ATLAS

OF

COMMERCIAL GEOGRAPHY

ILLUSTRATING

THE GENERAL FACTS OF PHYSICAL, POLITICAL, ECONOMIC, AND STATISTICAL GEOGRAPHY, ON WHICH INTERNATIONAL COMMERCE DEPENDS.

BY

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F.R.S.E., F.R.G.S., etc.

WITH INTRODUCTORY NOTES

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INTRODUCTORY NOTES
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In this collection of Maps, which is the first of its kind, Physical Geography is viewed as the permanent basis of Commercial Geography, and consequently prominence is given to those physical conditions of the Earth which directly affect commerce, and to the distribution of commodities. The number of plates is unusual for so cheap a work, but yet not sufficient to admit of any attempt at exhaustive treatment; and the maps of the various countries are not on a sufficiently large scale to enable the advanced student to dispense with a reference Atlas. The contents have been arranged mainly with a view to educational utility; but business men will find in it much new and suggestive material.

Scientific Principles.

Two things and two only make up the physical universe. These are Matter and Energy, or to use simpler language, Substance and the Power of doing work. Substance, of which there are many kinds, includes the solid mass of the earth or lithosphere, the water of the oceans termed collectively the hydrosphere, and the gaseous atmosphere. It is modified in various ways by the vital processes of plants and animals. Power of doing work comes chiefly from the sun, and is made available by the movements of the air as wind, and of the ocean as currents, by the rise of vapour, and the fall of rain and snow, and by the flow of rivers. All these forms of power are taken advantage of to do work. In steam-ships and heat-engines of every kind work is also done ultimately by the sun's power. That power was either recently or long ago stored up by plants, and can be recovered by burning the resulting fuel such as wood, peat, coal, petroleum or natural gas. Fuel, although substance, is of value mainly for the power associated with it. Those kinds of substance and of power which are of special use to mankind are termed commodities.

Commercial Geography is the description of the Earth's surface with special regard to the discovery, production, transport and exchange of commodities. As a branch of education it is valuable in showing not only where the substances of our markets are procured, how they are carried and where they are usually sent; but also in directing attention to the scientific principles underlying trade. These principles explain the existence of our present fields of supply and markets for exchange, and also indicate the whereabouts of producing, exchanging and consuming regions which are as yet undeveloped.

The explanation however demands other considerations than those of physical science, which deals only with matter and energy. The different races and nations of men, their habits, customs and religions, have to be taken into account in order to understand the reasons for the demand that exists in certain places for particular commodities. The process of manufacture, by which substances which are naturally of little use can be increased in value, also involves many considerations which are not physical. The natural distribution of commodities is explained by the sciences of physics, geology, meteorology, biology etc., or collectively by Physiography. The various conditions of mankind as regards civilization and the desire for commodities are explained by the science of Sociology, and the connecting link which explains trade and commerce (that is the manufacture, exchange and transport of commodities) is found in the science of Economics or Political Economy.

The Use of Maps.

In order that Commercial Geography may be intelligently studied, text-books must be supplemented by maps, and in geography it is quite as important to be able to read maps and gather the information which is embodied in the lines and colours as it is to be able to read printed books. The maps in this Atlas have been specially prepared, and embody a vast mass of information not previously brought together. The writer of these notes has revised proofs of most of the general and a few of the special maps; it is hoped that they may serve as a complement to his "Elementary Commercial Geography."

The General Maps employed are constructed on two projections. Some (e.g. Maps 1, 14 etc.) are on Mercator's projection, which is universally used in navigation on account of the important property that the meridians and parallels being represented at right angles to each other and placed proportionally, all directions are correctly given. By means of the compass in Map 14 the student may, by the use of parallel rulers, get the bearing of any place on the Earth's surface from any other. It would be useful if such a compass were drawn correctly on the floor of the school-room or office, and each "point" marked with the name of the chief towns and countries that lie in its direction. In a Mercator Map the size of the regions in high latitudes is greatly exaggerated. One square inch near the equator in Map 1 includes 4,900,000 square miles, but about latitude 70° it only corresponds to 490,000 square miles, so that Greenland is magnified ten times compared with India.

