motion, seen from any other planet, appear to be retrograde?
9. How may the inclinations of the planetary orbits be illustrated? What are the nodes of the orbit of a planet? What is the line of the nodes?
11. To what are the solid contents of spherical bodies proportional? Illustrate this in respect to the Earth as compared with Jupiter and Mars, and in respect to Mercury as compared with Jupiter? To what are the contents of the surfaces of spheres proportional? Illustrate this in respect to Saturn and Jupiter, as compared with the Earth. What is the amount of the surfaces of all the planets, compared with that of the Earth?
12. How many times greater does the Sun appear as seen from Mercury than from Uranus? How many times greater is the Sun's attraction on Venus than on Saturn?

Why are we not entitled to conclude, from the differences in the Sun's distances from the several planets, that they cannot be habitable?

13. To what are the quantities of matter contained in bodies proportional? Of what class of planets can the quantities of matter be ascertained with most, and of what with least accuracy? Whether have the planets near the Sun, or those more remote, the greater densities?

What is the Earth's mean density, compared with that of water? Give familiar illustrations of the weights and densities of the planets Mercury and Saturn.

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* 1. After the foregoing general sketch of the solar system, it will be proper to consider the bodies in it separately, especially in respect to any peculiarities that may belong to them.

† 2. If two balls be fixed at the opposite ends of a straight wire or rod, their common centre of gravity is the point of the wire, on which they will be exactly balanced. The distance of this point from the centre of the lighter ball, will be to its distance from that of the other, as the weight of the heavier is to that of the lighter, if the weight of the wire be neglected. If one ball, equal in weight to these two, be placed in the point thus found, the common centre of gravity of it and a fourth, found in the same manner, will be the common centre of gravity of the first two and the fourth, whether these three are in the same straight line or not; and it is easy to see how, by this principle, the common centre of gravity of four or more balls might be determined. It will be seen also, that this centre will be nearest the heaviest ball, and most remote from the lightest. In just the same manner, by using the quantities of matter contained in the Sun and planets, instead of weights, the position of their common centre of gravity may be found; and it is plain, that the Sun will be nearest it, when the planets are situated in different parts of the heavens around him; and most remote, when they are all on the same side of him.

So great, however, is the quantity of matter contained in the Sun, that his centre is never more remote from the centre of the system than the length of his diameter, and it is generally much less, the distance depending on the positions of the planets; and hence there is little impropriety in calling the Sun the centre of the system.

2. *Spots, &c.*—When the Sun is examined with a telescope, various dark spots are frequently discovered on his surface. These are sometimes far larger than the entire surface of the Earth. They vary much in their number and appearance, sometimes none being visible, and sometimes several; and on some occasions one spot separates into two or more, while at other times two or more unite into one. They are now generally supposed to be produced by convulsions and openings in the luminous matter on the surface of the Sun. Though there are some irregularities, from the causes already mentioned, they seem to complete their revolutions, from one limb of the Sun to the same position again, in the average period of 27 days, 7 hours, 37 minutes; and hence, the period of the Sun's rotation is computed to be 25 days, 10 hours, nearly.*

3. *Nature of the Sun.*—With respect to the nature of the Sun, there have been different opinions. Some have thought, that he is an immense mass of fire, merely designed to afford heat and light to the planets; while others have supposed him to be a habitable world. Of the latter opinion was Sir William Herschel, who thought that the Sun consisted of a solid body or nucleus, surrounded with an atmosphere in which luminous clouds float, diffusing light and heat through the system; and he conceived that the interior, or habitable part, is protected from the heat of the exterior surface by strata of dark clouds placed between them. Another opinion is, that the Sun is not a heated body; and that, instead of diffusing heat and light through the system, his influence merely brings into action the principles of these sub-

* 3. The period in which the spots appear to revolve, is longer than the real period, in consequence of the Earth's motion round the Sun, in the same direction in which they revolve; as, by this means, the observer on the Earth is enabled to keep them longer in view, than he would if the Earth were at rest. To find the true period, add the observed period to the time of the Earth's revolution; then, as the sum thus obtained is to the Earth's period, so is the observed period of the Sun's rotation to the true period.

stances contained in the bodies themselves. These, however, are all merely theories, which it is perhaps impossible either to confirm or disprove.

4. *Sun's Apparent Motion.*—Like the other heavenly bodies, the Sun appears to us to perform each day a revolution round the heavens, from east to west, in consequence of the Earth's rotation in the contrary direction. He is also constantly, though slowly, changing his apparent situation in relation to the fixed stars, appearing to move each day almost one degree, or nearly twice his own diameter, eastward; and thus, in the course of a year, completing an entire revolution round the heavens. The circle which his centre thus appears to describe, is called the *ecliptic.* This is really the circle described by the Earth in its annual motion; the Earth describing one part of it, while the Sun appears to describe the opposite.*

5. *Appearances of the Planets, &c.*—The Sun is the only body in the system, in which the apparent motions of the planets accord with the real. Seen from the Earth, or any other planet, the rest appear sometimes to move eastward among the fixed stars, and sometimes westward; while at other times they seem to be stationary: but seen from the Sun, they appear constantly to move eastward, and always present a full, round, enlightened disk.

6. *Sun's Attraction.*—So great is the Sun's attraction, arising from his vast quantity of matter, that the weight of bodies on his surface, or the pressure which they sustain towards his centre, is nearly twenty-eight times as great as at the surface of the Earth.

7. *Motion of the Solar System.*—The Sun and the entire system are supposed to have a motion towards the constellation Hercules. This is inferred from the stars in that part of the heavens appearing to recede† from each other with extreme slowness, and from other similar appearances.

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* 4. This will be illustrated by placing a candle, lamp, or other object, in the middle of a room, and moving round it. In this case, it will appear to be successively in the direction of various points on the wall; and, in the same manner, the Sun, though at rest, appears to a person on the Earth, in its motion around him, to describe a circle round the celestial sphere among the fixed stars. The ecliptic is so called, because eclipses take place when the Moon is in or near it.

† 5. In the same manner as the trees in a grove seem to become more distant from one another as we approach them, while the intervals between those behind us seem to diminish as we recede from them.

Questions on Section III.

1. What is the real centre of the solar system? What is the greatest distance which the centre of the Sun can have from this centre? On what does the distance depend?
2. What does the telescope show on the Sun's surface? Of what magnitudes are some of the spots? What changes are there in their appearance? How are they supposed to be occasioned? In what time do they appear to complete their revolutions? In what time does the Sun revolve on his axis?
3. What opinions have been held respecting the nature of the Sun? What was Herschel's opinion? State another opinion.
4. What apparent diurnal motion has the Sun? What is the cause of this? What apparent annual motion has he? What is the daily amount of this? What is the circle thus described called? What, in reality, describes this circle?
5. What differences are there between the appearances of the planets and their motions, as seen from the Sun and from each other?
6. How much greater is the weight of bodies at the Sun's than at the Earth's surface?
7. What motion is the solar system supposed to have? Whence is this inferred?

IV.—MERCURY AND VENUS.

1. MERCURY and Venus are called, in relation to the Earth, *inferior planets;* because they are nearer the centre of the system, and, as it were, lower in it, than our planet. Those that are more remote than the Earth, are called *superior planets.*

2. MERCURY, in consequence of his nearness to the Sun, can never be seen from the Earth, except a little before sunrise, or a little after sunset. From the same cause, the Sun's diameter, seen from Mercury, appears more than two and a half times as large as it does to us, and his surface nearly seven times as large. The Earth also, and its satellite the Moon, will both be distinctly visible, if his atmosphere permit.

3. When viewed from the Earth with a telescope, Mercury presents phases similar to those of the Moon; appearing sometimes horned, sometimes half, and sometimes nearly round and full. In all these appearances, his enlightened side is turned towards the Sun;—a circumstance which proves that he shines, not by his own light, but by reflecting that of the Sun.

Questions on the Notes to Section III.

2. Illustrate the method of finding the common centre of gravity of two balls? What is the relation of the distances of that centre from the centres of the balls? How might the position of the common centre of gravity of more than two balls be determined? How is this centre situated in respect to the heaviest and lightest balls? How may the common centre of gravity of the solar system be found? When will the Sun be nearest it, and when most remote?
3. Why is the period in which the solar spots appear to revolve longer than the real period? How is the true period calculated?
4. How may the Sun's apparent motion be illustrated? Why is the ecliptic so called?
5. How are the appearances illustrated, which give reason to think that the solar system is in motion?

4. Mercury sometimes passes exactly between the Earth and Sun, and carries the appearance of a dark spot crossing the Sun's disk. Such an appearance is called a *transit.* These transits take place sometimes in May, and more frequently in November, because his orbit crosses the ecliptic at the Sun's positions about these times. About fourteen or fifteen of these happen each century.*

5. VENUS, as seen from the Earth, is the most beautiful, and apparently the largest of the planets. When about 40° from the Sun, she may be seen in day-light; and in this situation, she causes objects, in a place from which other light is excluded, to cast a sensible shadow.

6. When west of the Sun, she rises before him, and is called the *morning star,* or sometimes *Lucifer;* but when east of him, she sets after him, and is called the *evening star,* or sometimes *Hesperus.* She presents exactly the same phases as Mercury.

7. There are also transits of this planet, which happen in June and December, and which afford the only method of determining the Sun's distance from the Earth, with any tolerable degree of accuracy.†

8. From late observations, it appears, that Venus has mountains which are much higher than any on the Earth, and she has also an atmosphere and twilight.

Questions on Section IV.

1. What are inferior planets? Superior ones?
2. When only can Mercury be seen from the Earth, and why? How large do the Sun's diameter and surface appear, as seen from this planet? What primary planet, with its secondary, can be seen from Mercury?
3. What phases does Mercury present, when viewed with a telescope? How is his enlightened side always turned? What does this prove?
4. What is a transit? When do transits of Mercury take place, and why? How many of them happen in a century?
5. What is the appearance of Venus, as seen from the Earth? Give instances of her great brilliance.
6. When is she called morning, and when evening star? What phases does she present?
7. When do the transits of Venus happen? Of what great use are these in astronomy?
8. What do late observations prove respecting mountains? What else has Venus in common with the Earth?

* 1. When an inferior planet is in the same direction as the Sun, and on the side of its orbit next the Earth, it is said to be in its *inferior conjunction;* but when it is in the same direction, beyond him, it is said to be at its *superior conjunction.* In both cases, it is invisible.

† 2. These occur very rarely. The last three, the only ones that have been observed, were in 1639, 1761, and 1769; and the next two will be in 1874 and 1882. The method of determining the Sun's distance by means of these transits, is too difficult to be introduced here.

V.—THE EARTH.

1. The Earth has two motions; one round its own axis in a day, and another round the Sun in a year.* The former is called its diurnal motion, and the latter its annual.

2. The Earth's rotation on its axis from west to east, causes all the heavenly bodies to appear to revolve from east to west; in the same manner as, when we ride in a carriage or sail in a boat, the ground beneath us in the first case, and the banks and other fixed objects in the second, seem to move in the opposite direction. The same phenomena would be produced, indeed, were the Earth at rest, and all the heavenly bodies moving round us from east to west, and completing their revolutions in a day: but it is much more agreeable to the simplicity which is found to exist in all the works of the Creator, as far as they are known to us, to suppose, that the various phenomena are occasioned by the single motion of the Earth, than that all the numberless heavenly bodies should be moving round it, some of them at distances, and with velocities, far exceeding any conception that the human mind can form. Nor can any inconvenience result from such a motion; as the atmosphere moves along with the Earth, and since in all positions, and at every point of the Earth's surface, all objects, as has been already remarked, are attracted towards the centre; so that every person conceives the Earth to be beneath his feet, and the heavens to be above him.

3. Another proof of this rotation is, that pendulums move more slowly in places near the equator, than in those near the poles;—a circumstance which is easily explained on the supposition, that the rotation counteracts the effect of the Earth's attraction, by causing objects to tend to

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Questions on the Notes to Section IV.

1. What is meant by the inferior, and what by the superior conjunction of an inferior planet?
2. When have transits of Venus been observed? When will the next two happen?

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* 1. Motions similar to these may be seen in a ball thrown from the hand, which, while moving forward, may, if thrown with a particular cast, be at the same time revolving on an axis within itself. A top in motion affords a similar illustration.

fly off from the surface, in the same manner as a stone tends to fly off from a sling, when whirled round; and that the pendulum thus moves more slowly, being less affected by the power of gravity.*

4. A farther confirmation of the same opinion, arises from the Earth's being protuberant at the equator; not merely the solid parts, but even the surface of the sea, being twelve or thirteen miles higher, or more remote from the centre there, than at the poles.†

5. Since all the planets, also, upon which accurate observations can be made, revolve on their axes, we naturally infer from analogy, that the Earth has a similar motion.

6. The arguments in support of the Earth's motion in an orbit round the Sun—instead of the Sun, and the other bodies in the system, moving round the Earth—are of the same general character as those that prove the Earth's rotation. The objections against them may be answered

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* 2. It is a well known principle, that any body in motion will continue to move in a straight line, and with a uniform velocity, unless prevented by some external cause. Hence, if the earth have a rotation, and if bodies were not attracted towards its centre, they would be thrown off, except at the poles, by what has been called a centrifugal force, along a straight line touching the surface. This is prevented by the attractive or central force, the entire effect of which, however, is diminished by the amount of the centrifugal force. It follows from this, that, in case of rotation, bodies will tend towards the centre with less force at the equator than in the higher latitudes; and this is proved to be the case by the slower motion of pendulums in tropical countries, as it is evident that the motion of a pendulum must depend on the force by which it is attracted. The first experiment of this kind was made in 1672, by M. Richer, who found that a pendulum clock, which indicated time correctly at Paris, lost 2 minutes 28 seconds daily at Cayenne; and numberless experiments of a similar kind, have since been made in various other places, and have all been attended with like results.

† 3. The principle on which the spheroidal figure of the Earth depends is the same as that by which, if a bunch of keys be suspended by a cord, and be made to turn rapidly round, they will diverge from one another; or by which the parts of a mop, if it be whirled round in a similar manner, spread out in every direction. In like manner, if a very thin hoop be made to revolve rapidly, by means of machinery, about a diameter, it will become flattened in a considerable degree about the extremities of that diameter, and protuberant at the parts midway between them. These facts depend on the general principle mentioned in the last note, that bodies in motion tend to move in a straight line.

A popular objection against the Earth's motion is, that, if there were such a motion, a body allowed to fall by its own weight would not reach the ground exactly below the point from which it fell, but considerably to the west of it; and that a body projected perpendicularly upward, would not fall again, as it is observed to do, at the place from which it ascended, but, in like manner, at a distance to the west proportioned to the time of its flight, in consequence of the Earth's eastward motion during that time. This objection is of no weight. When a vessel is sailing on a smooth sea, a stone dropped from the top of the mast strikes the deck exactly below the point from which it fell; and a stone dropped from a vehicle in motion, is seen to move as rapidly forward as the carriage, till it reaches the ground, when it is instantly left behind. In both these cases, the falling body, besides being attracted downwards, has the same tendency to move forward as the hand that drops it; and the same principle is applicable in respect to the Earth's motion.

in the same way; and they account for all the phenomena in the simplest and most satisfactory manner.*

7. As the Earth's rotation on its axis produces day and night, so its revolution in its orbit occasions the vicissitudes of the seasons. The axis is inclined to the plane of the orbit at an angle of 66° 32′, and always points in the same direction, or is parallel to the same straight line. By this means, the northern hemisphere is so situated on some occasions, and the southern on others, as to be subjected in a greater degree to the influence of the Sun; while, at other times, both receive equal degrees of heat and light. In the first case, the northern hemisphere will have summer; in the second, the southern; and in the third, it will be spring or autumn over all the world.†

8. The heat of summer is chiefly occasioned by the Sun's elevation above the horizon; and in the higher

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* 4. The strongest proof of the Earth's motion in its orbit, is derived from what is called the *aberration of light*. An explanation of this, however, is unsuitable to a work like the present.

