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THE STORY OF THE LAST HUNDRED YEARS

A GEOGRAPHICAL RECORD

BY

GEORGE PHILIP

1834



1934





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F O R E W O R D

THIS little Record of Geographical Progress has been written to commemorate the Centenary Year of the House of Philip as Geographical and Educational Publishers.

Within the last hundred years, the hidden secrets of the world have, one after another, been unveiled, and Geography, by its co-ordination of the results of scientific research into the Geological History of the Earth, its Climate and Physical Conditions, and their effects on Human Development and all other forms of organic life, has gradually come to be recognised as one, and not the least, among the Natural Sciences.

In the belief that George Philip & Son has contributed to this growth of Geography as a Science, through the works it has issued by eminent geographers and writers on other educational subjects during the last hundred years, it has been thought not over-presumptuous that some record of the Firm's many-sided publishing activities should be interwoven in this little Survey of Discovery and Geographical Progress.

May 1934.

GEORGE PHILIP.

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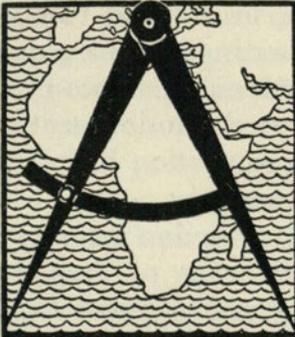
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CHAPTER I

THE WORLD A HUNDRED YEARS AGO

§ 1. *The Shaping of the Modern World*



CENTURY ago, world conditions in many aspects were not dissimilar from those prevailing to-day. In 1834, as in 1934, a world-wide conflagration had flickered out, less than twenty years earlier, in general exhaustion, definitely bringing to a close an epoch in human history. Great Congresses of statesmen met, in 1815 in Vienna, and in 1919 in Versailles, to effect permanent settlements for the maintenance of peace, and to reconstruct the map of Europe. From the earlier Congress emerged a League of Peace, in which the four Great Powers pledged themselves to preserve inviolate the terms of the Vienna Treaty, and to hold periodic conferences to avert future wars by settling international disputes through diplomatic channels; a League that survived only in the emasculated form of the "Concert of Europe," which, by preserving the "Balance of Power," continued to aim, not always successfully, at maintaining the peace of the world. From the deliberations of the peace-makers of 1919 grew the League of Nations, with its lofty aim of substituting a lasting reign of Law and Order for that of Force. The

present time sees the effectiveness of the League, weakened from its inception by the abstention of the United States and the Russian Soviet Republics, still further endangered by the withdrawal of two of its most important members, Germany and Japan.

Events in the earlier post-war periods of the eighteenth and nineteenth centuries shaped themselves also on parallel lines. The dreams of a new Era of Peace and Plenty proved to be empty indeed. Trade, in a world ruined by the waste of war, instead of expanding, shrank; unemployment assumed gigantic proportions, all hopes of a better order of things died out in bitter disillusionment, a general unrest began to prevail and revolution in many countries completed the chaos left by war.

From 1815 onwards, a period of reaction set in in Europe: a struggle between the old order of despotic government and the ideals of personal and national freedom bred of the French Revolution. This spirit of freedom had grown to be a potent force throughout Europe during the Napoleonic Wars—just as the same spirit was reborn in the Great War. Unhappily the three autocratic Empires, forming with France and Britain the so-called League of Peace, sought by repressive measures to stamp out these revolutionary ideas, and a series of revolts against authority broke out in Spain, Portugal, Italy and Greece, followed by the rising of the South American colonies against the harsh misgovernment of Spain, and the declaration of independence of Greece, the first of the Balkan States to cast off the shackles of the decrepit Ottoman Empire.

Britain, which in 1783 had seen her earlier Colonial Empire fall into ruins with the secession of her North American colonies, had emerged from the Napoleonic

THE SHAPING OF THE MODERN WORLD

Wars as the greatest Power in the world, with an unchallenged dominion of the seas, a new Colonial Empire girdling the globe, a virtual monopoly of sea-borne trade, while as a result of her Industrial Revolution she had become the Workshop of the World.

But with all this power and wealth, social conditions in the United Kingdom, and especially in the new manufacturing towns of northern and central England, were deplorable. The Industrial Revolution, with its development of the coal and iron resources of the country, and the introduction of machinery and steam power, had made England supreme in industry, and the population of the British Isles had grown from 14 millions in 1793 to 19 millions in 1815, an increase of 35 per cent. in twenty-two years. The wealth of the country had become concentrated in the hands of a small hereditary class of landowners (in whom, by means of an unrepresentative electoral system, all political power was vested) and a new middle class of industrial capitalists. Separated from them by a deep gulf were the working classes, living a life of endless toil, men, women and children alike, for a mere pittance; crowded together in mean hovels in the country or the even meaner streets of ugly and insanitary manufacturing towns; one-fourth of them enduring the slavery of the Poor Law, and all subject to a ferocious penal code which prescribed the death sentence or transportation for the most trivial offences against property.

These evil social conditions rapidly worsened in the years following the war. The British Workshop could not sell its goods abroad because of the impoverishment of Europe, factories closed down, wages fell, prices rose after the passing of the Corn Law, which raised the

price of bread, and unemployment grew to enormous proportions. Food riots became more and more frequent, and wise men, seeing in them the shadow of a coming revolution, began to press for wide measures of reform: reform of the penal code and of the electoral system, recognition of the right of working men to form unions for their protection and for the abolition of the disabilities under which Dissenters and Catholics had suffered. After years of struggle against the forces of Reaction, the Party of Reform at last received its reward through the passing of the Reform Act of 1832, one hundred and two years ago.

§ 2. *The World in 1834*

When the world was a hundred years younger, France was in almost total eclipse as a Colonial Power, though, by the capture of Algiers in 1830, she had already laid the foundations of a second overseas empire. All the Spanish and Portuguese colonies of South America had thrown off their allegiance to their parent countries, Holland had been forced to surrender the Cape and Ceylon to England, and for a time had suffered the loss of Java; and only Russia of all the colonising Powers, save Britain, had expanded, stretching out her tentacles eastwards to the Pacific, and southwards across the crest of the Caucasus.

Britain, on the other hand, as she stood on the threshold of that period of further expansion in every sphere of her national and colonial activity which we have come to call the Victorian Age, with her rapidly growing Overseas Empire held firmly together through her unchallenged sea power, was incontestably the supreme Colonial Power of the world. Her flag floated over all those vast empty

tracts of the temperate zones whither her surplus population could be transplanted, and where under a more enlightened colonial policy the new settlers were able, through the grants of representative institutions, to develop towards nationhood as citizens of a Commonwealth of British peoples. Already by 1834 the first steps towards nationhood had been taken. In North America, besides Newfoundland, the oldest British colony, the five Canadian colonies were in possession of self-governing institutions. On the Australian coastlands, first charted by Captain Cook in 1788, a steady stream of free colonists had settled in the ten years prior to 1834—round Port Phillip, near Melbourne, the Swan River in Western Australia, and at Adelaide in South Australia, while sheep breeding had been introduced in the beginning of the century, and the exploration of the interior had begun, through the journeys of Hume and Oxley, over the Blue Mountains to the Murray basin. New Zealand was not definitely annexed till 1840, but missionary enterprise among the Maoris had commenced in 1814, opening the way to later colonisation. In the Cape, captured from the Dutch in 1795, restored in 1801 and first permanently occupied as a British colony in 1806, settlement by British colonists was far more gradual and progress was slower, partly because of the hostility of the Dutch Boers and partly because the settlers were encircled by the warlike Kaffir and other Bantu tribes, with whom conflicts grew more frequent as the country eastwards from the Cape was gradually wrested from its native owners.

In the tropical belt also, British ascendancy had grown. In tropical America, the West Indian Islands, lost in 1783, had been restored, Trinidad had been taken from Spain

and British Honduras had been definitely annexed; in Tropical Africa, to the older trading factories on the west coast had been added settlements at Sierra Leone and Bathurst on the Gambia, the former, a colony of freed slaves, replanted on their native soil through the agency of the Anti-Slave Trade movement, by whose efforts the 750,000 slaves estimated to be living within the British Empire were emancipated by the Act of 1833 for the Abolition of Slavery within the British Dominions.

In Tropical Asia, a vast dominion had been consolidated in the peninsula of India, as the victorious result of the long Anglo-French struggle for supremacy. Apart from a few isolated trading factories, such as Chandernagore and Pondicherry, France lost all her Indian possessions, and the whole sub-continent was parcelled out into provinces directly administered by the British, or left as feudatory states held by native princes under the Crown. Further, Singapore, commanding the southern entrance to the Straits of Malacca and thus controlling the trade routes to the Far East, became a British colony in 1819, and five years later, Malacca and the Straits Settlements on the Malay Peninsula were acquired.

We see, then, that already a hundred years ago Britain and her young overseas colonies had become a world-wide Empire, with her far-scattered dominions linked together by a chain of trading or fortified outposts, protecting her communications and sea-borne commerce—such as Gibraltar and Malta in the Mediterranean, the lonely islands of St. Helena and Ascension in the Atlantic, Mauritius and the Seychelles in the Indian Ocean, and Singapore, the gateway to the Far East.

In the years following the Napoleonic Wars, the char-

acter of our modern civilisation was fashioned. It was a period of intense industrial and intellectual activity. The foundations of modern methods of scientific investigation were being laid and the results applied to industry. Steam-driven machinery began to take the place of hand power in the factories, and a complete revolution in sea and land transport was inaugurated when in 1827 a little Dutch paddle-steamer, the *Calpé*, of only 438 tons, driven entirely by her own engines, in thirty days crossed the Atlantic; and when the first railways were opened, from Stockton to Darlington in 1825 and from Liverpool to Manchester in 1830.

It was also a Golden Age of Literature. Thinking men had begun to search for the causes which had produced so much poverty and unrest, to realise the moral issues involved and to urge a wider liberty and measures of reform. Their aspirations were voiced by Wordsworth, Coleridge and Scott, by Shelley, Keats and Byron, and though their voices had grown silent by 1834, a new galaxy of writers, Macaulay, Carlisle and Ruskin, Mill and Grote, Tennyson, Browning and Dickens, were beginning already to take their place.

The scientific achievements of the age—in Mathematics, Astronomy, Physics, Chemistry, Biology and Sociology—are summed up in the famous *Cours de Philosophie* of Auguste Comte (1789–1857). It classified the work of, among others, Faraday, Humphry Davy and Liebig in Chemistry and Physics, le Verrier in Astronomy, Lyell and Murchison in Geology, Humboldt and Carl Ritter in Geography.