The second (Maps 2—3, 4, 5 etc.) is Gall's stereographic projection, in which the parallels are drawn nearly equidistant from each other, thus distorting directions and giving an unreal outline to the land. Its advantage is that a square inch in any part of the map corresponds more nearly to an equal area of the Earth's surface. This kind of map is useful for representing the distribution of commodities, as the extent of coloured surface gives some idea of the size of the district. Map 13 a shows the Earth's surface on a true equal-area projection; a square inch taken at any part represents exactly the same number of square miles, and though the outlines are much distorted the area of every country is truly shown.

The Maps are designed to represent the most permanent features of importance in Commercial Geography. Consequently no attempt has been made to denote such fluctuating conditions as the tariffs of different countries or the amount of their trade. For the same reason statistical tables have been excluded from the atlas. They can be consulted in text-books, and works such as the "Statesman's Year Book" and the "Year Book of Commerce."

GENERAL MAPS.

1. Chart of the World showing Heights and Depths.
(Mercator's projection.)

Here the form of the land-surface and the sea-bed is shown by means of contour lines drawn first at 600 feet, then at 6000 feet and intervals of every nautical mile (6000 feet) of vertical distance. The white tint along the sea-margin indicates depths less than 100 fathoms or 600 feet. Commercially the 100 fathom contour line, which bounds the continental shelf, is the most important, as vessels when within it are "in soundings," i.e. the
sounding line can be easily used, and the depth decreases gradually towards the shore. The greater the distance of the 100 fathom line from shore the more useful it is as a warning of the approach to land, hence one advantage of the British Islands.

The comparatively large areas rising to within 100 fathoms of the surface round the Faeroe Islands—midway between Iceland and Scotland—round Iceland, and especially to the south-east of Newfoundland, are famous fishing banks.

(See Map 10.) The land under 600 feet in elevation contains most of the non-tropical towns of commercial importance. (See notes on Map 5.) The mountain ranges or lines of highest ground form the backbones of continents, from which the rivers diverge to opposite seas. The features of vertical relief determine the climate, and consequently the nature and number of plants, animals and people, of each region. This map should therefore be made familiar by long study.

A scale of miles applicable at each latitude is given in the left-hand lower corner. The figure “8000” on this scale is a misprint for “1500 miles.”

2—3. Characteristic Land Surface Features and Ocean Currents. (Gall’s projection.)

This illustrates the suitability of the land for cultivation, and of the water for carrying on transport. The colouring of the land surface explains itself, the region applicable for ordinary agriculture being that noted as “Temperate Forests, Grass and Cultivated Lands.” The relation of deserts to regions of low rainfall and extreme climate appears by comparison with Maps 4 a and 6. The Alpine plant regions, where similar plants occur in all latitudes close to and above the snow-line, are practically only obstacles to commerce.

It is noteworthy that the currents of the Atlantic and Pacific north of the Equator show a circulation of the surface water in the same direction as the hands of a watch move, and in the three oceans south of the equator in the contrary direction.

In the north of the Indian Ocean, amongst the islands of the Eastern Archipelago, and along the shores of continents generally, the currents alternate like the winds (Map 4 b), flowing in opposite directions in winter and summer. All currents indeed are dependent in great part on the prevailing winds, and in turn react on the climate (Map 6). The cold water of the Peru current, the Benguela current and the West Australian current wells up from beneath, as the trade wind is always driving the warmed-up surface water away to the west.

Knowledge of the ocean currents is of much importance in navigation. A vessel sailing west near the equator for example is steered into the west-flowing current to north or south so as to gain perhaps 50 miles a day, and to avoid the east-flowing counter equatorial current in which it would lose at least 20 miles a day.