† 5. To illustrate this, let a flat substance, with a circle of considerable magnitude described on it, be raised at one side, so as to be inclined to the horizon, at an angle of about 23½°; and place a candle a little above its centre. Then let a ball suspended by a piece of thread, be carried gently round the circumference of the circle, the point of suspension representing the north pole; the point diametrically opposite to it, the south pole; and a circle midway between them, the equator. While the ball is thus moving round the circle, let it be made to revolve by twisting the thread; and both the annual and diurnal motions of the Earth will be correctly represented. Now, when the ball is at the lowest point of its course, it will be seen that, while it revolves on its axis, the north pole, and a space round it representing the northern frigid zone, will be constantly in the enlightened hemisphere, or will have perpetual day; while the south pole and the southern frigid zone will have perpetual night. It will be seen also, that any place on the equator will be equal periods in the enlightened and dark hemispheres. From this it appears, that at the equator the day and night are equal, which is evidently the case there at every period of the year. Any place in the northern hemisphere, between the equator and the frigid zone, will continue in the enlightened hemisphere longer than in the other, and will consequently have its day longer than its night; while exactly the reverse will be seen to take place in the like portion of the southern hemisphere. This position will represent our summer solstice, which happens at the twenty-first of June. Let the ball now be moved towards the right hand, and each of the spaces having perpetual day or night will diminish; while at the same time, the lengths of the days and nights in the other parts of the northern and southern hemispheres, will become gradually less unequal; and when it has removed to its extreme position towards the right hand, it will be seen that the circle separating the enlightened and dark hemispheres will pass from pole to pole, making the days and nights equal over all the earth, except at the north pole where perpetual day is then terminating, and at the south pole where it is beginning. This position represents the autumnal equinox, which happens on the twenty-second or twenty-third of September; and, by continuing the motion, the other seasons of the year may be illustrated in a similar manner. In this illustration, it will also be seen, that at our summer solstice, the Sun will be vertical, or exactly over head, at the tropic of Cancer, the line joining his centre and that of the Earth cutting the surface in that circle. In like manner, it will appear, that at our winter solstice, he is vertical at the tropic of Capricorn; while at the equinoxes, he is vertical at the equator.

latitudes, it is much increased by the great length of the days.*

Questions on Section V.

1. What is the Earth's diurnal motion? Its annual one?
2. What effect does the Earth's rotation produce on the appearances of the heavenly bodies? Give instances of similar appearances. How else might the same appearances be accounted for? Why is it more reasonable to suppose them to be occasioned by the Earth's rotation? Why can no inconvenience result from such a motion?
3. How is the Earth's rotation proved by the motions of pendulums? Where do they move most rapidly? Where most slowly?
4. How is the same opinion confirmed by the figure of the Earth?
5. From what analogy do we infer that the Earth revolves on its axis?
6. What is the nature of the arguments in support of the Earth's motion round the Sun? How may objections against them be answered? How does this theory account for the phenomena?
7. What is occasioned by the Earth's revolution round the Sun? How does the Earth's axis lie in respect to the plane of the orbit? How does it point? What is the effect of this, in respect to the Sun's influence on different parts of the Earth? What seasons are thus produced?
8. How is the heat of summer chiefly occasioned? What adds to the effect in the higher latitudes?

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* 6. The heat is rendered greater by an increase of the Sun's altitude, for two reasons: first, because the rays of the Sun then pass through a smaller portion of the atmosphere, and on that account fewer of them are dissipated or intercepted; and secondly, because more of those that do pass through the atmosphere, fall on any given space when the Sun is high than when he is low. To illustrate the first of these, describe two circles, of very nearly the same size, from the same centre; and let the interior one represent the Earth, and the space between them the atmosphere. Then, through the highest point of the interior one, draw several straight lines to represent rays arriving from the Sun at different elevations; and it will be seen, that those which fall most nearly perpendicularly, pass through a smaller portion of the air than those which are more nearly horizontal. The second reason may be simply illustrated, by means of a ring and either a candle or the Sun. If the ring be held horizontally over a table and near it, with the candle right above it and at a considerable height, the rays which pass through will form a circle on the table as large as the interior of the ring. If now the candle be carried to one side so as to be at the same distance, but much lower, and the ring be inclined so as still to allow as many rays as possible to pass through it, the rays will now form an oval as broad as the ring, but much longer. Hence, in this case, the same quantity of rays is spread over a much greater space, and must therefore produce a proportionally less effect than in the former case. Now, as the Sun is comparatively high in summer, and low in winter, these reasons explain the difference of temperature at those times. The same causes also account for the great difference between the heat at noon and in the morning or evening; and the first reason affords an explanation of the fact, that we can look at the Sun at his rising or setting, without much inconvenience, while our eyes are overpowered by his glare when he is high on the meridian. It is found that the Earth is nearest the Sun at the first of January, and most remote at the first of July. This is known from the difference in the Sun's apparent magnitude and velocity at these times. At the former date, his apparent diameter is 32′ 35½″; and, at the latter, only 31′ 31″. His velocity, also, is so much greater in winter, that the time between the vernal and autumnal equinoxes is about 7 days 17 hours longer than the remaining or winter period of the year. From this cause, the Sun's direct influence in producing heat at the first date, is about one fifteenth part greater than at the latter. The effect thus produced, however, is so small as not perceptibly to modify the effects arising from the other causes already mentioned. It may perhaps, indeed, render the extremes of heat and cold less in the northern hemisphere, and greater in the southern, than they would otherwise be; but even this effect must be counteracted in a great degree by the inequality of the lengths of summer and winter.

VI.—MARS.

1. MARS is distinguished from all the other planets by his red, fiery appearance. This is occasioned by the great density of his atmosphere, which gives passage only to the strong red rays of light.*

2. Mars revolving, like the other superior planets, in an orbit exterior to that of the Earth, is sometimes in the same direction as the Sun, or in *conjunction* with him; and sometimes in exactly the contrary direction, or in *opposition*. In the former case, his distance from the Earth is nearly five times as great as in the latter; and hence, he appears much larger about the time of his opposition, than at other times.

3. This planet is also remarkable for bright spots round his northern and southern poles, particularly the latter. These are found to vary in appearance, each being largest and brightest at the return of summer to the hemisphere

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Questions on the Notes to Section V.

1. Give illustrations of the twofold motion of the Earth.
2. Give the law respecting bodies moving without suffering any external resistance. What would be the effect of this principle on bodies at the Earth's surface, if they were not attracted towards the centre? What prevents bodies from being thrown off from the Earth's surface? How is the effect of the Earth's attraction diminished? Whether will bodies near the equator, or those more remote from it, tend to the centre with more force? When was the first experiment of this nature made with a pendulum, and by whom? How much time did a clock lose daily at Cayenne, which went correctly at Paris?
3. Give illustrations of the principle on which the spheroidal figure of the Earth is produced by its motion. On what general principle do these facts depend? What popular objection is brought against the supposition, that the Earth revolves on its axis? Give familiar instances of facts that will tend to obviate this objection. Give an explanation of these facts.
4. Illustrate, by means of a candle, the change of seasons, and the variations in the lengths of the day and night.
6. For what two reasons is the heat rendered greater by an increase of the Sun's altitude? Illustrate the first by means of two circles, and the second by means of a ring. What facts, respecting the difference of the heat at different times of the day, may be explained in the same manner? When is the Earth nearest the Sun, and when most remote? How is this known? What are the Sun's apparent diameters at these times? How much longer is our summer half-year than our winter one? How much greater is the Sun's direct influence in producing heat, at the first of January than at the first of July? Why does not this circumstance render our winter warmer than our summer?

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* In the same manner, when the heavenly bodies are seen near our horizon, they assume a ruddy appearance; because, while the strong red rays are able to penetrate through the great mass of atmosphere and vapour, through which they are obliged to pass before they arrive at the eye, the violet and other weaker rays are intercepted, and prevented from mingling with the stronger, so as to form the brilliant white appearance which the bodies present when they have attained a high altitude. The density and extent of the atmosphere of Mars, are also proved from the fixed stars losing their brightness as he appears to approach them, and becoming invisible before any part of his disk is interposed between them and the eye of the observer.

in which it is contained, and then gradually diminishing. On this account, and from their positions, they are thought to be snow accumulated during the long winter that reigns in his polar regions.

Questions on Section VI.

1. How is Mars distinguished from all the other planets? How is this occasioned?
2. When is a planet said to be in *conjunction* with the Sun, and when in *opposition*? How much more remote is Mars from the Earth at his opposition, than at his conjunction? What effect does this produce on his appearance?
3. What remarkable spots are seen on this planet? What variations in appearance do these present? What are these thought to be?

VII.—VESTA, JUNO, CERES, AND PALLAS.

1. The small planets, Vesta, Juno, Ceres, and Pallas, have been supposed to be fragments of a larger planet, burst at a remote period, in consequence of some internal convulsion. This is inferred from the nearness of their orbits to one another; from their small magnitudes; from the great eccentricities and inclinations of their orbits; and from the large space between the orbits of Mars and Jupiter seeming to require one planet to correspond with the order observable in the rest of the system.*

2. Ceres and Pallas are remarkable for their large dense atmospheres; that of the former being perceptible at the height of nearly 700 miles above its surface, and that of the latter at the height of almost 500. The others have also atmospheres, but not so large.

3. Pallas and Juno are remarkable for the great eccentricities of their orbits, which are such that the halves of

Questions on the Note to Section VI.

What appearance do the heavenly bodies exhibit when seen near our horizon? How are the density and extent of the atmosphere of Mars proved?

* It has also been supposed, that the meteoric stones which have on many occasions fallen to the Earth, are fragments of the same planet, which have been moving about through space, till they have come so much within the sphere of the Earth's attraction, as to have entered its atmosphere, and fallen to its surface. The orbits of Ceres and Pallas intersect one another, a phenomenon which is quite singular in the solar system; and yet these planets, from their positions in their orbits, are never near each other.

Questions on the Note to Section VII.

What has been supposed respecting the origin of meteoric stones? What singular phenomenon is exhibited by the orbits of Ceres and Pallas? Are these planets ever near each other?

them which are nearest the Sun, are described in little more than half the time that is occupied in describing the remote halves.

Questions on Section VII.

1. What has been supposed respecting the origin of Vesta, Juno, Ceres, and Pallas? From what four reasons has this been inferred?
2. For what are Ceres and Pallas remarkable? What are the heights of their atmospheres? Have Vesta and Juno atmospheres?
3. For what are Pallas and Juno remarkable? In what times are the halves of their orbits which are nearest the Sun described, compared with the times occupied in describing the other halves?

VIII.—JUPITER.

1. JUPITER, as seen from the Earth, is the largest and brightest of all the planets, except Venus. From his great size, and his swift rotation on his axis, his equatorial diameter is more than 6000 miles longer than his polar.

2. When he is examined with a telescope, he is found to be accompanied by four satellites, or small stars, which appear in nearly a straight line, in the direction of his equator. Several belts or bands are also observed on his surface, in the same direction. These are variable in number and appearance, sometimes four or five being visible, and sometimes many more; some of them also are dark, and others luminous. These are probably occasioned by clouds in his atmosphere, formed into strata by trade-winds blowing round his equatorial regions; the dark belts being clouds, and the luminous ones the body of the planet seen between them.

3. The appearance of the heavens, as seen from this planet, must differ, in a striking degree, from the appearance which they exhibit to us. For the most part, two of his moons are above the horizon of any particular point of his surface at the same time; and so rapidly does the first or nearest of them change its appearance, that it varies from being a small crescent to its greatest size in fourteen or fifteen hours. In this body, also, little opportunity will be afforded for observing the Earth and the other planets whose orbits lie within his, in consequence of their comparative smallness, their great distances, and their continuing above his horizon only a very short time before sunrise and after sunset; and hence it is proba-

ble, that several of them can never be seen from this planet.*

4. In consequence of the great quantity of matter contained in Jupiter, bodies will weigh between two and three times as much at his surface as they do at the surface of the Earth.

Questions on Section VIII.

1. What is the appearance of Jupiter as seen from the Earth? What difference is there between the lengths of his polar and equatorial diameters? Whence does this arise?
2. How do his satellites appear to be situated, when viewed with a telescope? How are his belts situated? What varieties of appearance do these present? What is probably their nature?
3. How many of Jupiter's moons are generally above the horizon of any particular place? In what time does the first change from being a small crescent to its greatest size? What planets are so situated as to be seen with difficulty from this planet?
4. How many times more will bodies weigh at the surface of this planet, than at the surface of the Earth?

IX.—SATURN AND URANUS.

1. SATURN, on account of his great distance, never appears large, as seen from the Earth; and his colour is somewhat reddish, in consequence, as is supposed, of his being surrounded with a dense atmosphere. When viewed with a telescope of sufficient power, he exhibits not only seven satellites, but also two large luminous rings. These are separated from the body of the planet and from one another, and they lie in the plane of his equator.†

* Thus, in the most favourable circumstances, Mercury sets only 7 or 8 minutes after the Sun, Venus about 13, the Earth 19, Mars 28, and the four new planets about 50 minutes. The magnitude of Venus also, as seen from Jupiter, is scarcely a fiftieth part of its magnitude as seen by us; and that of the four new planets, not half as much.

† The distance of the inner side of the interior ring from the centre of Saturn, is about 70,000 miles; its breadth, 20,000; the distance between the rings, about 3000; the breadth of the exterior ring, about 7000; and its thickness, about 4500. Hence, if circles be described on paper, proportioned to these dimensions, and to the diameter of Saturn; and if the spaces between the rings, and between the interior one and the body of Saturn, be blackened, the remaining white spaces will represent Saturn and the two rings. When the plane of the rings is turned towards the Earth, the only trace of them that can be seen even by the most powerful telescopes, is a luminous line extending on both sides beyond the surface of the planet. The rings are found to revolve in about ten hours and a half, in the same manner as the rim of a wheel. This time is little more than that in which Saturn revolves on his axis, and is about the period in which a satellite would revolve at the mean distance of the rings.

The uses of these curious appendages are very doubtful. From their lowness, they can never be seen from the polar regions of Saturn; and from their being frequently eclipsed by him, and frequently eclipsing parts of his surface, they do not seem to be of much service in supplying him with light. They must often present,

2. URANUS, the remotest of the planets at present known, is seldom visible to the naked eye, on account of the smallness of his apparent magnitude. His satellites are said to revolve in a direction contrary to that of all the other heavenly bodies, and in a plane which is nearly perpendicular to the ecliptic.