§ 3. *Geography as it was One Hundred Years Ago*

With these last two names, this record of geographical progress in the last hundred years may fittingly begin. Alexander von Humboldt (1769-1859) was a diplomat, a traveller and a scientist of the first rank. His thoughts were first turned towards exploration and the investigation of geographical problems by George Forster, the companion of Cook on his second voyage. He conducted scientific expeditions to Tropical America—in the Orinoco basin and the Andean plateau of Bogotá, and in Asia—the Urals, Altai and Jungaria. As a professor at Berlin University and in Paris, while compatriots like Goethe and Schiller were occupied with speculative or romantic writings, he devoted himself to the exact sciences and, in the universality of his genius, made important contributions to Geology, Astronomy, Zoology, and Mineralogy. It may justly be said that Humboldt was the founder of the modern sciences dealing with Climatology—his were the first Isothermal maps—Oceanography, the Geography of Plants and, above all, of the study of Geography from its physical basis. His *Cosmos*, published between 1845 and 1848, in which he gathered up the results of a long life spent in patient investigation of every branch of geographical science, is illuminated by a deep insight into the phenomena of nature in their relations to the moral and physical welfare of mankind.

With the name of Humboldt as one of the fathers of Modern Geography must be coupled that of Carl Ritter.

Ritter (1779-1859), in his lectures as Professor of Geography at Berlin University and his *Geography in Relation to Nature and the History of Mankind*, first made

use of the comparative method in dealing with geographical problems, and elaborated this method more fully in his monumental *Vergleichende Erdkunde*, of which he only lived to complete the volumes on Asia and part of Africa.

A hundred years ago, apart from Europe and the regions of European settlement in distant parts of the world, only the coastlands of the continents had been accurately mapped. Almost the whole of the interiors of Australia and, excepting the Nile valley, of Africa, was unknown, together with immense tracts in Asia and America and vast expanses of the ocean. The great voyages of discovery of Captain Cook in all the seas, between 1768 and 1780, and the interest in Geography created by Humboldt, had indeed aroused a new enthusiasm for exploration. Cook had coasted the ice-fringed shores of the Antarctic continent, penetrated the Bering Strait, discovered the Sandwich Isles, New Caledonia and other island groups of the Pacific. Above all, he had charted the east coast of Australia, and proved New Zealand to be not one island, as its Dutch discoverer, Tasman, had thought more than two hundred years earlier, but two.

From this new-born enthusiasm for exploration sprang the African Association, formed in 1788 to promote discovery in Africa and elsewhere—the forerunner of the Royal Geographical Society, founded forty-two years later. The same enthusiasm penetrated the Royal Society (founded 1662), which was mainly instrumental in dispatching Cook on his first voyage of discovery, and which opened the pages of its *Philosophical Transactions* to papers on subjects of geographical interest. The period of modern scientific exploration had begun.

In Africa, the course of the middle Niger had already

been explored by Mungo Park in 1795, and its lower course by Lander in 1830. By 1828 Lake Chad had been discovered by Clapperton and Denham and Timbuktu reached by Caillé and by Laing. In Asia, Barnes explored the Hindukush in 1832. In America, MacKenzie in 1789 followed the course of the river which bears his name down to the Arctic Ocean; Lewis and Clark had blazed a trail right across the American continent to the Pacific in the early years of the nineteenth century; and Humboldt, perhaps the first really scientific traveller, between 1787 and 1804 explored the basin of the Orinoco and the Andean plateau of Bogotá and ascended Chimborazo. In Australia, between 1819 and 1831, Hume and Oxley crossed the Blue Mountains, and Sturt explored the Murray and Darling Rivers. In the North Polar Regions, within the same period, Melville Island and Banks Land were discovered by Parry, Boothia Felix by John Ross, and the North Magnetic Pole by James Clarke Ross and Franklin; and in the South Polar Regions, Smith discovered the South Shetlands and South Orkneys, the Weddell Sea was charted by Weddell and Enderby Island by Biscoe.

The steady expansion of the geographical horizon, due to these discoveries and the powerful influence exercised by Humboldt, led to the foundation of the first Geographical Society, that of Paris, in 1821, followed in 1828 by that of the Berlin Society, and, as a development of the Raleigh Club, formed in 1827 by a small body of British travellers and geographers, by the foundation of the Royal Geographical Society in London in 1830.

§ 4. *The Founding of George Philip & Son in 1834*

This brief survey of the world before 1834 serves to show that a century ago it was throbbing with new activities and new ideas, heralding the beginning of a fresh epoch in human history. In no other sphere were these activities and ideas more prevalent than in that of Geography. It was therefore under the most promising conditions that in 1834, barely four years after the Royal Geographical Society had come into being, a young Scotsman, by name George Philip, founded the Firm of Geographical Publishers which still bears his name. The history of the fortunes of the Firm and its publishing activities are interwoven so closely with the story of Geographical Progress during the last hundred years, that a common description may serve for both, and accordingly, in this brief Record, written to commemorate the Centenary of George Philip & Son, this course has been followed.

George Philip was born in 1800 at Huntly in Aberdeenshire. Huntly, with its crumbling castle, frowning down on a clear trout stream below, is the market town for the district of Strathbogie, famous in the history of the Disruption of the Scottish Kirk; and George Philip's forbears came of yeoman stock: Godfearing, dour, Calvinistic folk. His father was a farmer, and a pillar of the kirk of which George Cowie, the "Whitfield of the North," was the minister. George Philip and his two brothers, Robert and John, who, with a group of their school companions, all later carved out successful careers away from the land of their birth, owed much to their early training in the Sunday School—a novelty of the time—connected with Mr. Cowie's church. Robert, the eldest

brother, came as a young man under the influence of the Aberdeen Congregational minister, Dr. John Philip, a far-off connection of the family, who later, as the superintendent of the Cape C.M.S. missions, played a prominent part in shaping the earlier colonial policy of South Africa. Under this influence, Robert discarded business for the ministry and became a distinguished Nonconformist divine, first at Newington Chapel, Liverpool (1814), and afterwards at Maberly Chapel, London. He was a voluminous writer of devotional books, which had a great vogue in their day in this country and America, and was also the author of well-known Lives of George Whitfield and John Bunyan. John, the second brother, also embraced the ministry, settling at Weldon in Northamptonshire, and dying at a comparatively early age, while preaching his mother's funeral sermon. In later years, descendants of both brothers became identified with the Firm founded by George, the youngest of the three.

Among the school friends of the Philip boys who later achieved distinction were William Milne, the celebrated Chinese missionary, James Legge, the Chinese missionary and Professor of Chinese at the University of Oxford, and George MacDonald, the Scottish novelist and poet.

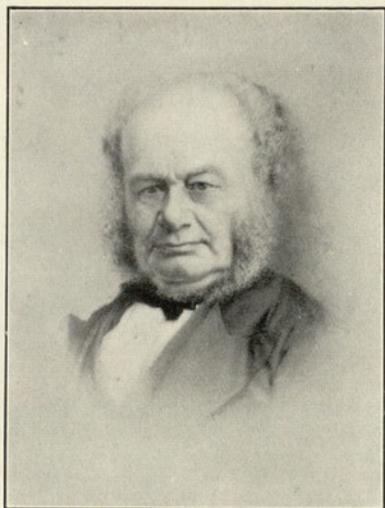
George Philip followed his brother Robert to Liverpool in 1819, obtaining, probably through his brother's influence, an appointment as managing assistant to William Grapel, then the leading bookseller in the town, with whom he remained till 1834. Liverpool by then had grown to be the first seaport in the kingdom. Her citizens had become wealthy through the iniquitous traffic in slaves, for which Liverpool was the leading port up to the abolition of slavery in 1807, and later through the

rich harvest in captured enemy ships brought in to the Mersey by Liverpool privateers during the Napoleonic Wars, which more than compensated the shipowners for the shrinkage of their foreign trade due to the war. Other and more legitimate causes of her growing wealth sprang from the Industrial Revolution; the throwing open of trade to British merchants in India in 1813, the Far East in 1833 and South America after the declaration of independence of the Spanish and Portuguese colonies; and the growing trade connection with New York. It was through Liverpool that the great textile and other industries of Lancashire and Yorkshire—which had expanded enormously through the introduction of steam-driven machinery—drew their supplies of raw materials, while the network of new roads and canals which had spread over England facilitated the distribution over the country of Liverpool imports of colonial and foreign merchandise. These means of transport had already begun to be revolutionised by the advent of the railway and the steamship, for Liverpool had been linked by rail with Manchester in 1830, and the first steamer had begun to ply on the Mersey as early as 1815, while the *Royal William*, built and engined in Liverpool, crossed the Atlantic in 1838 in 17 days. Liverpool thus stood on the crest of progress in 1834. Her population of 5,000 in 1700, on the eve of the Industrial Revolution, had increased to 60,000 in 1792 and now numbered upwards of 265,000; the tonnage of her ships entering and leaving the Mersey had risen from 540,000 tons in 1792 to over a million and three-quarter tons; and her dock area, no more than 8 acres in 1760, now covered over 70 acres.

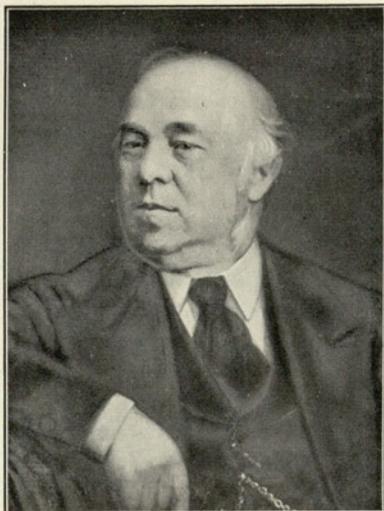
It was in this flourishing seaport that George Philip

started in business for himself as a bookseller in 1834, in Paradise Street, a street that had been built over the upper reaches of the "Pool" from which Liverpool derives its name.

He was a shrewd and canny Scot, bound to succeed. His short, stolid figure was surmounted by a large head, the face surrounded with a bush of sandy hair, and he might well have been taken for one of the weather-beaten sea-captains that haunted the Liverpool quays. He combined in a remarkable degree a noteworthy flair for business organisation and finance with a taste for contemporary literature and art, and the present writer, the third George Philip to bear the name, well remembers him as an old man in the late seventies, still active in business, and keenly interested in his stocks and shares and in his valuable collection of water-colours by British painters of the Victorian Age; a figure the like of whom may be found over and over again in the pages of the *Forsyte Saga*. In 1880, Mr. Philip retired and spent his last years in Kent among his pictures and his friends. Among the latter may be mentioned the name of John Phillip, the painter of Spanish subjects, whom the old gentleman always claimed as a kinsman, and twitted for having added an extra "l" to his name when he left Scotland. Mr. Philip died at the ripe old age of 83.



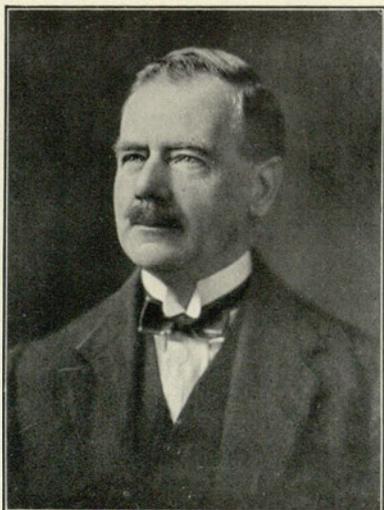
GEORGE PHILIP (I).
1800-1882.



GEORGE PHILIP (II).
1823-1902.