4 a. Mean Annual Rainfall. (Gall’s projection.)

It will be noticed that wherever a prevailing wind (see 4 b) from the sea meets a mountain chain there is a heavy rainfall, while on the sheltered side of the mountains there is little or no rain. The rainless regions in this map (although not distinguished from regions with less rain than 10 inches per annum) correspond exactly to the desert regions in Map 2—3, occurring usually in the centre of continents. Where monsoons prevail and the sea-wind lasts only half a year, practically the whole annual rainfall is compressed into less than six months. The region between the limits of snowfall is quite free from snow at low levels, but snow lies on lofty mountains in all latitudes.

4 b. Prevailing Winds. (Gall’s projection.)

The features of this map are very important, for the climate of most countries and the routes of sailing vessels depend on the prevailing winds.

Monsoon winds blow alternately in opposite directions; from land to sea in winter, from sea to land in summer. At the transition periods severe storms are experienced, hence the Indian Ocean and Seas of China and Japan are made dangerous to navigation by terrible cyclonic storms called typhoons.

The north-east trade-winds north of the equator, and the south-east trade-winds south of the equator, are the best known steady winds, but they shift their position to a considerable extent in summer and winter. The usual limits at each season are marked on the map. The trades blow from the dry bright region of tropical calms, where the atmospheric pressure is always high, towards the rainy belt of equatorial calms, where the atmospheric pressure is always low. The “brave west winds” prevail south of 40° S. all the year round; they are exceptionally steady and contrast with the variable though prevailing south-westerly winds of Northern latitudes. This determines the route of vessels to New Zealand from Europe by the Cape of Good Hope and the return voyage by Cape Horn.

In water shallower than 100 fathoms (see Map 1) wind has a more powerful effect in raising dangerous waves than in the deep ocean.

The names of countries are given on the Rainfall map; some of the chief towns are marked on the Wind map, and as these two are on the same scale as all the maps Nos. 5, 6, 7, 8, 9, 11, 12, measurements may easily be made from one to the other.

5—6. Conditions of Climate. (Gall’s projection.)

The first two maps show isotherms, or lines of equal warmth (Fahrenheit degrees) in the atmosphere, at the extreme seasons January and July. The air grows cooler by 1° F. for every 270 feet of elevation above sea-level, but the lines on the map show the sea-level temperature in all cases. In using these maps we must therefore remember that places on the 600 feet contour line in Map 1 have a temperature 2° lower than the isotherms indicate; places on the 6000 feet line 22° lower; those on the 12,000 feet line 45°; and the mountain slopes on the 18,000 feet line no less than 66° lower than the sea-level temperature shown by the isotherms. This accounts for the fact that none of the important towns in the temperate zones are situated more than 2000 feet above the sea, whilst in the tropics they are built at such elevations as 8000 or 10,000 feet.

These maps show that in winter the lowest and in summer the highest temperature occurs in the centre of continents, while near the sea there is comparative uniformity. The effect of ocean currents on climate is conspicuous. For example the Gulf Stream affects the January isotherm of 32°, carrying it northwards, whilst the line curves sharply south again over Eurasia. Thus New York and Bokhara, both in 40° N. lat., have 32° as their average January temperature (the same as Iceland in 62° N.), while Lisbon, also in 40° N. but on the west coast of Europe, has 50° as its mean temperature for the same month. The influence of the sea on climate is made still plainer in Map 6 b, which combines the information of 6 a and b, showing the annual range of temperature or the number of degrees of difference between the average warmth of the extreme summer and winter months. The central Sahara should be coloured green.

The six annual isotherms in 6 a show what places have the same mean temperature. Thus the mean annual isotherm of 40° F. passes through Iceland and Lake Baikal in Central Asia; but by map 6 b, we see the range of warmth between summer and winter to be under 27°F. in Iceland, while at Lake Baikal it is about 80°, or the climate is three times as extreme. In Equatorial or tropical climates there is least range, because the temperature remains high at all seasons. Sea climates have also a small range of temperature; for the sea warms the air in winter, and cools it in summer. Land or Continental climate, experienced in the heart of Continents, is always the most extreme.