3. In consequence of the vast distance of this planet from the centre of the system, the other planets with which we are acquainted, must always appear so nearly in the same direction with the Sun, as to rise but a very short time before him in the morning, and to set very soon after him in the evening. Thus Saturn, which is most favourably situated for being seen, will never be more than about a twelfth part of the time of a diurnal rotation of Uranus before the Sun, or behind him. Most of the planets also, from their extreme distances, will appear excessively small. His own moons, however, and the fixed stars, will at all times adorn his sky by night; and planets may be visible from him, which we have thus far been unable to discover.

Questions on Section IX.

1. What is the appearance of Saturn, as seen from the Earth? What is he supposed to be surrounded with? What does he exhibit when viewed with a powerful telescope? How are his rings situated in respect to the planet, and to one another?
2. How can Uranus be seen from the Earth? How are his satellites said to revolve?
3. Give an account of the celestial appearances, as seen from this planet.

X.—THE MOON.

1. *Motions, &c.*—The Moon, as well as the Earth, revolves round the Sun in our year. She is also constantly moving round the Earth, or rather round the common centre of gravity of herself and the Earth, at the distance

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however, splendid spectacles to many parts of his surface; and they may perhaps afford residences to numerous inhabitants.

Questions on the Note to Section IX.

How may Saturn and his rings be represented in a figure? When do the rings almost disappear? In what time do they revolve, and in what manner? What is the relation between this time and the time in which Saturn revolves on his axis? What satellite would revolve in the same time?
From what parts of Saturn can these rings never be seen?

of nearly 240,000 miles,* and completing her revolution in the average period of about 27 days 7¾ hours.† In this latter period, she performs a rotation round her own axis, as is shown by her always presenting, with a slight variation, the same face to the Earth.‡ In consequence, however, of her own progressive motion along with the Earth about the Sun, the length of her solar day, instead of being 27 days 7¾ hours, is increased to the period of about 29 days 12¾ hours, the difference being requisite to bring her to that position in which the same face will

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* 1. Though this space is so small, compared with the distances of the primary planets, a body, moving at the rate of 10 miles per hour, would occupy, in passing over it, very nearly two years and three quarters.

† 2. The motions of the Earth and Moon round the Sun may be thus illustrated: Place a candle on the middle of a round table, and taking two balls of the same material, one representing the Earth, having its diameter nearly four times that of the other; fix them on opposite ends of a strong wire, many times longer than the diameter of the greater. Then suspend these balls horizontally by means of a wire or cord fixed to the other wire near the larger ball, and carry the whole slowly round the edge of the table, causing the two balls to revolve round their point of suspension as uniformly as possible, and with such velocity as to cause them to perform about thirteen revolutions, while the whole is carried once round the candle. Then, if the motion be commenced when the smaller ball, representing the Moon, is between the greater and the candle, a position which corresponds to new moon, it will be seen that, when the balls have completed a revolution, so that the wire is in a position parallel to its former one, the smaller ball will not be between the greater and the candle, but that the motion must be continued for some time before it will be so situated. In her eastward motion among the fixed stars, the Moon appears to describe a space of about 13° each day at an average, or about her own breadth each hour.

‡ 3. This may be familiarly illustrated by a person turning slowly round, and holding a ball before him in such a manner that the same side of it may he always towards him; as it will be obvious, that it must perform a single rotation in the same time in which he turns completely round, each side of it being, during that time, turned in every direction. The same may also be correctly illustrated by means of the balls referred to in the foregoing note.

The period above mentioned, 27 days 7¾ hours, is the average time employed by the Moon, as seen from the Earth, between two successive conjunctions with a fixed star, and is called a periodic month: and as the difference between this period and a year is to a year, so is this period to 29 days 12¾ hours nearly, which is called a synodic month.

The Moon's rotation on her axis, like that of all the other heavenly bodies, being perfectly uniform, while her motion in her orbit is subject to some inequality, it will be evident, on a little consideration, that when her velocity exceeds its mean quantity, a small part of the eastern limb will disappear, while an equal portion of the side which is ordinarily invisible towards the western limb will be seen; and the contrary will take place when her velocity is less than its mean quantity. By this means, in the course of a month she will appear to have a slight motion backward and forward like a balance; and hence, this appearance is called her *libration in longitude*. Another appearance of a similar kind is called her *libration in latitude*. This is occasioned by her axis not being perpendicular to the plane of her orbit,—a circumstance which, according to her place in the orbit, occasions sometimes one of her poles and sometimes the other to be a little removed from our view. When the Moon is newly risen, also, we see, in consequence of our elevation on the Earth's surface, a little more at the upper or western limb, and less at the eastern, than we can when she has attained a considerable elevation; while a little before setting, the contrary takes place. This is called the *diurnal libration*. From all this it will appear, that a vast proportion of one hemisphere is continually turned towards the Earth, while an equal space on the opposite side is for ever concealed from our view.

again be presented to the Sun. This last period is also the time that elapses between one new or full moon, and the following.

2. *Magnitude, &c.*—The Moon's diameter is about 2160 miles. Hence, the Earth's surface is about 13 times as large as that of the Moon; its bulk, about 49 times as great as hers; and, being denser, the Earth contains about 68½ times as much matter. In consequence of the Moon's motion in an elliptical orbit, her apparent diameter is about one seventh part, and her surface about one fourth part greater, when she is at the least distance from the Earth, than when she is most remote.

3. *Phases.*—As the Moon derives her light from the Sun, the side next that luminary is always enlightened, and the other dark. Hence, more or less of the Moon is visible to us, accordingly as, in consequence of her situation at any particular time, a greater or less portion of the enlightened hemisphere is turned towards the Earth; and from this cause, her various phases arise. At *new moon*, or, as it is also called, *change*, the Moon is in the same direction as the Sun, and is then invisible: but at *full moon*, she is in opposition to the Sun, rising when he sets; and she then appears full and round.*

4. *Inclination.*—The orbit of the Moon is inclined to that of the Earth, at an angle of about five degrees.

5. *Eclipses.*—When the Moon, in moving round her orbit, passes so directly between the Sun and Earth, as to conceal any part of the Sun's disk at a particular place on the Earth, the Sun is said to be eclipsed at that place; and when the Moon, at the time of her opposition to the Sun, falls into the Earth's shadow, she is herself eclipsed. From this it follows, that the Sun can be eclipsed only at the time of new moon; and the Moon, only at the time of full moon. On account of the inclination of the Moon's orbit to that of the Earth, eclipses take place but seldom. If the planes of the Earth's and Moon's orbits coincided, the Sun and Moon would each be eclipsed once every month.

* 4. This may be illustrated by a person having a ball with one hemisphere white and the other black, and carrying it round him so as to keep the white side always directed towards some remote object supposed to represent the Sun. Then, when the ball is between the person and that object, none of the white or enlightened side will be visible; but when it is on the opposite side, he will see the entire enlightened hemisphere. The former position will correspond to new moon, the latter to full moon; and other intermediate positions will illustrate the other phases.

6. *Mountains, &c.*—The surface of the Moon, when carefully examined with a telescope, is found to be full of inequalities, such as deep caverns and high mountains. Some of the latter, according to the most accurate measurements, appear at least to equal the highest mountains on the Earth. Appearances have also been observed which seem to indicate the existence of volcanoes.

7. *Celestial Phenomena.*—Seen from the Moon, the celestial phenomena are nearly the same as they appear to us, with the exception of those presented by the Earth, some of which are very remarkable. The Earth will there appear to be a luminous body, about thirteen times as large as the Moon appears to us; and while the fixed stars, and most of the planets, will continue visible for nearly fourteen days, and invisible for an equal period, the Earth will be always visible to nearly half the Moon's surface, and always invisible to an equal portion on the opposite hemisphere. In the parts also to which the Earth is visible, its elevation and direction are always nearly the same; the only considerable change in its appearance arising from its having phases exactly similar to those exhibited to us by the Moon.*

Questions on Section X.

1. In what time does the Moon revolve round the Sun? Round what other centre does she move, and at what distance? In what time? What is the time of her rotation? How is this known? What is the length of her solar day? Why is it longer than the time of her rotation? What period elapses between one new or full moon and the following?
2. What is the Moon's diameter? How many times greater is the Earth's surface than the Moon's? Its bulk? Its quantity of matter? How much are the Moon's apparent diameter and surface greater when she is nearest the Earth than when she is most remote?
3. Whence does the Moon derive her light? What side of her is enlightened? What occasions the different appearances under which we see the Moon? How is she situated at new moon? How at full moon?
4. At what angle is the Moon's orbit inclined to the Earth's?
5. How is an eclipse of the Sun occasioned? Of the Moon? What are the situations of the Sun, Moon, and Earth, on such occasions? At what times can eclipses happen? Why are the Sun and Moon not eclipsed each month? In what circumstances would this take place?
6. What appearances does the Moon's surface exhibit, when examined with a telescope? What seem to be the heights of some of the lunar mountains? What mountains of a particular kind are thought to have been seen on her surface?
7. Which of the celestial phenomena are nearly the same as seen from the Moon and Earth? How large will the Earth there appear to be? How long will the stars appear visible at once? What great difference is there with respect to the Earth? In the parts in which the Earth is visible, what is remarkable respecting its apparent position? What is the only considerable change in its appearance?

* 5. To the middle point of the hemisphere which is turned towards us when the Moon is about her mean distance, the Earth will appear exactly over-head, except in respect to the slight deviation produced in the course of the month by

XI.—SATELLITES OF JUPITER, &c.

1. The first, or nearest of Jupiter's satellites revolves round him in 1 day 18½ hours nearly, and the most remote in about 16 days 16½ hours; the first at a distance a little greater than that of the Moon from the Earth, and the other at about five times the Moon's distance.

2. The nearest of Saturn's satellites revolves round him in 22½ hours, at less than half the Moon's distance; and the most remote in 79 days, at nearly nine times the Moon's distance.

3. The periods of the nearest and most remote of those of Uranus, are 5 days 21½ hours and 108 days respectively; the former at nearly the Moon's distance, and the latter at nearly seven times as much.

4. From certain regular changes in the brilliancy of the satellites of Jupiter, it is inferred, that they revolve on their axes in the same time in which they perform

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libration. At any particular point between this and the edge of the disk, the Earth will be seen constantly at the same altitude and on the same point of the compass, except the slight change arising from the cause above mentioned. Thus, at one place the altitude will be 45°, and the direction south-west; at another, the altitude will be 30°, and the direction east, &c.

About the extremity of the surface visible to us, the apparent motion of the Earth arising from libration will be more remarkable than elsewhere; at [illegible] the period of the Moon's revolution, the Earth will slowly approach the horizon, and then recede from it; and while in some places it will rise and set entirely, in others only part of its disk will sink below the horizon, and in some again only part of it can ever be seen. Hence, if there be inhabitants in the Moon, we can readily conceive what interest those on the remote side, will feel on seeing the Earth; and long journeys or voyages may be undertaken for the purpose of seeing the great pale luminary, which to their view will appear thirteen times larger than the Sun. The mathematical student will readily see, that, while there are the same means of determining the latitudes of places in the Moon as with us, the observed position of the Earth, after some corrections, will afford an easy mode of determining their longitudes.

Questions on the Notes to Section X.

1. In how long time would a body, moving at the rate of 10 miles an hour, pass in a straight line from the Earth to the Moon?
2. Illustrate the motions of the Earth and Moon, by means of balls and a candle. What average space does the Moon appear to describe each day among the stars? What each hour?
3. How may the Moon's rotation on her axis be illustrated?
   What is meant by a periodic month? How is the length of the synodic month calculated?
   What is the nature of the Moon's motion on her axis? Is her motion in her orbit uniform? Explain, from this, her libration in longitude. Explain her libration in latitude. Her diurnal libration. What is the general conclusion from these considerations?
4. How may the phases of the Moon be illustrated?
5. At what point of the Moon will the Earth always appear almost over-head? What apparent motion will the Earth have about the extremity of the surface visible to us?

their revolutions in their orbits; and the same has been observed respecting the most remote of the satellites of Saturn. Hence, since the same is found to hold respecting our Moon, it seems reasonable to conclude, that all the satellites are placed in similar circumstances, and that each of them presents always the same side towards its primary.

5. The satellites are often eclipsed by falling into the shadows of the primaries. The eclipses of Jupiter's satellites are of great utility in determining the longitudes of places on the Earth's surface.* By means of these, also, the velocity of light has been determined. When Jupiter is nearer the Earth than his average distance, an eclipse appears to commence or terminate sooner than the computed time; while the reverse takes place when he is at the remoter parts of his orbit. By this means, it is found that light occupies about eight minutes and a quarter in describing a line equal to the Earth's distance from the Sun, and that it therefore moves with the immense velocity of about 190,000 miles, or nearly eight times the Earth's circumference, every second of time.

Questions on Section XI.

1. In what times do the first and fourth satellites of Jupiter perform their revolutions? What are their distances from him?
2. In what times do the nearest and most remote of Saturn's satellites revolve around him? At what distances?
3. What are the periods of the nearest and most remote of the satellites of Uranus? What are their distances from him?
4. What has been inferred respecting the rotations of the satellites of Jupiter? On what grounds has this been inferred? Has the same been observed respecting any other satellite? What inference do we naturally draw respecting other satellites?
5. How are the satellites eclipsed? What important practical advantage is derived from the eclipses of Jupiter's satellites? What has also been determined by the same means? How is the velocity of light found by this means? How long is light in describing a line equal to the Earth's distance from the Sun? What is its velocity per second?

XII.—COMETS.

1. COMETS are bodies which occasionally visit our part of the solar system, for a short time; and then recede to

* To find the longitude of a place by means of the satellites of Jupiter, we observe the precise time at which an eclipse of one of them begins or ends at the place: then, by means of calculation, the time is determined at which the eclipse begins or ends at Greenwich: the difference of these times reduced to degrees, at the rate of 15° for an hour, gives the longitude of the place. The times at which the eclipses begin and end at Greenwich, are given in the publication called the *Nautical Almanack*; and the principle on which the time is reduced to degrees, will be explained hereafter in the problems on the Globes.

vast distances, so as to become invisible. It seems most probable, that they revolve in very eccentric orbits, having the Sun in one of the foci. These orbits are inclined to the Earth's at various angles, so that some of them are nearly perpendicular to it; and, while the planets all move eastward, the comets move in every possible direction.

2. The appearances of comets are very various. Most of them, however, have trains or tails, which seem to be like luminous vapour, and which increase in length and brilliance as the comets approach the Sun. Each of them has also a solid part, called a *nucleus*, which is of various magnitudes in different comets, but is generally small.

3. The returns of some comets have been accurately predicted. One of the most remarkable instances of this is afforded by the comet which appeared, according to the prediction of Dr. Halley, in 1759. This prediction he made because he found reason to conclude, that the same comet had appeared, at intervals of seventy-five or seventy-six years, in 1456, 1531, 1607, and 1682. Hence it may be expected again to appear in 1835. The comet whose elements were determined by Professor Encke, has a period of three years and three tenths, and was in its perihelion about the middle of January, 1829.

Questions on Section XII.