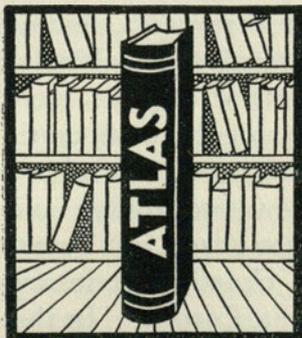
GEORGE PHILIP (III).
1870- .



G. STANLEY PHILIP.
1865-1924.

CHAPTER II
THE ENLARGEMENT OF THE
GEOGRAPHICAL HORIZON BETWEEN
1834 AND 1856

§ 1. *Political Geography at Home and Abroad*



IN this brief survey of the gradual enlargement of the geographical horizon during the last hundred years, we can only touch on those aspects of *Political Geography* which led to alterations in the maps of Europe and of the world. Its main theme is to tell the story of exploration and discovery, and to attempt to trace the advance in human knowledge through study of the earth's surface and research into the natural laws governing the universe, by means of which Geography has gradually won for itself a worthy place among the sciences.

In the last chapter, we saw that by 1834 the thoughts of men all over the civilised world were turning towards democracy as the only cure for the general social unrest. In England, the home of free speech and liberty of thought, exiles from other lands had found an asylum, ranging in their ideals from Mazzini, who dreamed of a brotherhood of nations, to Karl Marx, who, in his *Communist Manifesto* (issued in 1847), advocated the violent overthrow of

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existing civilisation as the only means of bringing about a better order of society. This freedom of thought and word enabled Britain, from the time the foundations of her government were broadened by the passing of the great Reform Act of 1832, to embark on a period of re-constructive legislation and to prevent the general unrest from developing into revolution.

While Britain was peacefully transforming her whole political and social system, in continental Europe, the prevailing discontent, fermenting underground beneath the suppressive measures of reactionary governments, flamed out in the spring of 1848 into open revolution. Everywhere, save in Russia, the old autocratic regimes were temporarily overthrown, and in their place democratic systems were set up in France, Germany, the Habsburg Dominions and Italy. But these new progressive and liberal ideas prevailed for less than three years, and before the period we are now considering closed, reactionary government was once more enthroned in Europe. In this period of unrest and revolution, the territorial changes were few. The neutrality of Belgium as an independent state was guaranteed in 1839, and as a result of the Crimean War (1854-6) Moldavia and Wallachia gained their freedom from the Turk.

The years from 1834 to 1856 witnessed the consolidation of the second British Empire, built up under a new and wiser colonial policy. Towards the colonies of white settlement this new policy recognised the principle of *co-partnership*: the right of the colonies to self-governing institutions and to share equally with the Mother Country in the benefits derived from intercolonial trade. Towards the tropical dependencies, with their subject and backward

peoples, it recognised the principle of *Trusteeship*, defined in the India Act of 1833 by the pledge that "the interests of the native subjects are to be consulted in preference to conflicting interests of Europeans," and given effect to by the humanitarian movement which led to the Abolition of Slavery Act of the same year.

The two leading exponents of this new school of colonial thought were Lord Durham and E. Gibbon Wakefield. With others, they founded a Colonisation Society in 1830 to promote emigration of the surplus home population to the vast and recently annexed empty tracts in the Temperate Zones, where white settlers could live and thrive under the protection of the British flag. Lord Durham is famous for his classic Report on Canada, presented in 1839 after his brief governorship of that dominion, on the recommendations of which the subsequent relations of the Mother Country to her self-governing overseas colonies have been modelled: Wakefield was the chief pioneer in organising a system of immigration into Australia of large numbers of free settlers.

Under this more enlightened colonial policy and notwithstanding a general indifference at home to colonial questions, the Overseas Dominions rapidly grew to nationhood.

In Canada, complete representative institutions had been granted by 1846 to Quebec, Nova Scotia, Ontario, New Brunswick and Prince Edward Island, and also to Newfoundland, the oldest British colony; and two difficult boundary disputes—of Northern Maine and Oregon—had been settled amicably with the United States, thereby establishing the longest undefended international frontier in the world, on either side of which two freedom-loving

peoples have dwelt in unbroken peace down to the present day.

In Australia, the first colonists were the convicts planted at Botany Bay by Captain Phillip in 1788 ; and convicts continued to be regularly transported to Australia and Van Diemen's Land (Tasmania) up to 1833. Besides the convicts, free settlers poured in in a steady stream, and by 1837 the foundations of the six Australian colonies had been laid by the establishment of numerous settlements in New South Wales, round Port Phillip, Adelaide, the Swan River and elsewhere. This stream of immigration grew in volume through the large bodies of carefully selected colonists dispatched by Wakefield from 1838 onwards; so that while in 1833, of the 60,000 white settlers in Australia 40 per cent. were convicts, in 1856 less than 1 per cent. of the population, which had risen to upwards of 300,000, were of convict origin. This rapid expansion of the population led to the division of the island-continent into the six Australian colonies, including Tasmania, all of which by 1856 had received grants of self-government under Constitutions drafted by themselves and confirmed by Acts of the British Parliament.

In New Zealand, missionaries from about 1814 had already established an influence among the warlike Maoris living in the North Island, before Wakefield's first colonists appeared in 1839. In the following year the Union Jack was hoisted by Captain Hobson, anticipating by a few months the arrival of a French man-of-war, sent out to annex the island group. A period of friction between the new colonists, the missionaries and the Maoris followed, culminating in a long-drawn-out insurrection of the warlike natives. Peace was restored in 1850, and two years

later the 30,000 white settlers scattered over the six provinces of the two islands were granted self-governing institutions.

South Africa, the first of the overseas countries to receive white settlers, was the last to obtain full responsible self-government. This slower progress was due to the racial and religious differences of the two sections of the European colonists, the Boers and the later-coming British, and to the frequent conflicts with the encircling Kaffir and other Bantu tribes, all prone to war and many times outnumbering the whites. The Boers regarded the natives as possessing no claims to civic rights; an attitude opposed by the Colonial Office, in full sympathy with the more humanitarian views of the missionaries expressed with great vehemence by Dr. John Philip, the Cape superintendent of the C.M.S. (see page 20). The Boers, embittered already by the loss of their independence through Britain's annexation of the Cape in 1806, grew more exasperated when the Anti-Slavery Act dispossessed them of their slaves. When, therefore, the annexation of a small frontier province east of the Fish River, formed after the first Kaffir War, was repudiated by the Colonial Office, they streamed forth in search of new homes in the "Great Trek" across the Orange and the Vaal. Driving the Matabili warriors before them, they founded a new Republic at Winberg in the Transvaal in 1837; and, after defeating the Zulus a year later, formed a second settlement at Pietermaritzburg in Natal, from which they retired across the Drakensberge when Natal was annexed by Britain in 1842. An attempt, undertaken in 1843 on the advice of Dr. Philip, to establish a chain of four barrier native states, only led to another Kaffir War, followed by

the annexation of British Kaffraria in 1848 and the proclamation of a Protectorate over the Boers' new territory beyond the Orange River. This territory, renamed the Orange Free State, was granted independence in 1854, and the period under consideration ends with two self-governing colonies in South Africa—the Cape and Natal—two independent Boer Republics and several protected Native States.

By 1856, when Britain and the colonists of her Overseas Dominions had already attained maturity as a Commonwealth of Nations, a corresponding expansion and consolidation of the tropical dependencies of the British Empire had been accomplished. The India Act of 1832, to which reference has been made already, raised the administration of Indian affairs to a higher level through its enlightened provisions, prohibiting direct trading by the East India Company, opening up positions of responsibility to Indian officials—the germ out of which has grown the movement towards self-government and dominion status, so prominently before the public to-day—and instituting substantial grants for education, thereby providing, through the medium of the English language, a common means of communication between Indians of differing race and tongue, and the opportunity to acquire a knowledge of Western thought.

By 1854, Peninsular India had been forged into a consolidated Empire bounded by its natural mountain frontiers, through the conquests of Wellesley and Amherst, and the later annexation of the Indus Valley and Oudh by Lord Dalhousie; and had enjoyed a longer period of internal peace than ever before in its chequered history.

Two further accessions of territory in Asia are to be noted: Aden, that arid outpost of Empire at the Bab el Mandeb gate of the Red Sea, acquired in 1837; and the trading post of Hongkong, lying off the mouth of the Canton River, handed over by China in 1842 after the discreditable "Opium War," together with trading concessions at five Chinese "treaty ports."

In sharp contrast to the steady growth of the Colonies and India in these twenty-two years was the stagnation that affected the West Indies and coastal settlements of West Africa following the abolition of the slave trade in 1807 and of slavery in 1833, a stagnation that grew worse in the West Indies when European beet sugar began to compete with their staple industry of the cultivation of the sugar cane.

§ 2. *Exploration and Discovery between 1834 and 1856*

This astounding expansion of the Empire in a single generation was accompanied by an equally remarkable increase in our knowledge of the whole world through the discovery of many of its still hidden secrets. Modern scientific exploration may be said to date from the early thirties of the nineteenth century. It was fostered by the Royal Geographical and other learned societies at home and abroad, and in some cases assisted by Government grants in Britain, France and also Russia. As we saw in the last chapter, there were still in 1834 many geographical problems to be cleared up, and in the next generation notable progress was made towards their solution. Among these problems the secrets still held by the Dark Continent claimed most interest. One of them, indeed, the ques-

tion whether the Joliba or Niger, on which lay the mysterious city of Timbuktu, joined the Nile, lost itself in the Wangara swamps of the Sudan or reached the sea at the Bight of Benin, had been solved by the voyage of the brothers Lander down its lower course in 1830.

A pathway to the unveiling of Northern Africa had also been opened up by the capture of Algiers in 1830 by the French. This event led to a rapid extension of our knowledge of the Atlas lands and Senegambia, through a succession of military, geographical and archæological expeditions, which, by creating a "French sphere" in North Africa, laid the foundations of a new French Colonial Empire. A recognition of French priority of rights in this sphere influenced the direction followed by a British scientific expedition—one of the most fruitful in results ever undertaken in Africa—which set out from Tripoli in February 1850 to explore the central Sahara and Sudan, under the leadership of James Richardson. After his untimely death nine months later, on the edge of the Sudan, his companions, Henry Barth and Dr. Overweg, two young German naturalists, took over the command. Overweg died in 1852 and Barth carried on alone till, in 1854, he was joined by Eduard Vogel, another German naturalist and trained explorer. Barth was forced to return to Europe in 1855, worn out by five years of continuous exploration, and in the following year all news of Vogel ceased: he was lost in the unknown wilds of the eastern Sudan. Through Barth's and Vogel's explorations an accurate knowledge was gained of the topographical features and ethnography of the vast unknown region stretching from Timbuktu to the Benue, the great eastern affluent of the Niger, and from the Bight of Benin to

Darfur; and the map of North Africa, hitherto mostly a blank, was filled in with a network of observed positions.