The map of range of temperature does not require any correction for altitude, the annual range of 9° for example holding
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good for all places through which the line passes. These maps have no place-names, but the reader, if not so familiar with the continents as to dispense with such aids, may trace the names from sheet 4 on thin transparent paper, place this over the map and prick the towns in their proper positions. This exercise will be found very useful in studying the maps.

7. Mineral Commodities. (Gall’s projection.)
The position of each of the important mining districts, or mines, is shown by an appropriate mark, so that these maps illustrate the regions where mineral commodities are practically produced. In the case of coal however the occurrence of extensive deposits of coal-bearing rocks is denoted by a special tint even where there are few or no mines. The coal-mines of China, although numerous, are very small, and the production of coal there is hampered by the want of machinery and railways. The coal-mines of Australia, of British Columbia and of Chile have almost the whole coal-trade of the Pacific coasts at their command. Calling-places on steamer routes (see Map 14—15) far from mines are kept up as coaling stations by export from England. As a rule extensive level plains contain little or no mineral wealth; over the great plains of South America, Hungary, and Russia for example, no building stone is to be found, and in many regions not even clay for brick-making.

8—9. Vegetable Products. (Gall’s projection.)
Vegetable productions are determined partly by the nature of the soil but mainly by climate, and vegetable commodities are produced almost entirely between 20° N. and 45° S. lat. The extent of dense tropical forests in hot wet regions is shown in Map 2—3; these forests yield little timber but many valuable products such as indigo-rubber, dye-woods, gums, resins, &c. The maps indicate roughly the area where special plants are usually grown, but do not distinguish degrees of fertility. In Map 8 a we see that Wheat, the most important food product, grows wherever the summer is bright and dry, Rice wherever hot, and wet land occurs. In 8 b it is seen how Barley and Oats flourish in the mild but damp sea climate of high northern latitudes, while Rye can stand a still more severe climate, being the chief food of the poor in the northern continental countries. Tobacco is an interesting example of a sub-tropical luxury, the cultivation of which has spread from America over the greater part of the tropical and temperate zones. In 8 c Maize or Indian Corn has also spread from America, and is extensively cultivated wherever the summer is hot enough to ripen the grain. Cotton, the most valuable textile plant, has two great centres of cultivation—one round the Gulf of Mexico, the other in India—but it can be grown in almost any sub-tropical climate. Map 9 a shows the distribution of the Potato, on which millions in Germany and Ireland depend as their chief food, the Date palm, which supplies every necessary of life to the Arabs, and the Coco-nut palm, fringing the shores of almost every tropical land and of commercial value mainly for copra, the dried kernel from which oil is extracted. The Saga palm is frequently associated with the coco-nut, and are the valuable tropical food-plants the banana and bread-fruit. 9 b deals with the three most general beverages. Tea-growing has recently spread from China, and the fragrant-leaved plant has been cultivated successfully in many parts of the world; it is consumed chiefly in China, Britain and Australia. Coffee, the berry of which enters into commerce, has spread from Africa, where it is now little grown, to Brazil and the Eastern Archipelago, where there are many plantations. It is used greatly in Mohammedan countries, in America, and on the continent of Europe. Wine-making can only be carried on within the limits of growth of the vine (Maps 2—3), but as yet it is a leading industry in Europe only. The distribution of the Sugar Cane in 9 c illustrates the original sources of sugar, which is now however produced to an almost equal amount from the Sugar-beet in Europe and from other plants elsewhere. The Coco-nut tree, from the seeds of which cocoa and chocolate are manufactured, is a native of Central America.