1. What are comets? What is probably the nature of their motions? How are their orbits inclined to the Earth's orbit? In what directions do comets move?
2. What is generally the appearance of comets? What is the nucleus of a comet? Is the nucleus large?
3. Who predicted that a comet would appear in 1759? What seems to be the period of that comet? When may it be expected again to appear?

XIII.—FIXED STARS.

1. *Name, Divisions, &c.*—The fixed stars are so called from their always retaining the same situations in relation to each other, while the relative positions of the planets and comets are undergoing perpetual changes. For the sake of distinction, the stars have been distributed into groupes called *constellations*. These are named after animals, or other objects, to which the groupes, in some instances, bear a resemblance; and the figures of these objects are generally painted on celestial globes, and maps of the stars. Of the constellations, twelve are in the zodiac, a zone extending 8^0 on each side of the ecliptic; thirty-four are north of it; and forty-seven, south of it.

2. The Latin and English names of the zodaical constellations are, *Aries*, the Ram; *Taurus*, the Bull; *Gemĭni*, the Twins;—*Cancer*, the Crab; *Leo*, the Lion; *Virgo*, the Virgin;—*Libra*, the Balance; *Scorpio*, the Scorpion; *Sagittarius*, the Archer;—*Capricornus*, the Goat; *Aquarius*, the Water-bearer; *Pisces*, the Fishes.

3. The most remarkable of the northern constellations are *Ursa Major*, the Great Bear; *Ursa Minor*, the Little Bear; *Draco*, the Dragon; *Boötes*; *Corōna Boreālis*, the Northern Crown; *Hercŭles*; *Ophiūchus*, or *Serpentarius*, the Serpent-bearer; *Serpens*, the Serpent; *Lyra*, the Harp; *Cygnus*, the Swan; *Aquĭla et Antinŏüs*, the Eagle and Antinoüs; *Delphīnus*, the Dolphin; *Pegăsus*, the Winged Horse; *Andromĕda*; *Perseus*, with *Caput Medūsæ*, the Head of Medusa; *Cassiopeia*; *Cepheus*; and *Aurīga*, the Charioteer.

4. The principal southern constellations visible in Britain or Ireland, are *Orīon*; *Canis Major*, the Great Dog; *Canis Minor*, the Little Dog; *Piscis Austrālis*, the Southern Fish; and *Cetus*, a Sea Monster or Whale. The chief southern constellations not visible in these countries are *Crux*, the cross; *Centaurus*, the Centaur; and *Argo Navis*, the Ship Argo.

5. *Magnitudes.*—The stars visible to the naked eye, have been farther divided by astronomers into six classes, according to their brightness: the brightest being called stars of the first magnitude, the next stars of the second magnitude, &c.* Stars that can be seen only by means of a telescope, are called telescopic ones. The stars in the several constellations have also been denominated by the letters of the Greek alphabet; and, when they are exhausted, by those of the Roman; the brightest star in each being denoted by *a*, the next by *b*, &c.†

* 1. It is not to be understood, that all stars of any particular nominal magnitude are of precisely the same apparent brightness. There are, in fact, almost as many varieties in this respect as there are stars; and hence, several stars are marked as being between two magnitudes. Thus Procyon, in Canis Minor, is marked 1. 2, to denote that it is of a magnitude intermediate between the first and second.

† 2. For the use of those who are unacquainted with Greek, the following list is given, containing the capital and small letters of the Greek alphabet, with their names, and the letters, or combinations of letters, to which they are respectively equivalent in Latin and English:

A, α, alpha, *a*; B, β or ϐ, beta, *b*; Γ, γ, gamma, *g*; Δ, δ, delta, *d*; E, ε, epsilon, *e* (short); Z, ζ or ς, zeta, *z*; H, η, eta, *e* (long); Θ, θ or ϑ, theta, *th*; I, ι, iota, *i*; K, κ, kappa, *k*; Λ, λ, lambda, *l*; M, μ, mu, *m*; N, ν, nu, *n*; Ξ, ξ, xi, *x*; O, ο, omicron, *o* (short); Π, π or ϖ, pi, *p*; P, ρ, rho, *r*; Σ, σ or ς, sigma, *s*; T, τ, tau, *t*; Υ, υ, upsilon, *u*; Φ, φ, phi, *f* or *ph*; X, χ, chi, *ch*; Ψ, ψ, psi, *ps*; Ω, ω, omega, *o* (long).

6. *Distances.*—The distances of the fixed stars are great almost beyond conception. Astronomers have failed, indeed, in determining them; and have merely arrived at the conclusion, that the nearest of the stars is probably above 80,000 times more remote from the solar system, than the Sun is from the Earth.*

7. *Nature.*—There seems to be strong reason to believe, that the fixed stars are large luminous bodies like the Sun, and of the same nature. From their vast distances, it is evident that they cannot shine by reflecting the rays of the Sun, and that they cannot be bodies of the comparatively small dimensions of the planets of our system; as, on either supposition, they could scarcely be visible to us, and certainly not with the beautiful brilliance which they display. Hence, it has been supposed, that they may be the centres of systems like our own, containing various planets, which may afford residences for numberless animated beings.

8. *Changes in the Stars.*—While, in the vast majority of instances, the stars present always the same appearances, yet various changes are constantly taking place among them. New stars have, on different occasions, appeared; while some that were formerly seen, are now invisible; and some that are constantly visible, undergo periodical changes in their apparent magnitudes.† The most probable explanation of the periodical changes, seems to be, that the stars, in which they are observed, have some parts of their surfaces more luminous than others; and that, by revolving on axes, they present the

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* 3. So enormous is this distance, that a body moving at the rate of 13 miles per minute, which, as has been already mentioned, is about the velocity of sound, would be 1,128,000 years in describing it; and a cannon ball moving with a velocity of 20 miles per minute, or nearly 30,000 miles per day, would require about 700,000 years to perform the same journey. Even light, which has a greater velocity than any other substance at present known, would occupy nearly a year and a quarter in passing over this space; so that if the star were annihilated, its rays, for a year and a quarter after its final catastrophe, would still continue to reach us, and would make it appear in its wonted place.

† 4. Thus, a new star appeared 120 years before Christ, and another in 1572. The latter, which was in Cassiopeia, is also thought to have appeared in 945 and 1264, thus becoming visible at periods of 318 or 319 years. This star, in 1572, became as brilliant as Sirius or even Venus, and was seen by day. It at length began to lose its splendour, and became invisible at the end of sixteen months from its first appearance. Algol, in the head of Medusa, changes from the second to the fourth magnitude, and back again, in about two days twenty-one hours; and, of this time, it is about two days seven hours of the second magnitude. The star θ of the Whale changes from the second magnitude, disappears, and again attains the same magnitude, in the period of three hundred and thirty-four days; and many other stars present similar appearances.

brighter and darker parts alternately to our view. The appearance of new stars, and the disappearance of old ones, seem to arise either from some great and permanent changes in the stars themselves, or from rotations performed in very long periods.

9. *Number of the Stars.*—When we look at the sky in a clear night, we conceive the number of the stars which are visible, to be almost infinite. This, however, arises from our viewing them confusedly; and the deception is removed, if we count those which we see in any limited space, as their number is found to be much less than we are led to expect. In consequence of the vapour, indeed, and of the mass of atmosphere near the horizon, there are rarely more than a thousand stars visible to the naked eye at once; and all that it can see in the entire heavens, amount to scarcely three thousand. The telescope, however, has discovered myriads which the naked eye is unable to distinguish, and every successive improvement that it has received has shown more; so that the entire number seems far to exceed any thing that man has the means of ascertaining.

10. *Nebulæ.*—In various parts of the heavens, there are spots, which have a whitish or cloudy appearance, and which are thence called *nebulas.* From an examination of these with powerful telescopes, it seems probable, that, in general, the appearances which they exhibit are occasioned by the blended light of almost innumerable stars, placed at a vast distance, and probably bound together by mutual attraction, so as to form a dependent and connected groupe.

Questions on Section XIII.

1. Why are the fixed stars so called? How have they been divided, and why? Whence do the constellations get their names? What is the zodiac? How many constellations are in it? How many north of it? South of it?
2. Name, and show on the celestial globe, the first three zodaical constellations. The second three. The next three. The last three.
3. Name, and show on the globe, some of the principal northern constellations.
4. Name and show, in like manner, the principal southern constellations.
5. Into what six classes have the stars visible to the naked eye been divided, and on what principle? In what other way have the stars been denominated?
6. Are the distances of the fixed stars great? Have they been determined? At what conclusion have astronomers arrived on this subject?
7. What is supposed to be the nature of the fixed stars? Why can we not suppose them to shine by reflecting the rays of the Sun, or to be only as large as the planets of our system? What is the grand conclusion to which we are naturally led by these considerations?
8. What changes are, from time to time, taking place among the stars? What are the probable causes of these changes?
9. What is our first impression respecting the number of the stars, when we look at the sky on a clear night? Whence does this deception arise, and how is it

removed? How many can be seen by the naked eye in the entire heavens? Why cannot half of these be seen at once? How many can be seen at one time and place? What has the telescope done in this respect, and what has resulted from its successive improvements? What do we infer from this?

10. What are nebulas? What is the probable conclusion derived from an examination of these with powerful telescopes?

XIV.—UNIVERSAL ATTRACTION.

1. EVERY portion of matter with which we are acquainted, is attracted by every other, or has a tendency to move towards it. Mountains attract plummets suspended near them, and prevent them from hanging perpendicularly.* The Earth attracts the Moon, the Moon the Earth, the Sun the planets, and the planets the Sun and one another.

2. All bodies at the Earth's surface, tend, from the same cause, to move towards its centre; and this tendency constitutes their weight. This arises, not from any attractive power lodged in the centre more than in other parts of the Earth, but because a great mass of matter lies in that direction, without any in the opposite to counteract its effect; while, whatever lies on any side of the line passing through the centre, is prevented from causing any motion towards itself by an equal mass placed on the opposite side, so that the joint effect of both is still to cause bodies to have a tendency towards the centre.

3. All the motions of the bodies in the solar system, are produced by a due combination and adjustment of such an attraction, and of a projectile force originally im-

Questions on the Notes to Section XIII.

1. Are all stars of the same nominal magnitude equally bright? In what particular way are some stars marked?
3. How long would a body, moving with the velocity of sound, occupy in describing the least supposed distance between us and the nearest fixed star? How long would a cannon ball, moving at the rate of 20 miles per minute, occupy in passing over the same distance? In what time would light describe the same space? How long, if the nearest of the fixed stars were destroyed, would it appear to us in its wonted place?
4. Mention some of the times at which new stars have appeared. What is thought to be the period of one of these? Describe this one. What changes does Algol undergo, and in what times? What changes does θ of the Whale undergo, and in what period?

* 1. The magnitude of the Earth so vastly exceeds that of the largest mountain, that a plumb-line, in the circumstances above referred to, deviates from the perpendicular by only a few seconds. The mountain Schihallion in Scotland, by experiments made in 1774, under the direction of the Royal Society of London, caused a deviation of 5″·8. From calculations founded on this result, compared with the Earth's attraction, and on the magnitude and density of this mountain, it has been inferred, that the mean density of the whole Earth is nearly five times as great as that of pure water.

pressed upon each of them. Thus, a planet is attracted towards the Sun by a force, which, were its effect not counteracted, would cause it to fall to his body. It has also a motion in its orbit, or, as it is called a projectile force, which, if the Sun's attraction were suspended, would carry it forward with a constant velocity, in a straight line touching the orbit. Instead of thus receding, however, into infinite space, it is perpetually drawn off, by the Sun's attraction, from the rectilineal path, and caused to describe an elliptical orbit.*

* 2. Were the velocity in the orbit, or, which amounts to the same, the projectile force, much greater than it is, the attractive force would be insufficient to cause the body to move in an ellipse. In that case it would describe a parabola or hyperbola; and thus receding continually from the Sun, and losing the benefit of his influence, it would in all probability become unfit for both animal and vegetable life. If, on the other hand, the velocity were much less than it is, the planet would be brought so near the centre of the system as either to fall on some part of the Sun's body, or at least to be exposed to his influence in such a degree as to render it unfit to be a residence for animated beings. Even with the medium velocity, also, unless the direction of the motion were always nearly perpendicular, as it is found to be, to the line drawn from the planet to the Sun, the orbit would be an ellipse of great eccentricity, and the planet would be subjected to all the inconveniences arising from such an orbit. It may be farther remarked, that the attractive force is found to be inversely proportional to the square of the distance; and it can be shown mathematically, that were the law of variation of the force different from this, the planetary orbits could not retain their present forms and permanence. Nothing, therefore, can afford a stronger proof of design and intelligence in the structure of the system, than the accurate adjustment of these three elements, the law of the force, the velocity, and the direction, which all admit of infinite varieties; and a considerable change in any of which, in relation to a particular planet, would be fatal to the comfort, and perhaps even to the very existence, of its inhabitants.

On the general principles which have been here alluded to, it may be reasonably inferred, that the fixed stars must be in motion as well as the planets;—an opinion which also receives support from observation, as some appearances seem to indicate motions among them, which, though it may require many ages to make them sensible to us, in consequence of the vast distances of the stars, may yet be extremely rapid. The fixed stars, however remote, may be expected to attract one another; and thus, though the effect may be excessively small in consequence of their extreme distance, its ultimate tendency would obviously be, to cause them all to be collected into one vast mass, unless the effect of the attractive influence were counteracted by a projectile force impressed on each. Hence, each nebula may be a system composed of myriads of stars, completing their revolutions round the common centre of gravity of the nebula itself, in periods of time of which the ages that have passed since the creation of our planet, would form but an inconsiderable atom; and many of these vast systems may again be combined, to form another of still ampler and of inconceivable dimensions. According to this view, the stars of the universe are probably distributed into numerous vast systems, each of which is at such a distance from the rest, that, viewed from it, they appear, till examined with telescopes, to be merely nebulas; while the stars which are distinctly visible, all belong to the system in which the observer is placed.

Dr. Herschel supposed, and apparently with reason, that our Sun and system belong to a vast nebula, which extends around us to an immeasurable distance, and forms what is called the Milky Way, or the Galaxy. This is a broad track extending round the sky, and distinguishable by its whitish appearance. . . course lies through the constellations of Cassiopeia, Cygnus, Perseus, Andromeda, Gemini, and several others. If Dr. Herschel's opinion, above alluded to, be true, it is a curious analogy, that the numberless stars in this collection should be so placed as to form a zone of limited breadth, in the same manner in which the orbits of the planets in the solar system all lie in nearly the same plane.

Farther information on these interesting subjects will be found in Paley's Natural Theology, in several papers by Dr. Herschel in the Philosophical Transactions, and in various works on Astronomy.

Questions on Section XIV.

1. What mutual relation is there between all portions of matter with which we are acquainted? What effect have mountains on plummets suspended near them?
2. What tendency have all bodies at the Earth's surface? What does this constitute? Why are bodies attracted towards the Earth's centre?
3. By what two principles are the motions of the bodies in the solar system produced? What would be the effect of the Sun's attraction, if not counteracted? What would be the effect of the projectile force, if the Sun's attraction were suspended? How does the Sun's attraction modify the effect of this force?

XV.—THE TIDES.