The greatest of the geographical problems of the Dark Continent—that of the sources of the Nile—was attacked from the north, south and east during, and was on the eve of solution by, the close of the period we are considering. Küppel, a German naturalist, had already explored and accurately mapped Upper Nubia and Kordofan in 1823, and his work was supplemented by the travels of Russegger, an Austrian engineer, in 1837. Our knowledge of the geography and ethnography of Ethiopia or Abyssinia was vastly extended by the explorations of the missionaries Krapf and Isenberg, Beke and Harris between 1837 and 1855. Krapf's still greater journeys in East Africa, in company with Rebmann, led to the discovery of the twin snow peaks of Kilimanjaro, and to his hearing through native reports of great inland waters lying farther to the north, recalling Ptolemy's fabled Mountains of the Moon and his Lake Sources of the Nile. These rumours stirred the geographical world, and the Royal Geographical Society sent out a series of expeditions to solve the problem of the Sources of the Nile. The first of these, under Burton and Speke, landed at Zanzibar at the end of 1856, and its results and those of later expeditions, which solved the problem, will be described in a later chapter.

The name of one other African explorer, and that the greatest, must be mentioned, that of Dr. Livingstone. David Livingstone, born in 1815, went, as a young man, full of ardour and with a scientific training, to the South African mission field in 1840. In his first expedition he crossed for the first time the continent of Africa—from Loanda on the west coast to Mozambique on the east,

opening up new country and exploring a great part of the unknown Zambesi valley. His subsequent explorations will be described later.

In Asia, the geographical horizon was enlarged, between 1834 and 1856, in many directions: in the extreme north, by the explorations of Cåstren among the Ostyaks and Samoyedes, and Middendorff in north and north-east Siberia; in the Near East, by the voyage of Colonel Chesney down the Euphrates, the archæological excavations of Layard, Rawlinson and others in Mesopotamia, the geological researches of Hamilton in Asia Minor, the travels of von Wrede in Hadramaut; and in Central Asia, by the journey of Huc and Gabet to Lhasa and Tibet.

In South America, the wide blank spaces found on the map in 1834 remained for the most part unfilled in 1856, due to the smallness of the white population of the South American states, the feebleness of their resources and their incessant revolutions. The gaps that were filled up and the increase in our geographical knowledge of South America were almost entirely due to the work of European travellers and naturalists, such as the ethnographical researches of d'Orbigny and the travels of Bates and Wallace in the Amazons.

It was otherwise in Australia and New Zealand. The growing population, swelled by wholesale immigration of settlers and gold diggers in the great "Gold Rush" from 1850 onwards, impelled a search in the unknown interior for new regions suited to settlement and sheep farming and for new goldfields. The whole continent was opened up between 1834 and 1856 by a host of explorers; among them Sturt, Mitchell, Grey, Eyre, the brothers Gregory, Leichhardt and Kennedy.

In maritime discovery, Cook and the great navigators of the past had left no great problems to be solved save in the Polar Regions. The voyages of exploration undertaken between 1834 and 1856 were mainly scientific in their character, such as the *Beagle* Research Expedition (on which Charles Darwin was the naturalist) and the French, British and American voyages to the Antarctic between 1838 and 1843; or voyages—to the number of twenty-one—sent out in search of the missing Franklin expedition. Through the French and American expeditions, under Dumont d'Urville and Wilkes, the South Shetland Islands, Adélie and Wilkes lands were discovered and the Ice Barrier fringing the Antarctic shores was coasted from 100° to 170° E. long., a distance of over 1,500 miles; through the British expedition under James Ross, the Ross Sea was charted and penetrated up to the formidable Ice Barrier about 78° S. lat. and Victoria Land, with its lofty mountain ranges, and Mount Erebus, with its smoking crater 12,400 feet above the sea, and the almost equally lofty Mount Terror were discovered.

Though the voyages undertaken to the Arctic in search of Franklin failed in their quest—the tragic fact of his death was only ascertained by McClintock in 1859—they transformed the map of the North American Arctic Archipelago, charting its every island and strait; discovering the North-West Passage (by McClure) sought for vainly for 300 years; and, through the voyage of the American Captain Kane up Smith Sound into the Kane Basin, extending our knowledge of the Arctic to within 9° of the North Pole.

§ 3. *The Development of Geography as a Science*

In the cultural sphere, the advance was no less remarkable than the increasing knowledge of the earth acquired through the unveiling of its secrets by exploration. Scientific investigations in the first half of the nineteenth century opened up a new revelation of the universe and of the forces of Nature, and had begun to point out how these could be directed to the service of man. Amidst storms of controversy the older and narrower conceptions and beliefs gradually began to give way before the triumphant advance of knowledge in every branch of science and Philosophy. Wider conceptions of the universe and of the earth's age were advanced by astronomers and geologists, such as le Verrier, Herschell, Murchison and Lyell. The earlier writings of Darwin already foreshadowed the conclusions fully expounded in his *Origin of Species* (published 1859) on the evolutionary processes by which man and all other forms of organic life had gradually developed through the ages. The discovery by Pasteur of the part played by micro-organisms in maintaining and destroying life effected a remarkable advance in medical science and surgery. The analytical researches of chemists like Faraday, Humphry Davy and Liebig into the forms of matter, and the processes they invented for breaking it up into its constituent elements, led to the application of chemical science to many branches of industry and agriculture. Further practical results for industry were obtained from the study of heat as a form of energy and of electro-magnetism by Joule, Lord Kelvin, Helmholtz, Faraday and others, among them being the inventions of telegraphy and photography. Lastly, through the achievements of exploration and the

DEVELOPMENT OF SCIENTIFIC GEOGRAPHY

geographical writings of Humboldt, Carl Ritter and their followers, the foundations of Geography were laid as one of the natural sciences.

With the growing interest in Geography, a great advance in the art of Map-making took place. Improved methods were adopted in the topographical surveys carried out in Britain and the European countries, and by the middle of the nineteenth century many finely engraved survey maps had been published, notably the famous Dufour hachured map of Switzerland on the scale of 1 : 100,000. The pre-eminence held by French map-makers passed to Germany, where a school of eminent cartographers were gathered together under the direction of Justus Perthes and his son. Stieler's famous Hand Atlas, first published in 1817, was followed by Berghaus' Physical Atlas (1838-48), which summed up the knowledge of the time in Physical Geography and the natural sciences, and by Sprüner's Historical Atlas (1846), while Petermann's *Geographische Mitteilungen* started its distinguished career in 1845. Cartographers of distinction were not wanting in Britain. Among them may be mentioned Arrowsmith, John Cary, Keith Johnston and Bartholomew.

§ 4. *The Early Years of George Philip & Son*

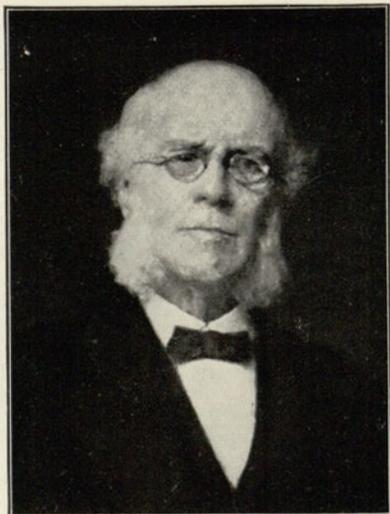
It was natural that an enterprising Bookseller, such as the founder of the Firm of George Philip & Son proved to be, should share the widespread interest in Geography and Maps that this new harvest of knowledge of the earth's surface had created. His business as a Bookseller and General Stationer expanded so rapidly that, in the very year of its formation, he was compelled to seek larger premises in

South Castle Street, which owes its name to being near the site of the thirteenth-century castle which was demolished in 1725.

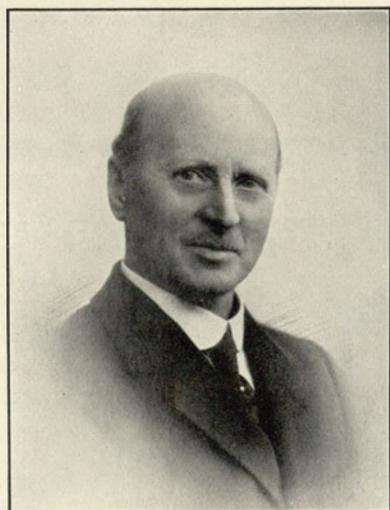
It seems clear that at a very early stage in its history the young Firm extended the field of its activities by producing and publishing maps and educational works. The factory that had been opened for the manufacture of stationery and letterpress printing was extended to include the production of maps. Orders were placed with prominent cartographers for specially drawn maps, engraved on copper plates. These were proved on hand presses and the copies of the original plates thus obtained were hand-coloured by a staff of "girl tinters" (numbering at times as many as 80), a method which had been followed for hundreds of years, and which was not superseded till much later, when Senefelder's Lithographic Process, for which an English patent was granted in 1801, was applied to the printing of maps in colour on power-driven lithographic machines.

With the admission of George Philip II as a partner in 1848, the publishing activities of the business received a new impetus. George Philip II was the only son of the founder of the Firm. He was born in 1823 and educated at King's College, Isle of Man, and inherited a full share of his father's energy, flair for business and finance and taste in literature and art. Three years later the management was further strengthened by the entrance into the Firm of Thomas D. Philip, a son of George Philip I's brother John, and he in the following year assumed the entire control of the retail Bookselling and School Supply Departments in South Castle Street.

By this time the publishing activities of the Firm had grown to such dimensions, that it became necessary to open



THOMAS D. PHILIP.
1829-1913.



THOMAS N. PHILIP.
1862.



ATLAS BUILDINGS, LIVERPOOL.

a London House for the sale of its geographical and educational publications. Offices were acquired at 32 Fleet Street, a site historic in the Publishing World, for it was there that the first of the five John Murrays started and carried on the famous Publishing House of that name from 1768 to 1812, under the sign of The Ship, which was subsequently adopted by George Philip & Son as their colophon or trade-mark. No. 32 was already a shrine of Geography before the premises were taken by George Philip & Son, for after they had been vacated by the Murrays they were occupied by Messrs. Highley, who among other publications, issued in 1845 an Atlas of the World by Lizars and Curry. Later, in 1882, the premises were pulled down and the present handsome block of buildings erected.