10. Animal Products. (Gall’s projection.)
On the large map the distribution of cattle, sheep and goats is shown by colours. As a rule, where cattle are represented sheep exist also, except in the case of India, where there are many cattle but remarkably few sheep. The names of other animals and animal products are entered on the map; but it must be borne in mind that whales, fur-seals, elephants and other wild animals already rare and valuable are steadily becoming scarcer in their old haunts. The two small maps are on Mercator’s projection; one shows the distribution of horses, the other that of swine and of the wild pig. It must be remembered that all domestic animals were introduced by immigrants to the western and southern continents, the wild horses of America being descended from tame horses of Europe.

11 a. Diseases peculiar to Countries. (Gall’s projection.)
This shows a few of the diseases which are endemic in different parts of the world, marking out those places where a slight increase of the disease which is always present may give rise to quarantine restrictions on vessels sailing thence. As a rule, with proper sanitary precautions, towns in the hottest climates can be kept comparatively healthy. The filthy state of the Coast cities of South America rather than the heat of the climate accounts for the prevalence of yellow fever. Malaria is always present in hot marshy districts.

11 b. Density of Population. (Gall’s projection.)
This is an extremely important map, the importance of which cannot be over-estimated. The chief centres of population in hot climates, e.g. China, India, Egypt, are usually agricultural, depending on great fertility of the soil. By the progress of civilisation and the extension of commerce the population has also become very dense in manufacturing regions, on account of the demand for labour where coal and iron are abundant and where machinery is made and used. Railway maps of such districts usually show the distribution of population very clearly. Many of the regions now thinly peopled must always remain so, as they are seen by comparison with Map 2—3 to be either deserts like the northern tundras, the Sahara or Central Australia, or continuous forests like the Selvas of the Amazons. Cultivable land in remote regions is also thinly peopled, but there a denser population is spreading steadily.

Comparing this Map with Nos. 2—3, 5, 6, 7, 8, 9, 10 the regions where there is most room and least inducements for emigration may readily be found. Of those the most important are central North America, South Africa, Australia, New Zealand, the Argentine Republic and Brazil.

12 a. The Chief Races of Man. (Gall’s projection.)
All the varieties of mankind may be classed into three great groups, those of the Black, Yellow and White types. The races of the Black type are the least civilised; the most numerous of them are the Sudanese or Negroes of Africa south of the Sahara, and the Bantus who inhabit the whole of the great table-lands of that Continent. The races of the Yellow or Mongolian type include the Mongolians of Asia, the Turks and Magyars of Europe, the Eskimos and “Red Indians” of America and the peoples of the Malay and Polynesian islands. Some, such as the Chinese and Japanese, are highly civilised. The White type (coloured red in the map) comprises the most civilised, advanced and progressive people in existence. There are three great families, Hamitic, Semitic and Aryan. The dark Hottentots of northern Africa resemble the Black type in complexion. The Semits comprise the Arabs of Arabia, Syria and North Africa, and the Jews, who have no country but are scattered over the whole world. The Aryans are sub-divided
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into the Celtic, Teutonic (or Germanic), Romanic and Slavonic races who people Europe. They are spreading rapidly; the Slavonic Russians are taking possession of Northern Asia, the Northern Teutonic races, including the people of the United Kingdom (classed as "English" for convenience), Scandinavia and Germany, have spread over North America and Australia; the Southern Romanic nations of Spain and Portugal over South America.

In addition to the general colouring into types and the names of the great divisions the map shows the names of many tribes and nations of less importance.

124. The leading religions of Man.

The Christian religion prevails in those regions coloured as Western and Eastern churches, with their subdivisions, and is extending. Mohammedanism is also extending rapidly in Africa amongst the Sudanese Negroes. Buddhism is almost confined to eastern Asia and Brahmanism, or Hinduism, to India. The other religions are classed together as " Heathen."