1. THE tides are alternate elevations and depressions of the waters of the sea, which take place twice in the lunar day, or in the average space of about 24 hours 50 minutes. These are occasioned by the attractions of the Sun and Moon. Thus, while the Earth is performing its revolution, it is drawn by the Sun from the rectilineal path in such a manner, that its centre describes its orbit. At the same time, the side nearest the Sun is attracted with greater force, and the most remote side with less force, than the centre; and thus the distance of each from the centre tends to be increased.* Hence it appears, that,

Questions on the Notes to Section XIV.

1. What is the amount of the effect produced by a mountain on a plomb-line? Why is it so small? What was the amount of the deviation produced by Schihallion? What was hence inferred respecting the Earth's density?
2. How would a planet move, were its projectile force much increased? What would be the effect, if the velocity in the orbit were much diminished? Even with the medium velocity, what must be the direction of the motion, so that the orbit may be nearly circular? To what is the attractive force proportional? Were this law changed, what would be the consequence? What inference do we hence derive, respecting design and intelligence in the structure of the system?

Why may we suppose that the fixed stars are in motion? What might be expected to be the ultimate effect of attraction, if the stars were at rest? What may each nebula be? May there be systems of a still higher order? If these views be correct, how may the stars be distributed?

What did Dr. Herschel suppose respecting the connexion between our Sun and system and the fixed stars? What is the Milky Way? Trace its course on the globe.

* 1. This part of the theory of the tides, in which students generally feel some difficulty, will perhaps be rendered more simple, if we suppose a planet, with two satellites of equal masses and at equal distances, revolving round the Sun in such a manner that one of the satellites is always between the Sun and planet, and the other in opposition to the Sun. In these circumstances, it is evident, that the primary planet would describe its orbit just as if it were attended by no satellites; and that, from the inequalities of the attractions exerted on it and on the secondaries, the distances between it and each of them would be increased. The theory may perhaps be rendered still farther intelligible by considering, that the centrifugal forces of the two satellites would be, one of them less and the other greater than that of the primary, in consequence of the one moving with a less and the other with a greater velocity. It is also evident, that the force which tends to produce the tides,

though this cause is unable to affect the solid parts of the Earth; yet, as the fluid parts yield to the slightest force, an elevation is produced, by the Sun's attraction, in the waters of the ocean, at two opposite sides of the globe, and a depression at the intermediate parts.

2. An illustration exactly similar, is applicable respecting the effect produced by the Moon. From the nearness of the Moon, however, the difference between the attraction which she exerts on the centre of the Earth and on the nearer and more remote sides, is three or four times greater than the same difference in the effects produced by the action of the Sun; and hence her attraction contributes in a much greater degree to the production of the tides.

3. From this reason, the Moon's attraction may be considered as the great cause of the tides, and the Sun's influence may be regarded as merely modifying its effects; the tides being greatest when the Sun, Earth, and Moon, are in nearly the same straight line, as about new or full moon; and least when the lines drawn from the Earth to the Sun and Moon, are nearly perpendicular to each other, as about the first and last quarters. For the same reason also, the tides are retarded daily by about fifty minutes, on account of the Moon's eastward motion, which brings her to the meridian each day about fifty minutes later than the preceding.

4. The largest, or spring tides, take place a day and a half, or two days, after new or full moon; and the least, or neap tides, about the same time after the first or third quarter. This arises from the circumstance, that, even after new or full moon, the actions of the Sun and Moon concur for some time in adding to the effect which they have already produced, and thus increase the height of the tides; and, for a short time after the quarters, their influence continues in a similar way to diminish their height.

5. In the same manner, in the open ocean, it is not

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is merely the *difference* between the forces acting on the centre, and on either the nearer or the more remote surface of the Earth. Hence it appears also, as it is stated in the next paragraph of the text, that though the Sun's attraction on the Earth is many times greater than that of the Moon, yet, on account of his distance being nearly 400 times greater, and the attractions being inversely proportional to the squares of the distances, his influence in producing tides is much less than that of the Moon, as he attracts the different parts of the Earth more nearly with equal force.

high water for an hour or two after the Moon has passed the meridian.* In other places, the times of high and low water are greatly retarded, and the height and other phenomena of the tides much modified, by the extent, situation, and form of the land; an obstacle being thus presented to the free motion of the water.

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* 2. The tendency of the Moon is to elevate the water so as to form a prolate spheroid; which, in consequence of the Moon's apparent diurnal revolution, would revolve round from east to west, its axis being directed, not exactly towards the Moon, but somewhat to the east of her place; and hence, the reason is obvious why there are two tides in the lunar day. The Sun also produces a smaller spheroid; and the actual figure of the surface of the ocean, is produced by a combination of the two.

The facts, that the tide is not at the highest till after the Moon has passed the meridian, and that spring tides do not happen till about a day and a half after new and full moon, will receive illustration from the other similar and well-known facts, that, though the Sun's influence is greatest at noon, the heat is not at the greatest till two or three o'clock; and that the hottest and coldest times of the year are not at the solstices, but some weeks after.

It may be farther remarked, that the magnitudes and other phenomena of the tides are greatly influenced by the variations in the distances of the Moon and Sun from the Earth, by their declinations, and by their motions.

It will also appear evident, that the waters of lakes cannot be sensibly affected by tides; as, from their limited extent, the Sun or Moon will attract every part of their surfaces in nearly an equal degree, and there is no connexion with any other body of water to supply a quantity of fluid to form the accumulation. In like manner, seas which are connected with the ocean by a strait that is small compared with their magnitudes, have either no perceptible tides, or very small ones. Thus, the tides are extremely small in the Mediterranean; and in the Baltic there are none.

The tides are also influenced by the winds; being both higher and earlier when the direction of the wind favours the progress of the water; while in contrary circumstances, they are later, and attain less height. Besides this influence, the winds, in their more general action, produce a movement in the waters of the ocean from east to west. The heat of the Sun rarifies the air at the place where he is vertical, and in some space around it. The air being thus rendered lighter ascends, and other air rushes in to supply its place. By this means, in consequence of the Sun's apparent westward motion, the air about the torrid zone is constantly moving in that direction, unless prevented by mountains, or other obstacles; and thus an east wind generally blows in those regions, causing a westward movement in the ocean. This is a principal cause of the Gulf Stream, already mentioned; and the same movement has been observed in many other places.

Questions on the Notes to Section XV.

1. Illustrate, by means of a planet supposed to have two satellites, the way in which the tides are produced. What part of the attraction of the Sun and Moon produces the tides? Illustrate the reason that the Moon has more influence than the Sun in producing the tides?
2. What figure does the Moon's attraction tend to produce? How many tides must there be, on this account, in the same day? Whence does the actual figure of the ocean arise?

Give illustrations of the facts, that the tide is not at its highest till some time after the Moon has passed the meridian, and that spring tides do not happen till about a day and a half after new and full moon.

How are the magnitudes and other phenomena of the tides modified by the positions of the Sun and Moon?

Why are there no tides in lakes? In what seas are there no tides, or only small ones, and why?

How are the tides influenced by the winds? What general movement do the winds produce on the waters of the ocean? Why does an easterly wind generally blow in the tropical regions? What does this produce in the Atlantic? Has the same movement been observed elsewhere?

Questions on Section XV.

1. What are the tides? What time elapses between one tide and the following? How are tides occasioned? What point of the Earth describes the orbit? Why do the distances from the centre to the side nearest the Sun, and the side most remote, both tend to be increased? What parts of the Earth is this cause unable to affect? What parts can it affect, and what is the result?
2. Why does the Moon affect the waters more than the Sun?
3. What may be considered the great cause of the tides? What may be regarded as the effect of the Sun's influence? When are the tides greatest? When least? What causes the daily retardation of the tides?
4. What are spring tides? Neap tides? When do these take place? Why do not the spring tides take place exactly at new and full moon, and the neap ones at the quarters?
5. When is it high water in the open ocean? Why is not the tide highest when the Moon is on the meridian? What cause greatly retards, and otherwise modifies the tides, in most places?

XVI.—ASTRONOMICAL SYSTEMS.

1. After the foregoing outline of the modern Astronomy, a short account of some of the theories that have been formed to account for the celestial phenomena, may be interesting to the pupil. The principal of these are the Ptolemaic, the Copernican, and the Tychonic systems.

2. The Ptolemaic system derives its name from Ptolemy, an Egyptian philosopher, who flourished in the early part of the second century after Christ, and by whom it was principally propagated. According to this system, the Earth is at rest in the middle of the universe; and, round it as centre, the Sun, the planets, and the fixed stars, perform diurnal revolutions from east to west; the Sun and planets moving rather more slowly than the fixed stars, and thus falling gradually to the east of them. To account for the retrograde motions and stationary appearances of the planets, Ptolemy conceived a large circle, belonging to each, having the Earth as its centre; and a small one, having its centre on the circumference of the other, and carried along with it in its motion round the Earth. The latter he called an *epicycle*, and the former a *deferent;* and he conceived the planet to move round the circumference of the epicycle. This system, from its accordance with the evidence of the senses, and from the want of accurate observations on the planetary motions, was received as true for many centuries; and it became more and more complicated, as additional epicycles were found necessary to account for any new phe-

nomena that were discovered by the observations of succeeding astronomers. It is now totally exploded, from its want of simplicity, from the absurdity of supposing large bodies to move round one comparatively so small, and from its failing to explain with accuracy the celestial motions.

3. The COPERNICAN SYSTEM is that which has been explained in the foregoing pages, and which is now adopted by all who are capable of forming a correct judgment on the subject. It is so called from Copernicus, a native of Thorn in Prussia, who died in 1543. About the year 1530, he completed a work containing his views respecting the celestial phenomena; but, from fear of advancing opinions contrary to those maintained at the time in which he lived, and thus probably subjecting himself to persecution, he was deterred for several years from publishing it, and received a complete printed copy of it only on the day of his death. Pythagoras, the Grecian philosopher, who lived above 500 years before Christ, is said to have held the same opinions respecting the planetary motions.

4. The TYCHONIC SYSTEM is so named from its author, Tycho Brahe, a native of Norway, who died in 1601. In this system, the earth is supposed to be at rest, and to have the Moon, the Sun, and the fixed stars moving round it, as the centre of their motions; while the other planets revolve round the Sun, and are carried with him round the Earth. This system—besides the absurdity which it has in common with the Ptolemaic, in supposing the Sun and stars to revolve round so small a body as the Earth—is void of the beautiful simplicity that belongs to the system of Copernicus. Some of the followers of Tycho modified the system, so far as to admit the motion of the Earth on its axis; and thus to account for the apparent diurnal revolutions of the heavenly bodies, without supposing them to move with the amazing velocities which they must otherwise have. When thus modified, it has been called the SEMI-TYCHONIC SYSTEM. These theories were both advanced after the publication of the Copernican system; but, notwithstanding their agreeing more nearly with the evidence of the senses, they were never generally received; and the discoveries of modern science have shown their falsity, and have fully confirmed the truth of the system of Copernicus.

5. The celebrated French philosopher, Des Cartes, who died in 1650, admitted the truth of the Copernican system, and formed a theory to account for the motions of the planets. According to this theory, the Sun is surrounded with a vast vortex or whirlpool of fluid matter, moving from west to east, and carrying the primary planets along with it in their orbits; while the satellites are carried round their respective primaries by similar subordinate vortices contained within the great one that moves round the Sun. This system was pretty generally received for a considerable period; but it is now universally laid aside, as it is found to be altogether at variance with the real motions of the heavenly bodies; and the true theory of these motions is found to be that which was given by Sir Isaac Newton, and which has been explained in Section XIV. of this Appendix.

Questions on Section XVI.

1. Name the principal astronomical systems.
2. Whence does the Ptolemaic system get its name? Who was Ptolemy, and when did he live? How are the planets supposed to move, according to this system? What is an epicycle? A deferent? What purpose were these intended to serve? Why has this system been exploded?
3. Who was Copernicus, and when did he die? When was his work on the solar system prepared for publication? When was it published? What was his theory respecting the planetary motions? Who is also said to have held the same opinions?
4. Why is the Tychonic system so called? Who was Tycho Brahe? When did he die? What is supposed in this system respecting the planetary motions? What are some obvious objections against this theory? Describe the semi-Tychonic system? Were these systems generally received?
5. Who was Des Cartes? When did he die? What system did he admit to be true? What was his theory to account for the planetary motions? Why is this system laid aside? What is the true theory of the planetary motions?

TABLE I.—THE PLANETARY SYSTEM.

Names.	Duration of a Sidereal Revolution. d.	h.	m.	s.	Proportional Mean Distances from the Sun.	Eccentricity, half the greater Axis being one.	Mean Diam. in English Miles.	Comparative Bulks.
Sun	.....				.....	.....	883246	1395324·4
Mercury	87	23	15	44	·387100	·205515	3224	·0565
Venus ..	224	16	49	11	·723332	·006853	7687	·8828
Earth ..	365	6	9	8	1·000000	·016853	7912	1·0000
Moon ..	.....				1·000000	.....	2180	·0204
Mars ...	686	23	30	35	1·523693	·093134	4189	·1386
Vesta ..	1335	4	55	12	2·373000	·093220	238	.....
Juno ...	1590	23	57	7	2·667163	·254944	1425	.....
Ceres ..	1681	12	56	10	2·767406	·078349	163 or 1024	.....
Pallas..	1681	17	0	58	2·767592	·245384	80 or 2099	.....
Jupiter.	4332	14	27	11	5·202592	·048178	85950	1280·9
Saturn .	10759	1	51	11	9·540724	·056168	79042	974·78
Uranus.	30689	0	0	0	19·183620	·046670	35112	87·26

Names.	Density, that of water being one.	Proportional Quantities of Matter.	Rotations on their Axes. d.	h.	m.	s.	Inclination of Axis to Orbit.	Inclination of Orbit to the Ecliptic.
Sun	$1\frac{2}{5}$	333928	25	14	8	0	82° 44′	.....
Mercury	$9\frac{1}{6}$	0·1654	1	0	5	30	15° probably	7° 0′ 0″
Venus ..	$5\frac{11}{15}$	0·8899	0	23	21	19	15° probably	3 23 25
Earth ..	$4\frac{1}{2}$ or 5	1	0	23	56	4·1	66° 32′	0 0 0
Moon ..	$5\frac{1}{2}$	0·0146	29	12	44	3	88° 17′	5 9 3
Mars ...	$3\frac{3}{7}$	0·0875	1	0	39	22	61° 18′	1 51 0
Vesta ..	.....	.....	.....				.....	7 8 46
Juno ...	.....	.....	27 hours probably				.....	21 0 0
Ceres ..	2	.....	.....				.....	10 37 0
Pallas ..	2	.....	.....				.....	34 50 40
Jupiter .	$1\frac{1}{4}$	312·1	0	9	55	37	87° nearly	1 8 56
Saturn .	$0\frac{13}{12}$	97·76	0	10	16	2	60° probably	2 29 50
Uranus .	$0\frac{99}{100}$	16·84	.....				.....	0 46 20

TABLE II.

Containing the Sidereal Revolutions of the Satellites of Jupiter, Saturn, and Uranus; and their Distances from their Primaries expressed in Semi-diameters of those Primaries.