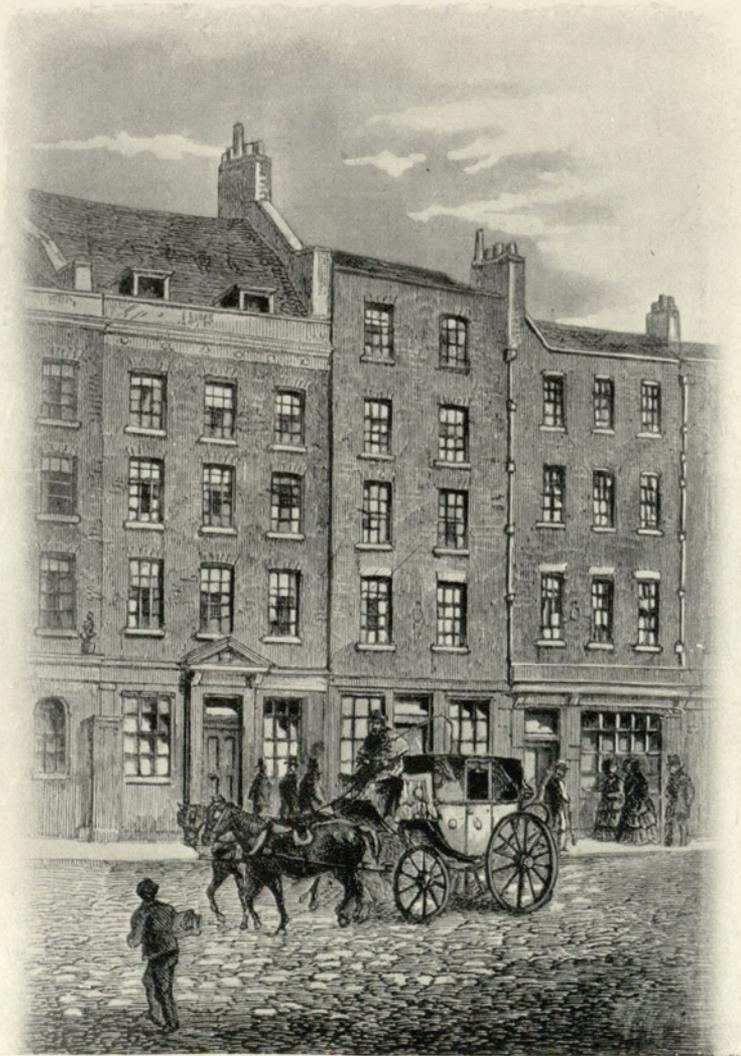
The output of geographical and educational publications to be handled by the new London House was very considerable. Only a few of the more important can be mentioned here, but a list of the Firm's principal publications, dating from its earliest activities to the present time, will be found at the end of the volume.

Until 1856 George Philip & Son were chiefly Map and Atlas Publishers. Up to, and for some time after, this date, John Bartholomew, A. Petermann, W. Hughes and other leading cartographers were entrusted with the preparation of a series of authentic, large-scale folio maps, covering the whole world, including among them the first general map of the Arctic Regions to exhibit the discovery of the North-West Passage by Captain McClure in 1850; and a complete series of large-scale maps of the separate West Indian Islands, with which the Firm carried on a large export business. All these maps were gathered to-

gether in the *Imperial General Atlas*, a handsome folio volume, first issued in 1853—a remarkable achievement for a Firm then only nineteen years old. This, in 1856, was amplified into *Philips' Commercial Atlas*, consisting of 72 double-page maps, size 22 by 28 inches, accompanied by a comprehensive Introduction giving a full description of Political and Physical Geography and a copious Index with latitude and longitude map references. A second and smaller Reference Atlas, in quarto form, had already been issued in 1852, under the name of the *Popular Atlas of the World*.

During the same period the Firm published a complete series of quarto maps for use in schools and a series of School Atlases, including, in 1855, a *School Classical Atlas*, compiled by W. Hughes, Professor of Geography at King's College, London.

The books published by George Philip & Son up to 1856 included a School Geography by Boardman, the first of a series of Geographical Textbooks by Professor Hughes, and the *National Copybooks* for use in schools; and, as was natural for a Publishing House with its headquarters in the first seaport of the Empire, a series of Books on the Sea, the production of which laid the foundation of the Firm's reputation as Nautical Publishers. Among books of this nature may be mentioned the *Freighters' Guide*, *Lee's Manual* and *Laws of Shipping*, *Birt's Storms* and *Forbes' Latitude*.



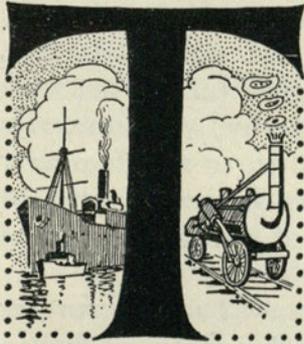
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32, FLEET STREET, LONDON, IN 1856.

CHAPTER III

THE GROWTH OF GEOGRAPHICAL KNOWLEDGE BETWEEN 1856 AND 1878

§ 1. *The World from 1856 to the Berlin Congress*



THE story of the Political Geography of this period is one mainly of conflict. The astonishing achievements of scientific invention and of industry displayed at the Great International Exhibition, held in Hyde Park in 1851, had indeed inspired hopes of a long period of international peace and further industrial progress. But these hopes were shattered by the Crimea War (1853-6), which proved to be the first of a series of wars which shook Europe and the world during the next twenty years. Of these, the greatest in their far-reaching results were the three wars waged by Prussia between 1864 and 1871, engineered by Bismarck, the Chancellor of "Blood and Iron," to secure for his country the hegemony of the German states.

Bismarck had been called in as Chancellor in 1862 to overcome the opposition of the Prussian Landtag to the ambitious military policy of the King. Within two years he had broken the power of Parliament and reorganised the army. Then, in three victorious wars, he wrested the

Duchies of Schleswig and Holstein from Denmark; utterly defeated Austria and her allied German states in a campaign of only a few weeks' duration and annexed Hanover, Hesse and Frankfurt to the Prussian Crown; and lastly overcame France, dictating a peace within the captured capital which forced France to cede Alsace-Lorraine to the conquerors, and causing the Prussian King to be proclaimed German Emperor in the Palace of Versailles.

Through these dazzlingly successful campaigns, the Hohenzollerns dispossessed the Habsburgs of their hereditary title to the leadership of the German states. Austria, forced out of the new German Empire, turned her eyes to Eastern Europe. As a Dual Monarchy, some measures of democratic government were granted to the dominant races—the Austrians and the Magyars—but were withheld from the Slav and other elements of the population as being unsuitable for subject peoples.

This overthrow of Austria and France had the further effect of almost completely fulfilling the dream of Italian unification, through the forced cession by Austria of Venetia in 1866, and of Rome in 1870; only *Italia irredenta* (the Trentino and Trieste) remaining outside the new Italian frontier.

In the Balkan Peninsula, the "Sick Man of Europe" failed to carry out the pledges of reform he had given after the Crimea War. Revolts against the continued tyranny of the Turk broke out in consequence, first, in 1875, in Herzegovina, and then in Bulgaria a year later. The "Bulgarian Atrocities" perpetrated by the Turks in their efforts to suppress the second revolt brought about the armed interference of Russia. In the Treaty of San Stefano, following her successful campaign of 1877-8,

Russia forced Turkey to grant autonomy to Wallachia and Moldavia, full independence to Old Serbia and Montenegro, a more liberal administration to Bosnia and Herzegovina, and to recognise an enlarged and autonomous Bulgaria, stretching from the Danube to the Ægean.

This attempted settlement of "the Eastern Question" failed to meet with the approval of the Powers, and a Congress was called at Berlin in 1878, which curtailed the area of the new Bulgaria, handed over the administration of Bosnia and Herzegovina to Austria, and assigned Cyprus to Britain.

In Asia, the chief events in the sphere of Political Geography were the steady advance of Russia between 1856 and 1878 towards the Indian frontier, by the absorption of Turkistan as far south as Tashkent and Samarkand; and the acquisition of the Amur Provinces in Eastern Siberia; and by the foothold secured by France in Further India, through the capture of Saigon in 1862, followed by the annexation of Cochin China and the declaration of a French Protectorate over Annam and Tongking. In Africa, France strengthened her hold of Northern and Western Africa; and Britain extended her dominion in South Africa by annexing British Kaffraria in 1878 and extending the Cape frontier to include the Kimberley Diamond Fields, first discovered in 1870; and, by acquiring Lagos off the Guinea coast in 1861, laid the foundations of her future control of the Niger delta. In 1869, the same year that saw the opening of the first American trans-continental railway, the narrow isthmus of Suez, joining Africa to Asia, was pierced by de Lesseps—an engineering feat that revolutionised the direction of sea-borne trade to the East.

Meanwhile, in the New World, the population of the United States, swelled by a constant stream of emigrants from Britain and Ireland, and later from Germany and the countries of Northern Europe as well, was breaking new ground westwards, impelled by the need of finding new areas for agricultural settlement or attracted from 1848 onwards by the "Gold Rush." The growing cleavage between the economic system of the Northern States and that of the Southern States, based on slavery, led to the Secession of the Southern Confederate States and the Civil War of 1861-6. While the victory of the Federal armies and the consequent abolition of slavery, without compensation to the slave-owners, brought impoverishment to the South, and accentuated the feelings of race hatred between the whites and the enfranchised negroes, economic recovery after the war was rapid in the North. A period of general expansion in every branch of industry and manufacture set in, and through the growth in coal, iron and copper mining, the opening up of the Pennsylvania and Ohio oil fields, and of new gold and silver mines in the Far West and the rapid development of its railway network, the United States advanced steadily on her way to becoming one of the foremost among the industrial nations.

For Britain, the period between 1856 and 1878 was marked by great economic prosperity and great reforms in the political system. The Reform Act of 1867 and the secret Ballot Act of 1872 established democratic institutions on a broader basis, trade unions were legalised and the whole of industry was brought under State control by new Factory Acts. In the educational sphere, the progress was no less marked. The older universities were opened to a wider circle through the abolition of religious

tests, as was the Civil Service through competitive examinations in place of the older system of nominations; and, above all, for the first time, the Education Act of 1870 provided a universal system of Elementary Education.

The supremacy of Britain as an industrial and colonial Power during the first half of the nineteenth century, when it was the Workshop of the World, first began to be challenged in America after the Civil War, which left the United States free to develop her immense resources, and in Europe, in the years following the Franco-Prussian War, when Germany and other European states commenced to enter into fierce economic competition with Great Britain in the world markets, while, in their home markets, they sought to shut out British merchandise by hostile tariffs. The depression in British trade during the later seventies was a clear indication that the era of the unquestioned supremacy of Britain as a commercial Power was drawing to a close.

This discrimination against British trade extended to the Colonies. They had reached adolescence and were developing their resources and institutions. The eastern provinces of Canada were formed into a Dominion in 1867, to which Prince Edward Island, Manitoba and British Columbia, and the territories of the Hudson Bay Company, were joined later; and in 1867 the Canadian Pacific Railway was begun, to weld together all the provinces from the Pacific to the Atlantic in one consolidated Dominion. Expansion in Australia and New Zealand was stimulated by exploration, discoveries of gold and the increase of sheep farming. British dominion in South Africa, notwithstanding constant friction between the two dominant white races and conflicts with the natives, was consolidated and extended by

the acquisition of native territories and the annexation of the Transvaal in 1877. Lastly, in India, the Mutiny of the Sepoys led to the transference of the administration from the East India Company to its complete control by the British Parliament in 1858 and the Proclamation of Queen Victoria as Kaisar-i-Hind or Empress of India in 1876.

§ 2. *Exploration and Discovery between 1856 and 1878*

The last of the geographical mysteries of the Dark Continent—the ultimate sources of the Nile—was solved between 1856 and 1864 in a series of expeditions under British explorers. Burton and Speke discovered Lake Tanganyika in the first of these, and Speke sighted the Victoria Nyanza; and in a second expedition he followed its coastline northwards to its effluent, the White Nile, while Baker and his wife, a few years later, discovered the Albert Nyanza.

Meanwhile, in his second great expedition of 1858–61, David Livingstone was attacking the problem from the Zambesi watershed. He explored the lower Zambesi and its affluent the Shirwa, and discovered that this river drained Lake Nyasa, native rumours of which had reached the Portuguese two centuries earlier.