The commercial importance of this map lies in the fact that religious customs often modify the trade of whole nations. For example, in most protestant countries Sunday is observed strictly as a day of rest. Where Roman Catholicism prevails there is always a strong demand for fish fresh or salted. In Mohammedan countries the use of alcoholic liquors is forbidden. In studying these maps care must be taken to allow for the density of population (Map 11); and it must be borne in mind that in all civilised countries, especially in protestant countries, there is complete freedom in religion, and no one form is held as binding by the community.

13a. Isochronic Distance Chart. (Equal area projection.)

The time in days required to travel by the fastest route from London is indicated by the colouring. It will be observed that over 40 days is only needed to reach the interior of continents in which railways have not yet been built. This map supplies a rough memorandum of the greatest time required to send a letter from London to any place; but as shorter routes are frequently opened and the rate of travelling is increased the time is in many cases considerably less than is shown.

13b. Postal Map. (Mercator's projection.)

This shows the minimum postage on letters sent from any part of the United Kingdom. Distance, it will be observed, is no barrier to cheap communication, for the 3d. rate extends over the greater part of the Northern Hemisphere. It is significant (though this could not be shown on the map) that the rate of postage to distant British colonies from the United Kingdom is higher than that charged from any other European country. The regions left uncoloured have not as yet any organised postal service.

14—15. Commercial Map of the World. (Mercator's projection.)

This map summarises most of those which precede it, and shows how far the natural conditions of climate and commodities have been taken advantage of commercially.

16a. The British Empire, showing degree of Self-Government. (Mercator's projection.)

The possessions of the British Empire governed directly by the Crown, or rather by Secretaries of State in the British Government, are usually those which have been recently settled, or which contain a large majority of uncivilised natives. Other Colonies are under Representative governments; the local parliaments being partly elected by the people and partly nominated by the Governor, who is in all cases sent out by the British Colonial Office. The most developed colonies have complete Responsible government and are commercially independent states. All make tariff laws which apply to imports from the United Kingdom as strictly as to those from any other country. Countries under British influence are controlled more or less completely by the British Government. Egypt is in a state of military occupation, Persia is controlled diplomatically, and in Asia-Minor the United Kingdom holds itself responsible for maintaining order.

16b. Principal European Colonial Empires. (Mercator's projection.)

The French possessions were once extensive in North America and India; their present extent is shown on the first small map, along with the much more valuable colonies of Holland, comprising practically the whole Eastern Archipelago, and with the increasing dependencies of Germany. Germany was so late in the field as a colonising power that it has had to be content with inferior climates and slight fertility in its possessions.

The second small map shows the small possessions of Spain and Portugal, which were once more extensive than those of any other nations. All the republics of South America belonged to Spain and their people still speak Spanish, the empire of Brazil belonged to Portugal and its people speak Portuguese.

Italy has some colonies on the Red Sea and exercises a protectorate over Abyssinia. Denmark possesses the Faeroe Islands, Iceland, Greenland and a few valuable islands in the West Indies, the chief being St Thomas.

SPECIAL MAPS.

These are printed on a uniform system so as to give due prominence to physical features; to secure this, besides marking mountains and rivers, the height of the land is shown by colouring places more and less than 600 feet above the sea in special tints. The continental shelf (the importance of which is referred to in the note on Map 1) is shown in a lighter shade of blue than the rest of the sea. Boundaries of countries are given by a firm red line, and some of the more important commercial products are printed in red; small type being used for animal, capitals for vegetable and mineral products.

17. Europe.

The scale of the map is too small to show satisfactorily that much of Holland is below sea-level. Across Russia a broad tract of extremely fertile soil—the Land of the Black Earth—extends from Rumania to Kazan and Samara. This is the great wheat region and is separated from the Black Sea ports by a narrow strip of barren steppe-land.

18. Railway Map of Central Europe.

The through railway routes and chief towns are marked prominently and in sufficient detail to show some of the characteristics of the different countries. The railways of France are seen to radiate from Paris as a centre, those of Germany have no definite system, although a certain amount of centralisation is shown at every large town. The Pyrenees range entirely stops railway communication, whilst the greater mass of the Alps is pierced in three places by tunnels giving access to Italy from France and through Switzerland and Austria from Germany.