SAT.	JUPITER. Revolution. d.	h.	m.	s.	Distance.	SATURN. Revolution. d.	h.	m.	s.	Distance.	URANUS. Revolution. d.	h.	m.	s.	Distance.
I.	1	18	27	30	5·097300	0	22	37	30	3·080	5	21	25	20	13·120
II	3	13	13	43	9·065898	1	8	53	5·8	3·952	8	16	57	47	17·022
III.	7	3	42	28	14·461628	1	21	18	25·9	4·893	10	23	2	47	19·845
IV.	16	16	32	9	25·436000	2	17	44	36·6	6·268	13	10	56	29	22·752
V.	.....				.....	4	12	25	11	8·754	38	1	48	0	45·507
VI.	.....				.....	15	22	41	13·9	20·295	107	16	39	56	91·008
VII.	.....				.....	79	7	54	27	59·154	.....				.....

XVII.—USE OF THE GLOBES.*

1. THE *terrestrial globe* is a representation of the Earth, as divided into sea and land, with the several circles necessary for determining the positions of places, and for other purposes. The *celestial globe* is a like representation of the stars. Each globe is suspended, by means of an axis, in a brazen ring, called the *universal* or *brazen meridian;* and is supported in a frame, the upper part of which is flat, and represents the rational horizon.

2. The universal meridian is divided into degrees, and parts of degrees: and it is numbered on one side from 0 at the equator, both ways, to 90° at the poles; and on the other side from 0 at each pole, to 90° at the equator.

3. On the terrestrial globe, the degrees on the equator are numbered, both eastward and westward, from the point in which it is cut by the first meridian. It is also divided into twenty-four equal parts, corresponding to the hours of the day.

4. Each globe is furnished with a small circle of brass, called the *hour circle.* This is placed at the north pole, and is divided into twenty-four equal parts, to represent the hours of the day.†

5. The horizon of each globe is divided into degrees; and is numbered by one series of figures, commencing from 0 at the north and south points, and ascending to 90° at the east and west; and by another series, commencing at the east and west points, and terminating at the north and south. The several points of the compass, the months of the year, and the signs and degrees of the ecliptic, in which the sun is on each day, are also marked on the horizon.

6. The *quadrant,* or the *quadrant of altitude,* is a thin slip of brass, numbered from 0 to 90° in one direction, and from 0 to 18° in the other.

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* 1. The following article will contain merely the most important of the problems that can be solved by means of globes; many being omitted which are usually given in treatises on the subject. The problems, indeed, which are contained in several of these treatises, every intelligent teacher will perhaps consider to be much too numerous; and many of them are too little elementary, to be intelligible or useful to the generality of pupils.

† 2. On some globes, the hour circle is fixed, and has a moveable index. On others, the circle is moveable, and the meridian serves instead of an index. This

PROBLEMS ON THE GLOBES.

TERRESTRIAL GLOBE.

PROBLEM I.—*To find the latitude and longitude of a given place.*

Rule.—1. Turn the globe till the place comes to the universal meridian. 2. Then the degree of the meridian above the place is its latitude; and, 3. The degree of the equator cut by the meridian is its longitude.*

Required the latitudes and longitudes of the following places:

Exercise 1. Moscow. Ex. 3. Pekin. Ex. 5. Belfast.
2. Lima. 4. Otaheité. 6. Batavia.

PROBLEM II.—*Given the latitude and longitude of a place; to find it on the globe.*

Rule.—1. Bring the given longitude found on the equator, to the universal meridian. 2. Find the given latitude on the meridian, and the point below it will be the required place.†

Find the places whose latitudes and longitudes are as follows:

	lat.	*lon.*		*lat.*	*lon.*		*lat.*	*lon.*
Ex. 7.	16° S.	5½° W.	Ex. 8.	56° N.	3° W.	Ex. 9.	22½° N.	88° E.

PROBLEM III.—*To find the distance of two given places.*

Rule.—1. Lay the quadrant with its graduated or divided edge over the two places, and with the zero or cipher over one of them. 2. The figure over the other will show

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mode is much preferable, as the index is very liable to go out of order. Some globes have another circle at the south pole. When globes differ in this or in other respects from the description here given, the pupil will in general feel no difficulty, if he consider carefully what is here stated.

* 3. Thus, the latitude of Palermo is 38¼° north, and its longitude 13½° east. If two places lie on the same side of the equator, their *difference of latitude* will be found by subtracting the latitude of the one from that of the other; but, if they be on opposite sides, the latitudes must be added. To find the *difference of longitude* of two places, add their longitudes, if one be east and the other west; otherwise subtract. If the result obtained by adding should exceed 180°, subtract it from 360°, and the remainder will be the required difference.

† 4. Thus, the place whose longitude is 78½° west, and latitude 33¾° south, will be found to be the island of Juan Fernandez.

their distance in degrees. 3. Multiply this by 69, to find the distance in British miles; or by 60, to find it in geographical or nautical miles.*

If the distance exceed 90°, it may be taken by means of a thread, and measured on the equator.

Required the distances between the following places:

Ex. 10. Belfast and Bombay. Ex. 12. Cork and Charleston.
11. Bombay and Pekin. 13. Port Jackson and Owhyhee.

Ex. 14. Required the breadth of the Atlantic Ocean, at the narrowest part between Africa and South America.

Ex. 15. Required the breadth of the Pacific Ocean, between Lima and the nearest point of China.

Ex. 16. Required the length and breadth of Africa.

Ex. 17. Required the sum of the distances from the Land's End to the Cape Verde Islands; from the Cape Verde Islands to the Cape of Good Hope; and from that cape to Calcutta.

PROBLEM IV.—*The hour of the day at one place being given; to find what the hour is at another.*

Rule.—1. Bring the place where the time is given, to the universal meridian. 2. Set the hour circle for twelve o'clock.† 3. Bring the other given place to the meridian, observing the hours passed over on the circle, which will be the difference in the reckoning of time at the two places. 4. Then, if the proposed place be east of that at which the time is given, the hour at it will be more advanced than the given time, by this amount; but, if west, it will be less advanced by the same.‡

* 5. Thus, the distance between London and Cairo will be found to be 31¼°; the product of which by 69 is 2173½ miles, the distance required. In strictness, in reducing the distance to British miles, a mile should be added for each 22 degrees contained in it. This is unnecessary, however; as, in using any ordinary globe, an error of several miles in the distance will be almost always committed in consequence of the smallness of the scale.

† 6. That is, if there be an index, set it to twelve o'clock on the hour circle: if there be not an index, put twelve on the hour circle to the universal meridian.

‡ 7. Thus, when it is ten o'clock in the morning at London, it is about five in the afternoon at Batavia, and half-past three in the morning at Vera Cruz.

The reason of the difference in the reckoning of time at different places, arises from the sun's apparent daily motion from east to west. It is twelve at noon at any place, when the sun is on its meridian; and as the sun appears to describe a circuit of 360° in 24 hours, he will appear to pass in one hour from any meridian to one 15° west of it. Hence, at the latter meridian, noon will be one hour later than at the former; and there will evidently be a like difference in the reckoning of time at all the other hours of the day.

Degrees and minutes are easily reduced to time by multiplying by 4, and considering the degrees in the result as minutes of time, and the minutes as seconds of time.

The difference between the time at two places, may also be found from their difference of longitude, by allowing an hour for 15°, and consequently four minutes of time for 1°.

Ex. 18. When it is six in the evening at Dublin, what o'clock is it at Ispahan, Canton, and New Orleans?

Ex. 19. When it is nine in the morning at Edinburgh, what o'clock is it at Mexico, Rio Janeiro, and Siam?

Ex. 20. If a well-regulated time-piece, set to the true time at London, were taken to Bombay, how much should it differ from the clocks there?

PROBLEM V.—*At a given place, to set the globe in a position similar to that of the earth itself.*

Rule.—1. Elevate the nearer pole according to the latitude of the place; that is, till its height above the horizon is equal to the latitude. 2. Bring the place to the universal meridian. 3. Set the globe, so that the universal meridian may lie due north and south.*

PROBLEM VI.—*To find the direction in which any place in the world lies in respect to a given place.*

Rule.—1. Set the globe for the given place, as in Problem V. 2. Then, the direction of any place on the earth in respect to the given place, will be the same as the direction of the points representing them on the globe.†

Ex. 21. Find the directions of the north and south poles, and of Cape Horn, Calcutta, and Kamtschatka, in relation to Limerick.

Ex. 22. Find the direction of Bhering's Strait, Tobolsk, and New Zealand, in respect to Algiers.

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* 8. Thus, in setting the globe for Madrid, the north pole must be raised above the northern side of the horizon till the fortieth degree of the meridian, below that pole, on the side which is numbered from the poles, shall be cut by the horizon. The meridian is set due north and south by means of the compass placed beneath the globe, allowance being made for the variation of the magnetic needle at the particular place. If the globe be not furnished with a compass, a small moveable one may be procured, and placed on the horizon near the meridian; or, by means of the shadows of objects at twelve o'clock, the direction of any particular apartment in respect to the meridian may be ascertained, so that the globe may be placed with the meridian north and south when required. The variation of the magnetic needle at Belfast, is about 28½° west; that is, the needle is directed towards a point 28½° west of the north point.

† 9. Thus, in respect to Belfast, it will be seen, that the Cape of Good Hope lies a little to the east of the south, and in a line inclined to the sensible horizon of Belfast, at a considerable angle below it; while New Zealand lies nearly at the most remote point of the globe.

PROBLEM VII.—*To find the sun's declination, that is, his distance from the equator, on a given day.*

Rule.—1. Find the day of the month on the declination scale, or on the ecliptic. 2. Bring either to the universal meridian, and the degree over it will be the declination.*

This problem may also be performed on the celestial globe.

Ex. 23. Required the sun's declination on the twenty-first of June, the twenty-first of December, the fifteenth of April, and the twenty-fifth of January.

PROBLEM VIII.—*The time being given in a particular place, to find how the various parts of the earth are circumstanced at that time, in respect to day, night, twilight, &c.*

Rule.—1. Find the sun's declination by Problem VII. 2. Bring the given place to the universal meridian, and set the hour circle for twelve o'clock. 3. Elevate the nearer pole according to the declination; that is, the north pole if the declination be north, and the south pole if it be south. 4. If the time be before noon, turn the globe westward, according to the interval between it and noon; if it be after noon, turn it eastward, according to the interval; if it be noon, the globe is not to be moved.

5. Then all places above the horizon have day, and all below it night. 6. At all places between the poles, and under the upper part of the universal meridian, it is noon; while at the places along the rest of the meridian, it is midnight. 7. At all places along the western side of the horizon, the sun is rising; and at all on the eastern side, he is setting. 8. If the quadrant be screwed on the meridian at the highest point, over the degree answering to the sun's declination, all places between the upper edge of the horizon and the eighteenth degree below it on the quadrant, have twilight; those on the west having twilight before sunrise, and those on the east evening twilight. 9. If the globe be made to revolve on its axis, all places

* 10. Thus, on the twenty-first of May, the sun's declination is about 20° north. The ecliptic belongs in propriety only to the celestial globe; but, for the sake of some problems, it is put also on the terrestrial one. The analemma, or declination scale, however, which is given on modern terrestrial globes, is sufficient in all cases. The ecliptic on the celestial globe, shows the sun's apparent position among the fixed stars every day of the year.

about the elevated pole, which do not sink below the horizon, have at that time continual day; while those about the other pole, which do not rise above the horizon, have continual night.*

Ex. 24. When it is five o'clock in the afternoon at Lima, on the first of December, what places have day, night, &c.?

PROBLEM IX.—*To find the apparent time of the sun's rising and setting, and the lengths of the day and night, at a given place.*

Rule I.—1. Set the globe according to the first three parts of the rule for Problem VIII. 2. Then turn the globe, till the given place comes to the horizon on either side; and the time passed over on the hour circle, will be the interval between noon and the time of rising or setting, whence the time of rising and setting will be obtained. 3. To find the length of the day, double the hour of setting; and to find the length of the night, double the hour of rising.

Rule II.—1. Elevate the nearer pole according to the latitude of the place. 2. Bring the given day of the month on the ecliptic or the declination scale, to the meridian, and set the hour circle for twelve o'clock. 3. Then bring the day of the month to the horizon on either side, and the time passed over on the hour circle will be the interval between noon and the time of rising or setting.†

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* 11. Thus, suppose the time to be half-past ten o'clock in the forenoon, at London, on the nineteenth of July; we find the sun's declination on that day to be 21° north. Then, elevating the north pole according to this, and bringing London to the meridian, we have the positions of the various places at noon on that day. The time, however, being an hour and a half before noon, we set the hour circle for twelve o'clock, and turn the globe westward till an hour and a half are passed over on it. We then find, that all Europe and Africa, most of Asia, and parts of North and South America, have day; while it is night in New Holland, the Pacific Ocean, and other parts. It is noon in Lapland, Finland, Hungary, Greece, the centre of Africa, &c.; and midnight in the Sandwich Islands, &c. The sun is vertical at a point in Bornoo, under the degree of his declination; he is rising near Charleston and Lake Superior, and setting in Corea, Borneo, &c. There is morning twilight in Chilé, Peru, &c.; and evening twilight in Japan and Kamtschatka. There will also be continual day in Spitzbergen, part of Greenland, &c. By making the globe revolve uniformly on its axis, the comparative lengths of the day and night at the proposed time will be shown. Thus, it will appear, that at this season the British Isles are much longer in light than in darkness, while the contrary is the case at Cape Horn; and the hour circle would give the precise lengths of day and night.

† 12. Thus, by either method, the sun will be found to rise at London on the twenty-fifth of January, at three quarters past seven o'clock, and to set a quarter past four; and hence, the length of the day, exclusive of twilight, is found to be eight hours and a half; and that of the night, including twilight, fifteen hours and a half.

The reason of doubling the hours of setting and rising, to find the lengths of the day and night, is obvious from the consideration that noon is the middle of the

Ex. 25. Required the sun's rising and setting, with the lengths of the days and nights, on the twenty-first of April, at the North Cape, at Edinburgh, at the mouth of the river Amazon, and at Cape Horn.

Ex. 26. Required the times of the sun's rising and setting, and the lengths of the day at Tornea, on the first of December, the third of February, the tenth of April, and the eighth of June.

PROBLEM X.—*To find the beginning and end of twilight.*

Rule.—1. Set the globe according to the first two parts of Rule II. for Problem IX. 2. Fix the quadrant over the latitude of the place on the upper side of the meridian. 3. Then move both the globe and the quadrant, till the day of the month on the globe comes to the eighteenth degree on the graduated edge of the quadrant below the horizon; and the time passed over on the hour circle, while the day of the month is moving to this position from the meridian, will be the time between noon, and the beginning or end of twilight.*

Ex. 27. Required the times of daybreak at Quito, on the twentieth of March and the twenty-first of June.

Ex. 28. At what times does dark night commence at Dublin and the Cape of Good Hope, on the twenty-fifth of December?

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day, and midnight of the night; and that the hour of setting is the time from noon, and the hour of rising the time from midnight, at which the sun rises and sets.