In 1865, Livingstone entered on his third and last great expedition, in which, setting out from the south end of Lake Nyasa, he successively discovered Lake Mweru, the Lualaba—which he thought must be one of the headwaters of the Nile—and Lake Bangweulu. He reached Ujiji, a noted slave-trading centre, on the east shores of Tanganyika in 1867. By this time four years

had passed without direct news from the explorer, and, in anxiety for his fate, two search expeditions were sent out, one of which, under H. M. Stanley, a reporter on the *New York Herald*, dispatched by its proprietor, Gordon Bennett, discovered Livingstone on the shores of Lake Tanganyika. After a few months spent together in exploring the north end of the lake, Stanley left for the coast, and less than two months later the dead body of the great explorer was found, kneeling by his bedside, by his faithful "boys." They carried his body to the coast and all his instruments and diaries, and he was given a final resting-place in Westminster Abbey, as the leading African explorer of all time and the greatest of missionaries and workers for the suppression of the African slave trade, against which, through all his travels, he had waged an unceasing warfare.

Stanley confirmed his reputation as an intrepid traveller through his wonderful journey between 1874 and 1877 right across Central Africa, in the course of which he mapped Victoria Nyanza and Tanganyika, demonstrating that the Lualaba is a tributary, not of the Nile, as Livingstone had supposed, but of the Congo. In a hazardous voyage he followed the Congo to the sea, thereby revealing a great natural highway leading to the heart of Africa. Through these explorations, and the discoveries of Cameron in his remarkable journey across Africa (in the course of which he proved that Lake Nyasa drained to the Congo through its effluent the Kaluga), and of Pogge and Wissmann among the southern tributaries of the Congo, the last great problem of the Dark Continent—the Hydrography of the Congo Basin—was solved.

Among other noteworthy African expeditions between

1856 and 1878 must be mentioned those of Rohlfs and Nachtigal in the Sahara and Sudan, and of Schweinfurth and later Junker among the cannibal and pygmy tribes inhabiting the regions watered by the Bahr el Ghazal and Welle.

Blank spaces on the maps of the other continents were also filled in in the same period. In Asia, the hitherto almost unknown region of Central Asia was opened up by the explorations of the brothers Schlaginweit in the Karakoram and Kwen-lun Mountains, of native Indian "pundits" in Tibet (barred to Europeans), of Semenow in the Tien-Shan and Prschewalski in Mongolia and the Gobi Desert. Large tracts of China were explored by Richthofen, and through the journeys of Kiepert and Philippson Asia Minor was completely mapped. In Australia the most important expeditions were those of Burke, Stuart, Warburton, the brothers Forrest and Giles; and, in New Zealand, of Hochstetter; and in America, the journeys of Schwatka on the upper Yukon and of von der Steinen in the basin of the Xingu in Central Brazil. Only in the Polar Regions was there an almost complete lull in exploration: the discovery of the North-East Passage by Nordenskjöld in the *Vega* in 1878 being the only noteworthy achievement in Polar exploration.

Lastly, the exploration of the oceans was undertaken in the seventies by a series of international scientific expeditions for deep-sea research: by England in the *Challenger*, by the United States in the *Tuscarora* and by Germany in the *Gazelle*.

It was not only in the exploration of unknown regions that geographical knowledge made a notable advance between 1856 and 1878. In all civilised countries accurate

surveys were systematically being carried on, and the other natural sciences were adding fresh stores of knowledge to the common stock. Here only the outstanding contributions directly related to Geography can be mentioned: in Geology, the investigations of Suess into Land Forms, elaborated later in his great work *das Antlitz der Erde* (1885-1909), and of Richthofen and Penck into the Morphology of the earth's crust; in Zoology, the researches of Darwin and Wallace, and in Botany of Hooker, Engler and Haeckel; in Climatology, the systematic gathering of meteorological data by the foundation of new observatories and their reduction to synoptic weather charts; and in the new science of Anthropology, the writings of Ratzel, Richthofen and others.

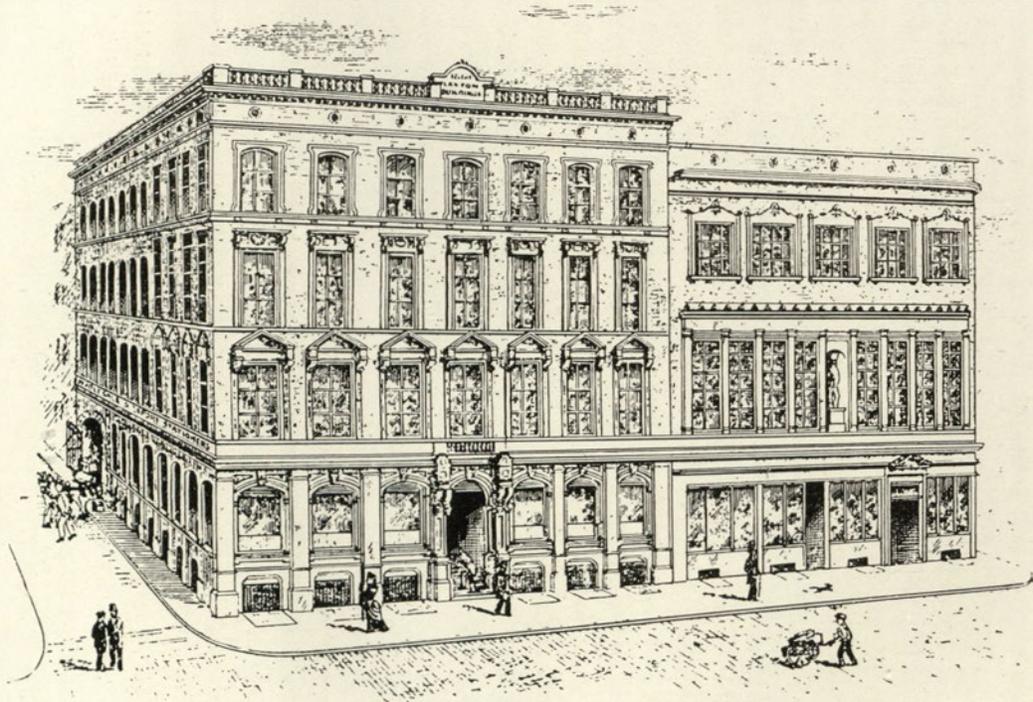
Out of this wealth of new material arose new schools of geographical thought, notably in Germany and France, which developed a more scientific conception of Geography. The outstanding exponents of these two schools were, among writers, Oskar Peschel, whose *New Problems of Comparative Geography* went far beyond the conceptions of Ritter, and Elisée Reclus, whose *Universal Geography* gave in its many volumes a complete survey of the earth.

These new schools of geographical thought attracted a number of men combining scientific training in Geography with technical skill to the making of maps, the manufacture of which was facilitated by new processes of map production and the invention of the power-driven printing press in the middle of the century. The old maps, beautiful as works of art, with their empty spaces decoratively filled in with pictures of "plants and animals in place of names," came to be superseded by maps drawn on scientific principles. Germany became the headquarters of the new Carto-

graphy through the work of such eminent map-makers as Berghaus, Sprüner, Vogel, Petermann and Kiepert.

§ 3. *The Publishing Activities of George Philip & Son
from 1856 to 1878*

With the opening of a London House, the publishing and printing activities of George Philip & Son expanded rapidly. In 1846, the methods of map production, as described in an earlier chapter, had been revolutionised by the coming of the power-driven lithographic printing machine. Senefelder in 1799 had invented the art of lithography, based on the fact that grease attracts grease and is repelled by water, a process by which a design can be drawn or engraved on stone and afterwards multiplied on a printing press. The stone most suitable for the purpose is a sedimentary limestone, quarried at Solenhofen in Bavaria and elsewhere. The surface of the "lithographic" stone is grained slightly and the design is then drawn directly on to the stone, either with a solid crayon formed of a greasy substance, or else with a brush or pen charged with a greasy ink; or drawn on prepared paper and "transferred" down to the stone by means of a press. The design is then etched with a solution of gum arabic and nitric acid, and after the stone has passed through various sponging and drying processes, it is "rolled" up with printers' ink and is then ready for the printing press. An alternative use of the stone is that of lithographic engraving with a needle, the engraved work being inked with a "dabber" which forces the ink into the incised lines. This method has been frequently adopted by foreign map-makers, as being less costly than that of engraving on copper.



CAXTON BUILDINGS, LIVERPOOL, IN 1859.

While the lithographic process superseded the old method of pulling copies one by one direct from the copper plates, it did not materially increase the speed at which maps could be produced; and it was not till 1846 that this result was achieved through the invention of the power-driven lithographic printing machine and its application to map printing.

George Philip & Son at once availed themselves of this invention to speed up their map production; and to cope with the growing demand for their geographical and other publications, built in 1859 Caxton Buildings, a commodious many-storied printing works. Here a fleet of the new lithographic machines was installed for map printing, besides letterpress, ruling and binding machinery for the production of the Firm's book publications and the manufacture of stationery for commercial and educational purposes. All the Firm's manufacturing activities were concentrated at Caxton Buildings, including the Map-engraving and Map-mounting Departments; and in the same year the retail general and educational Bookselling branch of the business carried on at South Castle Street was formed into the separate concern of Philip, Son & Nephew, with George Philip I, George Philip II and T. D. Philip as partners and under the sole management of the last named.

The greater facilities for production provided by the new Printing Works at Liverpool with its new equipment of power-driven machinery were no more than sufficient to keep pace with the increased output demanded by the expanding publishing activities of the Firm. This expansion was most marked after 1870, the year which saw the establishment of Board Schools throughout England.

This important event which, for the first time, secured a national system of Elementary Education, gave a great impetus to the production of new textbooks, maps and atlases, school stationery and appliances wherewith to equip the new schools, and George Philip & Son were foremost among educational publishers in the steps they took to meet the new educational requirements.

Among the more important Geographical Publications issued by the Firm between 1856 and 1878 were a series of new Atlases for the General Public, ranging from a ten-guinea *Imperial Library Atlas* with 80 large folio maps and the *County Atlas of England* with 43 crown folio maps to tiny Atlases published at 1s. or less; a comprehensive series of General School Atlases for scholars of all ages, and special Atlases dealing with Physical, Historical and Scripture Geography; large and small School Wall Maps of the World, Continents and principal Countries; and a complete series of junior and advanced textbooks on Regional and Physical Geography, by Professor William Hughes and other well-known authorities.

To meet the requirements in other branches of education, the Catalogue of the Firm's publications was further expanded by the addition of a number of series of School Textbooks on various subjects, such as General Readers, School Arithmetics and Scripture Manuals, separate School Books on Geometry, Grammar and Music, and by several new series of Copybooks, the sales of which were so large that to keep up with the demand a special quick-running machine costing several thousands of pounds had to be installed in 1867.



FLEET STREET 80 YEARS AGO.
(32, Fleet Street is opposite St. Dunstan's Church.)