The chief railways of the United Kingdom are shown in their connections with continental systems. The through lines are marked strongly and the coal fields traversed by these railways are indicated. Reference to the following maps will show that the coal fields and places where the railway network is close are the most densely peopled industrial regions, and this is true of the continent as well as of the British Isles.

20a. British Isles, orographical features.

This map should be attentively studied in relation to Maps 19 to 21. It will then be seen that the highest land is the
most thinly peopled, that it is mainly of value for pasture, and that the rainfall on the seaward side of high land is greater than on the lower-lying country. In Great Britain the country as a whole becomes lower and flatter as it widens out to the South.


The rainfall is heavier in the west than the east, and is less in the south-east of England than in any other part of the islands. This accounts for the region richest in pasture, which requires mild wet weather, lying west of the best crop-yielding lands, which require much sunshine. (See 20 c and d.)

The co-tidal lines show the places where high-tide occurs at the same time; and the figure attached to each line gives the time of high water when the moon is new or full; high water occurs about an hour later each day after these periods. The direction of the current during flood tide is shown by a barbed arrow, and that during ebb-tide by a plain arrow.


These maps are coloured according to the proportion of land in each county which was under crops of grain or roots, and under pasture grass, at the census of 1881. They show at a glance in what parts of the country corn-growing or sheep and cattle feeding predominates in Agriculture. The names of counties in which the chief town has the same name are usually omitted in these maps.


The natural resources of the British Islands here shown represent but a small part of the available wealth of the United Kingdom, as nearly everything except coal and iron is imported to a greater or less extent from other countries. Where "iron" is mentioned on the map coal also occurs in the vicinity.


The data are those of the census of 1881. Maps c and d supply an analysis of Map b, showing how the two great classes of the working community are distributed. In some regions, such as the midland plain of Scotland and the north-east of Ireland, both agricultural and industrial population comes to a maximum; but in England it is seen that the south-east is the most agricultural and the north-west, north-east and centre (where the great coal fields are) the most industrial parts of the country.

22. Asia.

The northern part of the map is occupied by the great Russian possession of Siberia; a telegraph wire stretches along the route of the projected railway, which is shown by a dotted line. The vast, fertile and densely peopled land of China proper is as yet scarcely open to European commerce, and its great outlying provinces Manchuria, Mongolia, Szechuan, Eastern Turkestan and Tibet are closed to foreign trade. Upper Burma, although represented as a separate country, is simply a province of the Indian Empire. Cambodia, French Cochin China and Anam are all French possessions.

23. Africa.

The great desert of the Sahara occupies the whole of Africa north of 20° N. except the coast strip and the Nile valley. The inland towns of this region are situated on date-growing oases. Some small areas in the north are below sea-level. South of this the fertile region of the Sudan stretches across Africa and is occupied by a number of negro kingdoms. The great Niger delta, covered with oil-palms, and a strip of land along the navigable course of the Niger and its tributary the Bimou, are governed by a British trading company. On the east coast just south of the equator the Imperial British East African Company has control of the country stretching through Masai Land to Victoria Nyanza. South of this is the territory of a German Company. In Cape Colony Springbokfontein near the west coast is close to the copper mines of Ookiep and in connection with the harbour of Port Nolloth, which is not shown. The small size of the map makes it impossible to show the results of the rapid development of the Transvaal or South African Republic in consequence of its gold fields. A large town, Johannesburg, has recently sprung up south of the little capital Pretoria.


The boundary between Canada and the United States runs along the axis of Lake Superior and of Lake Huron (Lake Michigan lying wholly in the United States), then through Lakes Erie and Ontario to the St Lawrence. The valley of the Red River of the North and the region stretching west from it to the Rocky Mountains is at present progressing very rapidly on account of its great fertility in wheat.