It may be proper to remark, that, when the declination, rising, setting, &c. of the sun are mentioned, it is the declination, rising, &c. of his centre that are intended. It is also proper to state, that refraction makes the heavenly bodies appear visible for a short space before the true time of their rising, and after the true time of their setting.

With respect to the two rules above given, it may be remarked, that the first has the advantage of showing, by one adjustment of the meridian, the rising and setting at all places on the given day; and the other, of giving the rising and setting on every day of the year at the proposed place. In the first rule, the sun is supposed to be at rest perpendicularly over the globe, while the earth revolves on its axis; but in the second rule, the sun is supposed to move round the earth according to his apparent diurnal motion.

In the use of the second rule, the point of the compass on which the sun rises or sets, will be had on the horizon opposite to the day of the month when brought down to it. Thus, at London, on the twenty-fifth of January, the sun will be found to rise about 32° south of the east, and to set about the same space south of the west; the former point being almost S. E. by E. and the latter S. W. by W. The interval between the east point and the point of rising, or between the west point and the point of setting, is called the *amplitude* of the body.

† 13. Thus, day will be found to break at Paris, on the first of May, at half-past two o'clock in the morning, and twilight to end at half-past nine in the evening.

If the complement of the latitude, that is, the difference between it and 90°, exceed the declination by less than 18°, there is no dark night, but continual twilight; and if the declination equal the complement of the latitude or exceed it, there is continual day.

Ex. 29. Find the lengths of the twilight at the most northern points of Scotland and Madagascar, on the first of April.

CELESTIAL GLOBE.

1. The points in which the equator and ecliptic intersect each other, are called the *equinoctial points:* the one at which the sun appears to cross the equator northward, the *vernal equinoctial point*, or the *first point of Aries;* the other, the *autumnal equinoctial point*, or the *first point of Libra.**

2. If a great circle be drawn through any of the heavenly bodies, perpendicular to the equator, the part of the equator extending eastward from the first point of Aries to the perpendicular, is called the *right ascension* of the body.

3. If a great circle be drawn through any of the heavenly bodies perpendicular to the ecliptic, the part of it between the body and the ecliptic is called the *latitude* of the body; and the part of the ecliptic between the first point of Aries and the perpendicular, is called its *longitude.* Longitude is usually reckoned in signs, degrees, &c. Thus, instead of saying, that the longitude of a star is 283° 27′ we say that it is 9 signs 13° 27. The sun, being always on the ecliptic, has obviously no latitude. The signs and degrees are marked on one side of the ecliptic, and the days of the month on the other.

PROBLEM XI.—*To find the right ascension and declination of a body.*

Rule.—1. Bring the body to the meridian. 2. Then the degree of the equator under the meridian is the right

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* 14. In the times of the early ancient astronomers, the vernal equinoctial point was in the constellation Aries; and hence it gets its name. This point is found to move westward on the ecliptic about 50¼″ annually; and, in consequence of this, it now falls more than a sign, or 30° to the west of Aries, so that now all the signs, Aries, Taurus, &c. as marked on the ecliptic, are in very different situations from the constellations of the same name. This very slow motion is called the *precession of the equinoxes.*

There are certain characters used to denote the signs of the ecliptic, which are marked on that circle and on the horizon at the beginning of each sign. Thus, an arrow is used to denote Sagittarius; a character like the letter ♏ with a sting, to denote Scorpio, &c.

ascension; and, 3. The degree of the meridian over the body expresses its declination.*

Required the right ascensions and declinations of the following stars:

Ex. 30. Sirius. Ex. 32. Regulus. Ex. 34. Spica Virginis.
31. Arcturus. 33. Capella. 35. Aldebaran.

Ex. 36. Required the sun's right ascension and declination on the fifth of March.

PROBLEM XII.—*To set the globe in a position similar to that of the heavens, at a given time and place.*

Rule.—1. Set the meridian north and south. 2. Elevate the pole according to the latitude of the place. 3. Bring the sun's place to the universal meridian, and the globe will be in the position for noon. 4. Set the hour circle for twelve o'clock. 5. If the given time be before noon, turn the globe eastward according to the interval; but if it be after noon, turn westward.†

* 15. Thus, the sun's right ascension on the thirtieth of October is nearly 215°, and his declination 13½° south. In performing this or any other problem, respecting the sun, his place in the ecliptic on the given day of the month must be employed; and if the body be the moon or any other planet, its place must be found for the given year or day from the Nautical Almanack, White's Ephemeris, or some similar work; and marked on the globe by a particle of wafer, ink, or paper.

† 16. Thus, to set the globe so as to correspond to the positions of the stars at Cork, on the fifth of September, at half-past nine o'clock in the evening elevate the north pole 52°, which is nearly the latitude of Cork, and bring the fifth of September on the ecliptic to the meridian. Then, having set the meridian north and south, and fixed the hour circle, turn the globe westward till nine hours and a half are passed over, and the globe will be in the required position; or so that, if the eye were in its centre, each star on the globe would be in the same direction as the star which it represents in the heavens, some being on the meridian, some rising or setting, and others at various positions above or below the horizon.

By means of this important problem, the pupil may make himself acquainted with all the constellations and principal stars visible at his residence. Thus, in the present instance, he will find, by looking at the globe, that the Great Bear lies between north-west and north, at a high elevation; and by placing a pencil or other upright object over it, he will see its direction so as at once to be able to find the constellation itself in the sky. Of the seven most conspicuous stars in this constellation, the two most remote from the tail are called the *pointers*, because, if a line drawn through them be continued to a length equal to about five times their distance asunder, it will point out the pole star in the tail of the Little Bear. A line drawn from the pole star to the remotest in the tail of the Great Bear, and continued through a distance nearly equal to its own length, will point out Arcturus, a star of the first magnitude, seen a little north of the west at the time referred to in the foregoing example. The bright star Lyra, or Vega, in the Harp, will at the same time be conspicuous at some distance south-west of the zenith; and between it and Arcturus, and nearer the latter, is Alphacca or Gemma in Corona Borealis. In the south-east, and at a considerable elevation, will be seen four stars; three in Pegasus, and one in the head of Andromeda, forming nearly a square. The continuation of one of the diagonals of this, will pass through Andromeda, Perseus, and Auriga. By placing the globe in the open air or near a window, first at one side of the house and then at the opposite, the student will find it both easy and pleasant to trace the stars and constellations, and may form various artificial associations to assist his memory. He may also find it useful, to make rough draughts or sketches of particular parts of the heavens as they appear to the eye.

Ex. 37. Set the globe so as to exhibit the positions of the stars at Rome on the eighteenth of February, at seven o'clock in the evening.

Ex. 38. Set the globe so as to represent the positions of the stars at Otaheite on the fourth of August, at one o'clock in the morning.

PROBLEM XIII.—*To find the time at which a star rises, sets, or comes to the meridian, at a given place, on a given day.*

Rule.—1. Set the globe according to parts 2, 3, and 4 of the rule for Problem XII. 2. Then bring the star successively to the meridian, and to the eastern and western sides of the horizon; and, at these several positions, the hour circle will point out the times at which the star passes the meridian, rises, and sets.*

Stars which are constantly above the horizon, when the globe is made to revolve, never set at the given place. Such stars, in respect to it, are called *circumpolar stars*. Those again, in the opposite part of the heavens, which, while the globe revolves, continue always below the horizon, never rise at the given place.

Ex. 39. Required the times at which Antares rises, sets, and passes the meridian, at Amsterdam and Algiers, on the eighth of October.

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* 17. Thus, at Madrid, on the third of February, Rigel in the foot of Orion passes the meridian a little before eight in the evening, rises at half-past two o'clock in the afternoon, and sets at twenty-five minutes past one the ensuing morning.

Questions on the Notes to Section XVII.

3. How is the difference of latitude of two places found? The difference of longitude? When the longitudes are to be added, and their sum exceeds 180°, how is the difference of longitude found?
7. What is the reason of the difference in the reckoning of time at different places? What space does the sun appear to describe in twenty-four hours? In one hour?
12. Why are the times of setting and rising to be doubled, to find the lengths of the day and night?
What part of the sun is intended, when his declination, rising, &c. are spoken of? What is the effect of refraction?
What is meant by the amplitude of any of the heavenly bodies?
13. In what circumstances does twilight continue the whole night? In what circumstances is there continual day?
4. Where was the vernal equinoctial point, in the time of the early ancient astronomers? What motion has this point? What is the effect of this on the positions of the constellations? What is this motion called?
15. How may the position of a planet be represented on the globe?
16. What are the *pointers*? Why are they so called? How may the position of Arcturus be found? How is Alphacca situated? What stars form nearly a square? How may Andromeda, Perseus, and Auriga be found?

Ex. 40. Required the times at which Lyra, Canopus, and the middle star in Orion's Belt, rise, set, and pass the meridian at Cairo, on the fifteenth of June.

Ex. 41. Point out the principal stars that never set at Belfast; and also the principal ones that are never visible.

Ex. 42. How are the equator and the poles circumstanced, with respect to the number of stars visible at each?

Questions on Section XVII.

1. What is the terrestrial globe? The celestial? What is the universal meridian? What represents the rational horizon?
2. How is the universal meridian divided and numbered?
3. How are the degrees of the equator on the terrestrial globe numbered? How is that circle otherwise divided?
4. What is the hour circle? Where is it placed? How is it divided, and what do the divisions represent?
5. How is the horizon of each globe divided and numbered? What else is marked on the horizon?
6. What is the quadrant of altitude? How is it divided and numbered?

TERRESTRIAL GLOBE.

Prob. I. How are the latitude and longitude of a place found?
Prob. II. How is a place found on the terrestrial globe, by means of its latitude and longitude?
Prob. III. How is the distance of two places found in degrees? In miles? How, when the distance exceeds 90°?
Prob. IV. How is the difference in the reckoning of time at two places found by the globe? How, by their longitudes? When is the difference of time to be added? When subtracted?
Prob. V. How is the globe set in a position corresponding to that of the earth itself?
Prob. VI. How is the direction of one place from another found?
Prob. VII. What is the sun's declination? How is it found?
Prob. VIII. How is the globe set to show how, at a given time, in a particular place, the various parts of the earth are circumstanced as to day, night, &c.?
What places have day? Night? Where is it noon? Midnight? Where is the sun rising? Setting? Where is there morning twilight? Evening? What places have continual day? Continual night?
Prob. IX. How are the sun's rising and setting found? The lengths of the day and night?
In what other way may these be found?
Prob. X. How are the beginning of morning and the end of evening twilight found?

CELESTIAL GLOBE.

1. What is meant by the equinoctial points? What are they called?
2. What is the right ascension of a body?
3. What is the latitude of any of the heavenly bodies? Its longitude? How is longitude generally reckoned? What body has no latitude? How are the numbers placed on the ecliptic?

Prob. XI. How are the right ascension and declination of a body found?
Prob. XII. How is the globe set, so as to represent the position of the heavens at a given time and place?
Prob. XIII. How is the time found at which a star rises, sets, or comes to the meridian, at a given place, on a given day?

XVIII.—PRONOUNCING VOCABULARY.

In this list, the letters that are silent in the pronunciation are Italics; and the following are the sounds of the vowels used in it:

Fāte, fâr, fâll; mè, mĕt, ẽre*; fine, fĭeld; nò, mŏve, nŏr; tūbe, bŭll.

Where no figures are put over vowels, they are to be sounded as they would be in English words in similar situations.†

Ab'er-gaven-ny	Al'lo-a	An-drō'me-da	An-to-nī'nus
Aisne	Aln'wick	An-go'ra	Ar'a-rat
Al-a-bā'ma	Al'to-na	An-nap'o-lis	Ar'give (*g soft*)
Al-glers'	Am'a-zon	An-tī'gua	Ar-kan-sās'
Al'le-ghā-ny	An-da-lū-sī'a	An-tip'a-ros	Ar-mâgh'

* 1. This sound of *e* is the same as the first sound of *a*.—See Walker's Dictionary.

† 2. In the names of towns in England, the termination *-mouth* is pronounced *-muth*, and *-wick* and *-nich* have *w* silent.

In French names, *ou* is pronounced like *o* in *move*; *au* like *o* in *no*; *ch* like *sh* in *shall*; *qu* as *k* hard; and *gn*, in French and Italian, like the first *n* in *opinion*. In French names, also, *e* at the end is silent, unless accented; as are also *s*, *es*, *t*, *g*, and *lt*; except *Brest*, *Rheims*, *Arras*, *Par'is* (as pronounced in England), *Frejus*, and a few others, in which the final letter is sounded.

In Spanish names, *j* and *x* sound like *h*, and *ñño* like *nyo*.

In the names of places in the Netherlands, Germany, Sweden, Denmark, and Norway, *g* is always hard, as in *go*.

In Italian words, *z* and *zz* sound like *ts*; *ce*, *ci*, and *cei*, like *ch* in *chin*; and *ch* like *k*.

In German names, unless naturalized, as *Brunswick*, *w* is pronounced like the English *v*; and *sch* like *sh* in *shall*. In German names, also, the English pronounce *ch*, without *s* before it, like *k*.

The letter *i*, in the foreign languages of Europe, is generally pronounced like *ee* in *feel*.

Names ending in *-poli*, or *-polis*, have the accent on the syllable before this termination.

In the names of places in India, Persia, and Afghanistan, the accent is on the last syllable, when they end in *-ani*, *-an*, *-ad*, *-al*, *-ar*, *-ore*, *-ur*, or *-oor*: and many other eastern names have the accent on the same syllabe.

Th, in words which are not English, sounds nearly as *t*, with the tip of the tongue placed lower, so as to be nearly between the teeth.

The letter *c*, marked with a cedilla (thus, ç), sounds as *s*.

These principles, together with the vocabulary here given, and particularly with the division into syllables, will enable the learner to make some approach to the true pronunciation of many of the names contained in the foregoing work. An enlarged list might readily have been given, from similar vocabularies already before the public. This has been purposely avoided; as, though it might please the pupil, it would in many instances mislead him. These vocabularies, indeed, all err in aiming at too much, and in pretending to give the mode of pronouncing many names, the true pronunciation of which the authors could have no means of ascertaining; and, though often useful, they contain numerous inaccuracies and absurdities. Thus, in one of them, *Gloucester* is pronounced *Glorster*; *Armagh*, *Armar'*; and *Maubeauge*, *Mor-boozh'*: in another, *Drogheda* is pronounced *Drog-he'-da*: in a third we have *Fermanaw'* for *Fermanagh*: in a fourth, *Yoog-haul'* for *Youghall*: and in all of them, the accent is very frequently misplaced. In respect to foreign names, to the pronunciation of which there is no proper key, the best rule is to pronounce them as if they were English words.