CHAPTER IV
FURTHER GEOGRAPHICAL PROGRESS
BETWEEN 1878 AND 1902

§ 1. *The World between 1878 and 1902*



WITH the Berlin Congress of 1878, a new era in the Political Geography of Europe begins, dominated by the political, colonial and economic rivalries of the Great Powers. While to all appearances the last quarter of the nineteenth century was a period of peace, it was also a period of preparation for war, in which, owing to the prevailing

international distrust, the manhood of Europe was gradually drawn into two opposing armed camps, controlled by the Triple Alliance and the Triple Entente. In the Economic Sphere, the international jealousies and rivalries were no less acute. Germany, through the hazard of war, having become the dominant power in Europe, set about the scientific development of her immense natural resources to such effect that, by the end of the century, she had drawn level with Britain in international trade, and in some directions, as in her steel, iron and chemical industries, had become her superior. A still more formidable rival for the trade of the world was the United States. Her population in 1878 already exceeded that of the

British Isles, and the exploitation of her unlimited resources during the next twenty years made her the chief industrial and trading country of the world. Through this competition and that of Belgium, France and other states, and the shutting out of markets by the imposition of hostile tariffs in Europe and America, Britain lost the ascendancy in trade which she had so long held.

This rivalry was not confined to Trade. Although it was growing evident that, through the improvement in transport, nations had become interdependent for the supply of the commodities of commerce, the new industrial states became suddenly animated by a desire for securing national self-sufficiency by the acquisition of overseas tropical dominions, whence they could draw supplies of raw material and at the same time secure exclusive markets for their home products.

From this desire, sprang a furious scramble among the Powers for overseas colonies. Africa, opened up by explorers in the preceding generation, was so rapidly parcelled out between Britain, France, Germany, Belgium and Italy that a second Conference at Berlin had to be called in 1884 to arrive at definite international agreements on the partition of Africa.

In this general scramble, Britain for a time held aloof. It had, it is true, been forced to occupy Egypt in 1882 as a temporary measure, not dreaming the occupation would last down to the present day. But it was only when the other Powers had secured treaty rights with the native chiefs over vast tracts of the continent that she began to take a prominent share in the race. Largely through the activities of the East Africa, South Africa and Royal Niger Chartered Companies she was able to add some 1,500,000

square miles to her African dominions, the various frontiers of which were ultimately defined by treaties with the competing European Powers. With Germany, Britain agreed to the cession of Heligoland, the recognition of German Protectorates over wide spheres in East Africa, South-West Africa and the Cameroons (the boundaries between which and French Equatorial Africa were fixed by an independent Franco-German treaty), regions covering an area of over a million square miles, in return for the recognition of a British sphere in East Africa and a Protectorate over Zanzibar.

By the treaties of 1890 and 1898 with France, Britain secured the rich Hinterland of her settlements in the Niger Delta and considerable extensions of territory in the Gold Coast, Sierra Leone and Gambia colonies; and, in return, recognised as French spheres Madagascar, and the whole of North-West Africa, a vast region stretching from the Mediterranean to the Guinea coast, except Morocco—which did not become a French Protectorate till 1912—a vague Spanish sphere on the arid Sahara coast, the negro Republic of Liberia, and a small Portuguese colony south of the Gambia River.

Portugal, stirred by the general fever for expansion, woke up from her long apathy in colonial matters. In virtue of the African settlements founded in her great Age of Colonial Expansion, she put forward a claim for the whole region recently opened up by Livingstone and other British missionaries and travellers in the Zambesi basin, lying between the Atlantic and Indian Oceans. The occupation of Matabili Land and Mashona Land by the Chartered South Africa Company, on the initiative of the forceful Cecil Rhodes, and the proclamation of a Protectorate over

Nyasaland were the British replies to this fantastic claim; and in 1891, Portugal was compelled to accept a settlement in which the *Hinterlands* of her colonies of Angola and Mozambique were defined, a settlement which left her with more than a quarter of a million square miles of African territory.

The status of the vast Congo Basin, covering an area of over a million square miles, was determined at a Conference in Berlin in 1885. The whole region was declared a neutral state with equal trading rights for all countries, with the name of the Congo Free State, under the sovereignty of Leopold II, King of the Belgians; an arrangement which lasted till 1908, when, as a result of the agitation caused by the "Congo Atrocities," it was taken over as a Belgian colony.

In the international race for African territory, Italy also shared, dreaming of an East African Colonial Empire. She established settlements on the Red Sea littoral and the eastern Horn of Africa, and proclaimed a Protectorate over the nominally Christian and semi-civilised state of Abyssinia. This she was forced to abandon, after her disastrous defeat at Adowa in 1896. Meanwhile, between the Italian spheres of Eritrea on the Red Sea and Italian Somaliland, France had pegged out a claim at Obok and Jibuti, and Britain at Zeila and Berbera farther east. The boundaries between Italy and Abyssinia, and French, British and Italian Somaliland were settled by treaty in 1884, and by later agreements.

One further alteration to the Political Map of Africa—the conquest and re-conquest of the Egyptian Sudan—remains to be noted. The spendthrift Khedif of Egypt, Ismail Pasha, after the discovery of the sources of the Nile,

cherished the ambition of adding the whole of the upper Nile Basin to his dominions. The task was entrusted, first to the explorer Sir Samuel Baker, and later to the heroic "Chinese Gordon." In five years—between 1874 and 1879—Gordon, through the moral ascendancy he had achieved over the Sudanese tribes and the relentless warfare he waged against the slave traders who ravaged the land, had brought about a semblance of law and order, controlling the country by scattered garrisons of Egyptian troops.

Meanwhile misgovernment and extravagance in Egypt led to a military revolt under Arabi Pasha, and the position of Europeans became so precarious that an Anglo-French fleet was dispatched and Alexandria was bombarded by the British ships. The Sultan of Turkey—the Suzerain of Egypt—and France refusing to participate in crushing the rebellion, Britain, single-handed, landed an army, defeated Arabi at Tell el Kebir, and was then forced to take over the civil and military administration of the bankrupt and utterly disorganised country. Through the able administration of Evelyn Baring, afterwards Lord Cromer, prosperity was eventually restored to Egypt in the face of incredible difficulties.

It was not till 1884 that the new Administration was free to attack the problem of evacuating the Egyptian garrisons left isolated in the Sudan. This problem was pressing, for they were being threatened by the fanatical and warlike followers of the Mahdi, who, claiming to be the Messiah, had suddenly appeared in the Sudan. To this task Gordon was appointed, but on reaching Khartoum his reluctance to abandon the province to misrule and misery made him hesitate too long, and he himself was

surrounded by the dervish hordes. The advance guard of a British force, dispatched to his relief, reached Khartoum too late—the heroic Gordon had been killed two days before. The British troops were withdrawn and the Sudan sank into barbarism, under the cruel sway of the Mahdi, and his successor, the Khalifa.

The task of reconstructing the finances and administration of Egypt and the creation of a reliable Egyptian army proved so arduous that it was not till 1896 that the reconquest of the Sudan could be attempted. After three efficiently planned campaigns up the Nile valley under Kitchener's command, it was finally accomplished through the utter rout of the Khalifa and his dervishes at the Battle of Omdurman in 1888. Gordon was avenged.

At the very moment of success, a new complication arose. France, not content with almost the whole of North and Central Africa, aimed at a transcontinental empire stretching from the Atlantic to the Red Sea. To achieve this ambition, she dispatched an expedition under Major Marchand, and he actually hoisted the French flag at Fashoda on the White Nile a few weeks before the victory at Omdurman. Kitchener forced Marchand to withdraw, and though this withdrawal strained Anglo-French relations almost to the breaking-point, war was averted, and in the following year France recognised the upper Nile basin as a British sphere.

Elsewhere in the world considerable areas came under white control. In the Pacific, Germany annexed north-east New Guinea and the western Samoan Islands, purchased from Spain the Caroline, Marianne and Marshall island groups, and obtained a leasehold of Kiao-chau from China. The United States annexed the Hawaiian Islands,

the Samoan island of Tutuila, and Guam, and, after the Spanish-American War of 1898, assumed a Protectorate over the Philippines, and France consolidated her power over French Indo-China. Finally, Britain annexed south-east New Guinea and some small island groups in the Pacific, federated the Malay States under British protection, while in India she secured a scientific mountain frontier in the north-west (after the second Afghan War), and added Upper Burma to the Indian Empire.

This era of intense international competition for world trade and for dominion over the vast regions opened up by exploration again transformed the Map of the World. More than half the land surface of the earth and almost half its population had come under the control of five Powers. Among these, the British Empire held pride of place with over a quarter of the world's area and nearly a quarter of its population; Russia came second with a seventh of its area and a twelfth of its population, while France, the United States and Germany respectively controlled one-twelfth, one-fifteenth and one forty-fifth of its surface, and one-seventeenth, one-eighteenth and one-twentieth of its inhabitants. Outside these five World Empires lay China with another quarter of the world's inhabitants and a fourteenth of its area, weakened by the Chino-Japanese War and the Boxer Rising, and only saved from partition among the Powers through the opportune Anglo-Japanese Treaty of 1902; Japan, which had slurred off its exclusiveness, adopted Western methods and was well on the way to ranking as one of the principal industrial states of the world; and the South American Republics, which, in virtue of the Monroe Doctrine, were under a vague form of Protection of the United States.

§ 2. *The Growth of Greater Britain: 1878-1902*

The Age was also one of great social upheaval and reconstruction. Here we can only glance at the social and political changes in so far as they affected Britain and the British Commonwealth of Nations. In home affairs, the Labour Party, following the widening of the franchise through the passing of the Third Reform and Redistribution Acts of 1884 and 1885, were becoming more and more a force in politics, and the Irish Home Rule Controversy was rending the old historic Parties asunder; while a considerable advance was made in education through the passing of Acts establishing free education and a co-ordination of the whole educational system of the country; and by the reconstitution of the University of London as a teaching institution, and the attainment of the university colleges of Owens College, Manchester, Liverpool and Birmingham to full university rank.

In Imperial affairs, Britain threw off her old apathy towards her Overseas Dominions and came to cherish the ideal of a Greater Britain, with the daughter states of the Empire linked to the Mother Country by ties of interest and sentiment under the Crown—the symbol of their union, and all sharing the “White Man’s Burden” of administering the vast tropical dependencies that had been brought under the British Flag to the betterment of their backward peoples. This new ideal was stimulated by the poems and tales of “Imperialists” like Kipling, or stirring slogans, such as the “Cape to Cairo” cry of Cecil Rhodes, by the sight of men of different race brought together in great processions on State occasions—as at Queen Victoria’s jubilees and funeral, and, above all, by the frequent

conferences of the statesmen of the Empire, through which misunderstandings were cleared away and measures for the common trade and defence of the Empire were thought out. Even the tragic happenings in South Africa—to which we must now turn—culminating in the unhappy Boer War, in the end further forged the bonds of union through the common effort shared by the whole Empire to achieve victory for the Imperial arms.

In 1878, South Africa was at peace, and it seemed possible that she might follow the road towards a fusion of the two white races in a South African Federation under the British Flag. All such hopes were shattered, first, by the war with Cetywayo, the Zulu king, then by the rising of the Transvaal Boers and the grant of independence to the South African Republic after the British reverse at Majuba, and finally, by the struggle between Britons and Boers, which culminated in the Boer War.