25. North Atlantic Ocean. (Mercator's Projection.)

This map is designed to show the connection of the various steamer routes across the North Atlantic with the ports of Europe and the trans-continental railways of America. The Canadian Pacific Railway now furnishes the quickest route between Europe and the east of Asia. The St Lawrence estuary is frozen in winter, and then Canadian steamers touch either at Halifax (Nova Scotia) or at Portland (Maine) in the United States. The telegraph cables in operation are shown in the map, and also the proposed steamer routes to Central Canada through Hudson's Bay, and to Australia by the Panama Canal, not yet finished.

26. South America.

The grand backbone of the Andes on the west and the three great river plains sloping to the east are shown very effectively. The flat plain of the Orinoco forms the llanos, which are alternately flooded and parched according to the season. The vast and densely wooded basin of the Amazon is appropriately called the selva. The plain of the Parana and Paraguay, naturally covered with grass and thistles, is termed the pampas, and is being rapidly covered with sheep and cattle, while on account of the flatness of the land railways are extending in all directions. The boundaries of South American countries frequently change, as wars and revolutions continually occur in the Spanish-speaking republics. Two remarkable railways in Peru ascend to a greater altitude than any others in the world; one runs from Lima to Cerro de Pasco, another from Molinondo (close to Islay) up to Lake Titicaca and northward to Cuzco.

27. Australasia.

This map includes the Philippine Islands, which are Spanish possessions, and the islands of the Eastern Archipelago, most of which are Dutch. The north and west of Borneo are under British control, the east end of Timor is Portuguese, and the east end of New Guinea partly British and partly German. The German territory includes New Britain and New Ireland (now called the Bismarck Archipelago) and the Solomon Islands. New Caledonia is a French penal settlement. All the rest of the land shown is divided between British Colonies. The greatest pearl-shell fishery of Australia is carried on from Sharks Bay on the west coast.
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   7. **b. Do. Isotherms for July.**
   8. **a. Do. Mean Annual Isotherms.**
   9. **b. Do. Range between Summer and Winter Extremes.**
10. **Distribution of Mineral Commodities.**
11. **Do. Vegetable Commodities.**
12. **Do.**
13. **Do. Animals of Importance to Commerce.**
14. **a. Do. Certain Diseases peculiar to Countries.**
15. **b. Do. Population, according to Density.**
16. **a. Do. The Leading Races of Man.**
17. **b. Do. The Leading Religions of Man.**
18. **a. Isochronic Distance Chart.**
19. **b. Postal Map.**
20. **Countries open to, and available for, Commercial Enterprise, with the existing and projected International Highways.**
21. **a. The British Empire, coloured to show Degree of Self-Government.**
22. **b. Principal European Colonial Empires.**

### SPECIAL MAPS.

23. **Europe, showing Physical, Political and Commercial Features.**
24. **Central Europe, showing Railways, &c.**
25. **The British Isles and North Sea, showing Railways and Steamer Routes.**
27. **c. Land under Crops. d. Pasture Land.**
30. **Asia, showing Physical, Political and Commercial Features.**
31. **Africa, do. do. do.**
32. **North America, do. do. do.**
33. **North Atlantic Ocean, and Bordering Countries, showing Routes, &c.**
34. **South America, showing Physical, Political and Commercial Features.**
35. **Australasia, do. do. do.**
Mean Annual Rainfall

With Limits of Snowfall

- Less than 10 inches
- From 10 to 25 inches
- 25 to 40 inches

Prevaling Winds

The arrows show the directions of the winds.

- Northern Winter: Northern Hemisphere
- Southern Winter: Southern Hemisphere
- Limit of Melting Ice during the Northern Winter
RAILWAY MAP OF BRITISH ISLES
AND CONTINENTAL CONNECTIONS

NOTE
The Principal Coafields are shown with a red tint.