As-phal-tl'tes
Ath-lone'
A-thy'
Au-rl'ga
A-zores'
Ba-hå'ma
Ba-hl'a
Bal-ly-mé'na
Bar-ba'dòes
Bas'so-ra
Bĕ-årn'
Bel-fast'
Bel-grade'
Be-nå'res
Ben-gål'
Ber-blce'
Ber-mû'das
Bom-bay'
Bo-o'tes
Bos'pho-rus
Brå*h*'min
Bra-zil'
Brus'sels
Ca-dlz'
Caer-mar'then
Caer-nar'von
Cai'ro
Cal'*a*is
Cam-bay'
Cam-by'ses
Càm'bridge
Ca-nå'ry
Ca-no'pus
Can-tire'
Can-ton'
Cape Bre-ton'
Car-lisle'
Cas-tile'
Cau-bool'
Cau'ca-sus
Cav'an
Ce-rl'go
Cey-lon'
Chat'*h*am
Chĕ'vi-ot
Chl'lé
Chim-bo-rå'zo
Cin-cin-nå'ti
Clŏ'*gh*er
Clò'nes
Clon-mell'
Co-im'bra
Cole-raine'
Con'naught
Co-per'ni-cus
Cor-dil-lé'ras
Cor-dò'va
Co-ré'a
Cor'inth
Cri-mé'a
Crom'ar-ty
Cul-lò'den
Cŭ'par
Dar'da-nelles
De-can'
Dem-e-rå'ra
Den'bi*gh*
Dept'ford
Des Cartes'
Dĕv'is
Dle'man
Do-min'i-ca
Don-a*gh*-a-dee'
Dou*bs*
Drò*gh*'e-da
Dro-mòre'
Dum-blane'
Dum-fries'
Dun-bar'
Dun-dål*k*'
Dun-keld'
El'gin (*g hard*)
Elles'mere
Es-se-qul'bo
Et'ive
Eu-phrå'tes
Fer-manag*h*
Fer-moy'
For'far
Fries'land
Gal-lip'o-li
Gan'ges
Ge-nĕ'va
Gen'o-a
Ge-or'gi-um
Gib-ral'tar
Glouces'ter
Gra-nå'da
Green*w*ich
Gre-nò'ble
Gua-da-lòupe'
Gua-ti-må'la
Gul-å'na
Ha*e*r'lem
Hal'le
Han'o-ver
Heb'ri-des
Hel'les-pont
Her'e-ford
Hes'pe-rus
Hid'de-kel
Hin-do-stan'
Hon-du'ras
Hu-ron'
Hŭ*y*'*gh*ens (*g hard*)
I'colm-kill
In'ver-rà-ry
In-ver-ness'
Is-pa-han'
Ja-pan'
Kil-dare'
Kil-la-lŏe'
Kin-naird'
Kin-ross'
Kir*k*-cŭ*d*'bri*gh*t
La-do'ga
Lag'an
Lam-lash'
Lan'ark
Leg-*h*orn
Leices'ter
Lein'ster
Léith
Léi'trim
Leomin'ster
Ll'ma
Lime'rick
Lis-more'
Llan-daff'
Lŏu-l-sl-å'na
Lu'ci-fer
Ma-da-gas'car
Ma-dra'
Ma-drid'
Mag-gi-ò're
Mà'*h*o-met
Ma-là'ga
Mà'lin
Malte Brun
Man'ger-ton (*g hard*)
Mar-an-*h*am'
Ma-rl'no
Mar'ma-ra
Mar-ti-nl'co
Mà'ry-bor-*ough*
Mas-sa-chŭ'setts
May-nooth'
Me-dl'na
Me-rl'da
Mes-sl'na
Metz
Mil'an
Mis-sŏu'rl
Mo-ham'med
Mon-te Vi-dĕ'o
Mŏn*t*-pel'li-er
Mon-trose'
Mo-ré'a
Mos'cow
Mount-rath'
Mul-lin-gar'
Nåas
Nan-kin'
Nap'o-lĭ dĭ Ro-mà'ni-a
New'ark
Ni-ag'a-ra
Nlsmes
Nor'fŏlk
O'å-sis
O-ce-an'i-ca
O'ma*gh*
O-né'ga
O-rel-lå'na
Or-i-nò'co
O-rl'on
Ot-a-hei'te
O-why-hee'
Pal-my'ra
Pa-ra'
Par'a-guay
Pår'is
Pa-to'mac
Pĕg'a-sus
Pe-kin'
Pen-sa-co'la
Per'seùs
Pe-rŭ'
Pic'ar-dy
Pled'mont
Pol-y-nĕ'si-a
Por'to Ri'co
Po-to'sĭ
Prague
Prŏ'cy-on
*P*tol-e-mà'ic
*P*tol'e-mà'is
*P*tol'e-my

Que-bec′	San′-ta Crûz	Suf′-fŏlk	Ty′-cho Brà′-he
Ra-clne′	Saône	Sŭ′-lĭ	Ty-rone′
Ra-gŭ′-sa	Sar′a-cen	Su-ri-nam′	U′-ra-nus
Ral′-eigh	Sà′-turn	Swē′-den	U′-trecht
Ra-phoe′	Sēine	Thes-sa-lo-nī′-ca	Van Dle′man
Rhēims	Sev′-ern	Thur′-les	Ven′a-chor
Rhine	Sl-ām′	Tim-buc-too′	Vĕn′-ice
Rhŏdes	Sl′-nāi	To-le′-do	Win′-ches-ter
Rī′-o Ja-nē′-ro	So-phi′a	Trin-i-dad′	Wind′-sor
Roŭ-en′	St. Do-min′go	Trip′-o-lĭ	Worces′-ter
Sà′-ha-ra	St. Hel-ē′-na	Tu′-am	Yŏu′-ghall
Sa-lo-nī′-ca	Stra-bāne′	Tu′-rin	Yu-ca-tan′

NAMES.	PRONOUNCED.	NAMES.	PRONOUNCED.
Aix-la-Chapelle	ais la sha-pel′	Havre de Grace	hav-er de grās′
Alsace	al-sās′	Herault	he-ro′
Archipelago	ar-ke-pel′a-go	Jedburgh	jed′-bur-ro
Argyle	ar-gīl′ (*g hard*)	Kinghorn	king-gŏrn′
Artois	ar-twà′	Laon	lăng
Auxerre	ō-sĕr′	Lausanne	lo-sàn′
Avignon	a-vī′-nyŏng	Lincoln	ling′-con
Aylesbury	àls′-ber-ry	Loire and Loir	lwăr
Badajos	bad-a-hōs′	Madeira	ma-dā′-ra
Beaumaris	bō-mā′-ris	Martinique	mar-ti-nīk′
Bordeaux	bor-dō′	Michigan	mish-i-gan′
Bourbonnois	bŏr-bon-nà′	Neufchatel	noo-sha-tel′
Bourges	boorzh	Orleanois	or-le-a-nà′
Buenos Ayres	bwà′-nōs à′-res	Pays de Vaud	pà de vō′
Bury	ber′-ry	Perpignan	per-pī′-nyŏng
Caen	cong	Persia	per′-she-a
Cagliari	cal′-lyl-a-rē	Pisa	pī′-za
Cayenne	kī-en′	Quito	kī′-to
Champlain	sham-plain′	Roxburgh	rox′-bur-ro
Detroit	de-trwà′	Salisbury	sâls′-ber-ry
Dieppe	dyĕp	Scio	shī′-o
Edinburgh	ed′-in-bur-ro	Tajo	tà′-ho
Esquimaux	es′-ke-mo	Thames	tēms
Foix	fwà	Uist	wist
Guayaquil	gwà-a-kīl′	Vosges	vōzh
Hainault	hà-nō′	Ypres	ī-prē′

TABLE III.

SHOWING THE LENGTHS OF DEGREES ON THE PARALLELS OF LATITUDE, BETWEEN THE EQUATOR AND THE POLES; THE EARTH BEING SUPPOSED SPHERICAL.

Deg. Lat.	Geog. Miles.	Deg. Lat.	Geog. Miles.	Deg. Lat.	Geog. Miles.	Deg. Lat.	Geog. Miles.	Deg. Lat.	Geog. Miles.	Deg. Lat.	Geog. Miles.
0	60·00	16	57·67	31	51·43	46	41·68	61	29·09	76	14·52
1	59·99	17	57·38	32	50·88	47	40·92	62	28·17	77	13·50
2	59·96	18	57·06	33	50·32	48	40·15	63	27·24	78	12·48
3	59·92	19	56·73	34	49·74	49	39·36	64	26·30	79	11·45
4	59·85	20	56·38	35	49·15	50	38·57	65	25·36	80	10·42
5	59·77	21	56·01	36	48·54	51	37·76	66	24·40	81	9·38
6	59·67	22	55·63	37	47·92	52	36·94	67	23·44	82	8.35
7	59·55	23	55·23	38	47·28	53	36·11	68	22·48	83	7·31
8	59·42	24	54·81	39	46·63	54	35·27	69	21·50	84	6·27
9	59·26	25	54·38	40	45·96	55	34·41	70	20·52	85	5·23
10	59·09	26	53·93	41	45·28	56	33·55	71	19·53	86	4·18
11	58·89	27	53·46	42	44·59	57	32·68	72	18·54	87	3·14
12	58·69	28	52·97	43	43·88	58	31·79	73	17·54	88	2·09
13	58·46	29	52·48	44	43·16	59	30·90	74	16·54	89	1·05
14	58·22	30	51·96	45	42·43	60	30·00	75	15·53	90	0·00
15	57·95										

The foregoing Table is useful in the CONSTRUCTION OF MAPS, in showing the relative positions of the meridians. As an example, let it be required to construct a map of Spain, which lies between the parallels of 36° and 44°; and comprehends, therefore, eight degrees of latitude.

1. Draw the lines round the map, to contain the numbers expressing the latitude and longitude. 2. Draw a meridian perpendicularly through the middle of the map, and divide it into eight equal parts corresponding to the eight degrees of latitude. 3. Divide one of these degrees, or rather a line equal to it, into spaces of five or ten minutes, or such others as may suit the scale of the map. 4. Through the parallel of 38°, draw a perpendicular; and, as the Table gives 47·28 or 47¼ miles nearly for 38°, make the perpendicular equal to 47¼ minutes taken from the divided degree. 5. Draw a like perpendicular through the parallel of 42°; and, according to the Table, make it equal to 44·59 or 44½ minutes nearly. 6. Draw a straight line through the extremities of these perpendiculars, and produce it till it cuts the continuation of the central meridian. 7. From their point of intersection, as centre, describe, on the map, parts of circles passing through the divisions of the central meridian: these will be the parallels of latitude. 8. The line joining the extremities of the perpendiculars is one of the meridians; and, to find the others, set off, as often as possible, on one of the parallels, the distance on the same parallel between that meridian and the central one. 9. Do the same on another parallel; and straight lines drawn through the corresponding points on these parallels will be the meridians. 10. Place the proper numbers at the extremities of the meridians and parallels, and subdivide the degrees into such parts as the scale will properly admit. 11. Then, either from good tables of latitudes and longitudes, or by means of an accurate map, lay down the principal capes, towns, and other places, in their proper situations; and trace the boundaries, rivers, mountains, &c. by means of the map. 12. The *scale* of the map will be easily had from the divided degree, as it contains 69 English miles.

In this construction, the country is supposed to lie on the surface of a cone, which is partly below and partly above the surface of the globe; and which is cut open at one side, and extended so as to become a plane. In strictness, it is not the perpendicular, but the corresponding portion of the parallel, that should be made equal to the length given by the Table: the error, however, is generally quite inconsiderable.

When the country is large, the method here explained is erroneous in a considerable degree. In such a case, the error is lessened by curving the meridians as well as the parallels. For the method of doing this, as well as for much other information respecting maps, recourse may be had to the first volume of Malte Brun's Geography.

The meridians on a common map of the world may be drawn by dividing the equator into equal parts, and describing circles passing through the poles and the points of division; and the parallels may be drawn by dividing the circumferences of the circles and the diameters passing through the poles into equal parts, and describing parts of circles through the corresponding points.

TABLE IV.*

LENGTHS OF THE PRINCIPAL RIVERS IN THE WORLD.

	Miles.		Miles.
Amazon	2800	Indus	1200
Mississippi, *from source of Missouri*	2700	St. Francis	1200
Mississippi, *alone*	1600	Euphrates	1150
Yang-tse-kiang	2300	Don	1080
Nile	2200	Dnieper	1050
Obi	2150	Ural	1020
Yenissei	2100	Rhine	670
Lena	2100	Elbe	570
Volga	2040	Loire	540
Rio de la Plata	2000	Vistula	500
Hoan-ho	2000	Tagus	480
Amour	1800	Rhone	390
Irrawaddy	1800	Po	375
Danube	1710	Shannon	210
Ganges	1550	Thames	180
Orinoco	1300	Tiber	180
		Tay	110

TABLE V.

EXTENTS OF THE SPACES DRAINED BY SOME OF THE PRINCIPAL RIVERS.

	Sq. Miles.		Sq. Miles
Amazon	1,872,000	Rhine	76,000
La Plata	1,520,000	Vistula	75,000
Obi	1,350,000	Elbe	60,000
St. Lawrence	1,320,000	Loire	50,000
Amour	1,135,000	Po	30,000
Volga	640,000	Tagus	29,000
Danube	306,000	Seine	26,000
Don	130,000		

* This Table and the following are taken from Malte Brun, and will be found to differ in a few instances from the statements given elsewhere in this work.

Instead of a Table containing the heights of the principal mountains in the world which it was intended to insert along with the other Tables, a plate is given at the beginning of the volume, exhibiting their comparative elevations in a more interesting way.

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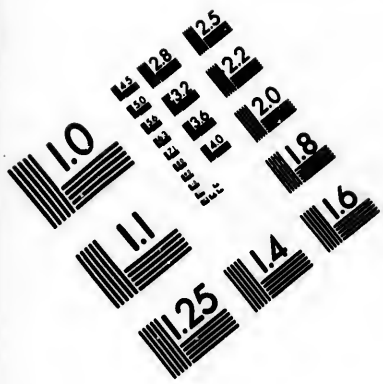

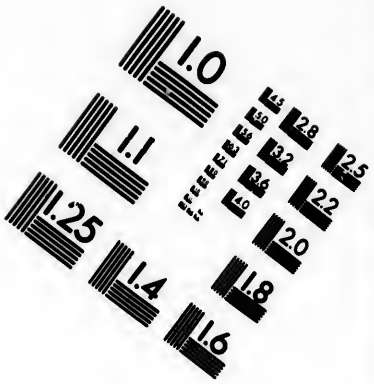

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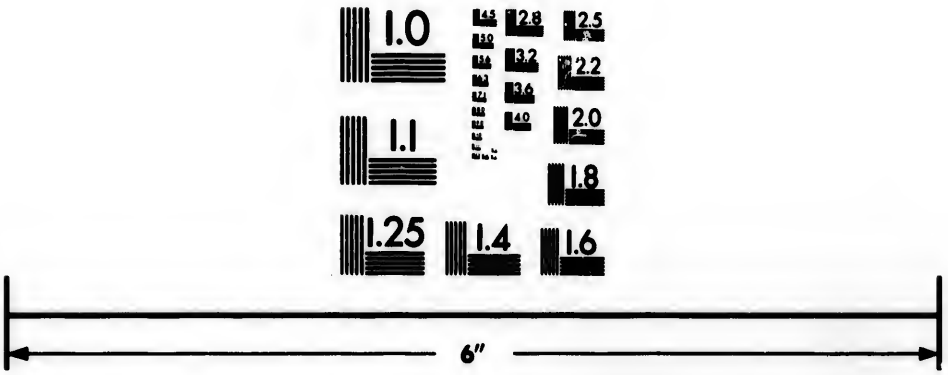

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