The two leaders in this struggle were Cecil Rhodes and Paul Krüger. Rhodes strove with the domineering force of a powerful personality to realise his dream of a great South African Empire under the British Crown. By his influence, a Protectorate over Bechuanaland was proclaimed, and a Charter granted to the South Africa Company. Through the Company's agents, the wide-spreading territories of the Matabili and Mashona tribes north of the Transvaal border were gradually occupied, and after the defeat of the Matabili in 1893, the whole domain was given the name of Rhodesia.

Paul Krüger, the President of the newly formed South African Republic, was a typical up-country Boer, whose only guide was the Old Testament, and whose one idea was to drive the hated British out of South Africa. To

the natives and "Uitlanders" (who had swarmed into the Transvaal after the discovery of the rich goldfields on the Rand) he denied all civic rights, although the latter owned nearly all the new-gotten wealth of the country and were paying practically all the taxes. To redress their wrongs the Uitlanders, with, or without, the knowledge of Rhodes and the Colonial Office, engineered the ill-conceived and abortive Jameson Raid, the ultimate cause of the Boer War. On this war Krüger the more readily embarked because he wrongly believed, on the strength of the famous telegram from the Kaiser, that seemed to voice the general indignation of Europe against the "wanton" attack of Great Britain on his little Republic, that he would receive effective support from abroad. In the earlier part of the war, which lasted two and a half years, Britain, caught unprepared, met with heavy reverses. These Boer successes, applauded throughout Europe, aroused the loyalty and war enthusiasm of the Dominions. They poured in their contingents to the armies dispatched from England under Roberts and Kitchener, the Boers were thrown back, the beleaguered British garrisons at Mafeking and Ladysmith were relieved and the two Dutch Republics were reannexed. The Boers carried on a gallant but hopeless guerrilla warfare under Botha, de Wet and others for a year and a half longer, and, on their final submission in 1902, were granted such generous peace terms that the way was paved to the long-dreamed-of Union of South Africa under the British Crown, which was to come into being four years later.

§ 3. *Exploration and Discovery between 1878 and 1902*

Peaceful penetration of Africa through exploration in every direction followed its partition among the Powers. Transcontinental journeys of the continent became frequent: across South Africa by Serpa Pinto, Wissmann, Capello, Ivens and Gibbons, and across North-West Africa by Lenz. Stanley, after five years of administration and exploration in the newly founded Congo State, in 1887 led an expedition for the relief of Emin Pasha, who had been appointed by Gordon Governor of the Equatorial Province of the Sudan and had been isolated in the Mahdist rising. After a terrible journey through the heart of the tropical forest, in which the Aruwimi River and the pygmies haunting its banks were discovered, Stanley fell in with Emin, and brought him down to the east coast, discovering the Albert Edward Nyanza and, in Ruwenzori, the fabled Mountains of the Moon, on his way.

Among other noteworthy explorations of the time were Teleki's and Höhnel's expedition to the arid region round Lake Rudolf and Lake Stefanie, Götzen's exploration of Ruanda and Lake Kivu, Hans Meyer's ascent of Kili-manjaro, Foureau's journey from Algiers to the Congo and Holub's travels between the Orange and Zambesi Rivers.

Elsewhere in the world, exploration was fruitful in results. In Asia, Prschewalski continued his examination of the upper reaches of the Hwang-ho, Younghusband crossed Central Asia from east to west, Prince Henry of Orléans traversed the upper gorges of the Mekong and Irrawaddy, and Sven Hedin, in two expeditions, explored the Tarim basin.

In Australia, the island-continent was crossed from

north to south by Lindsay, and later, from south to north, by Maurice and Murray ; Winnecke discovered the Mac-Donnell Range ; Carnegie, and later Brockman, explored the interior of Western Australia ; and McGregor traversed British New Guinea.

Interest in Polar exploration was revived by Nansen's crossing of the Greenland Icefield, and still more by his remarkable voyage in the *Fram*, which had been specially built to resist ice pressure, with Otto Sverdrup as ship-master. The *Fram*, once frozen in among the ice-floes, started her long drift across the Polar Ocean, and six months later Nansen left her and made a dash for the North Pole, succeeding in reaching $86^{\circ} 14'$, the highest latitude then attained by man. After a hazardous return journey, and a winter spent at Frederick Jackson Island, he was picked up by the Jackson-Harmsworth Expedition to Spitsbergen and brought safely back to Norway. Other noteworthy expeditions in the North Polar Regions were the voyage of the Duke of the Abruzzi, which reached $84^{\circ} 17'$ N. lat., of Sverdrup to the Sverdrup Archipelago and the journey of Peary to the north point of Greenland ($84^{\circ} 17'$ N. lat.).

It was, however, the systematic exploration of the Antarctic that aroused the greatest interest. A great period of Antarctic discovery began with the expedition of Borchgrevink to the Antarctic continent west of Victoria Land, where he reached $78^{\circ} 50'$ S. lat., and the British National Expedition. This expedition, for which the *Discovery* was built specially, set out in 1901, under the command of Captain Scott, accompanied by a band of scientists, and explored the lofty wind-swept plateau to the south of South Victoria Land (reaching $82^{\circ} 17'$ S. lat., 207 miles

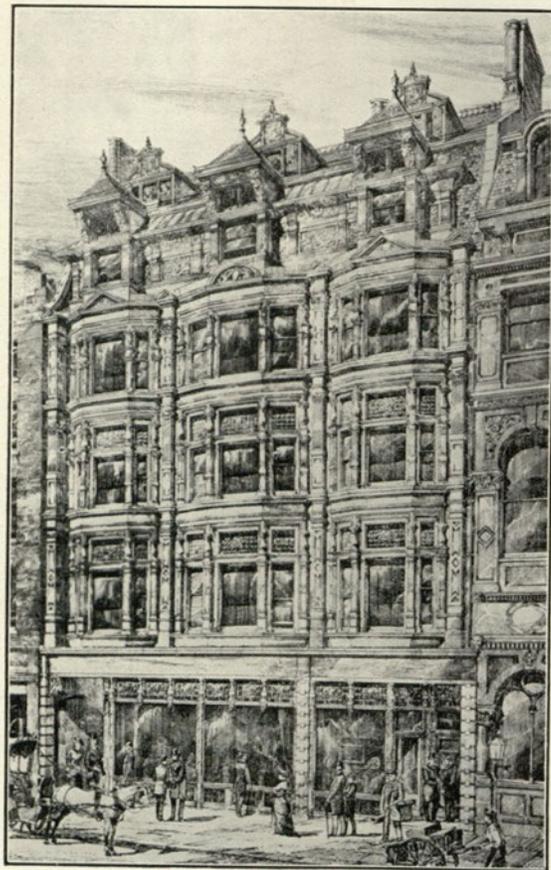
beyond the previous "Farthest South"), and later discovering King Edward VII Land.

The impetus given to the study of Geography by exploration, by the general "Scramble" of the Powers for African territory and by the new and more scientific conceptions of the subject formulated in the writings of Peschel, Réclus, Davis, La Blache and others, fostered the general interest of educated people in Geography; and large numbers of new geographical societies sprang up in Great Britain, the Overseas Dominions and in foreign countries. Geography had long been included in the curricula of German and French universities, but Britain, pre-eminent in exploration during the twentieth century, had lagged behind in geographical studies and research; and it was not till 1892 that Geography was admitted as a university subject at Oxford and Cambridge and somewhat later at the other British and American universities.

§ 4. *The Publishing Activities of George Philip & Son
between 1878 and 1902*

The period between 1878 and 1902 was one of many vicissitudes and developments in the history of George Philip & Son. In it numerous changes took place in the personnel of the management of the business. In 1880, George Philip I, the founder of the Firm, retired from active business and died two years later at Bickley in Kent. After his father's retirement, George Philip II, left as sole partner, continued his control of the whole business from Liverpool. In 1880 also, Thomas N. Philip, the eldest son of T. D. Philip, the Managing Partner of Philip,

Son & Nephew, joined that Firm, of which he is its present Chairman and Managing Director. Three years later, G. Stanley Philip entered the London House of George Philip & Son. Stanley Philip was the third son of Mr. Joseph Philip (see page 95) and a grandnephew of the founder of the Firm. He was educated in London, and after matriculating at London University completed his education in Switzerland and Germany. A man of many gifts, with literary tastes, an acute critical faculty, financial acumen and a great capacity for administration and hard work, he was very soon entrusted with the management of the London House, and thenceforth took a large share in directing the publishing activities of the business. In 1891, a third George Philip, the youngest son of T. D. Philip, of Philip, Son & Nephew, and, like his cousin Stanley, a grandnephew of George Philip I, joined the Firm. George Philip III, after being educated at Liverpool College and in Germany, specialised in Geography under the eminent cartographer, Dr. E. G. Ravenstein, in London, to equip himself for a future career as Geographer to the Firm. Lastly, in 1893, Mr. John Tothill, a brother-in-law of Stanley Philip, and the present General Manager of George Philip & Son, Ltd., joined the Firm. Meanwhile, the Fleet Street premises had become inadequate for the requirements of the business, and in 1882 they were pulled down and the present handsome block of buildings erected in their stead. Here a large staff of trained cartographers were employed in the compilation of new maps and atlases, including a reconstructed edition of the crown folio *Handy General Atlas*, a new Map of London on the scale of 3 inches to the mile (published in 1885), and a new series of 80 large folio



32, FLEET STREET, LONDON, IN 1882.

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32, FLEET STREET, LONDON, IN 1934.

maps, which were published in volume form in 1890 as *Philips' Imperial Library Atlas*.

At the same time, the expansion in the publishing and wholesale stationery branches of the Firm's business had outstripped the capacity of output of the Caxton Buildings Works. It was therefore decided in 1887 to transfer the whole of the Stationery section of the business to a subsidiary Company under the name of Philip & Co., Ltd., with Caxton Buildings as its headquarters and printing factory; while the manufacture of the Firm's geographical and other publications was concentrated in new and commodious printing works, equipped with the latest types of machinery, situated in Hope Street, Liverpool.

George Philip & Son had long enjoyed a reputation for pioneer work in educational publications, by anticipating the requirements in new books and atlases created by fresh educational developments. Thus, after the introduction of universal elementary education in 1870, they not only produced new series of geographical textbooks and atlases, but also published, among other school books, series of textbooks on the *Kindergarten System* by Madame Michaelis and the Froebel Institute, Dale's *System of teaching Reading*, Taylor's *System of teaching Music and Sight Singing*, and a new *Semi-Upright System of Writing*.

This reputation was enhanced when, in 1888, a new and ambitious programme of geographical publications was undertaken under the joint editorship of Dr. E. G. Ravenstein—who at the same time was appointed Geographer to the Firm—Mr. (later Sir) J. Scott Keltie, the Librarian, and afterwards the Secretary of the Royal Geographical Society, and Mr. (later the Right Hon. Sir) J. Halford Mackinder, P.C., Reader in Geography at the University

of Oxford. The noteworthy geographical publications issued under the editorship of this triumvirate of eminent geographers included a series of seven volumes on the *World's Great Explorers and Explorations*, and *Philips' Systematic Physical and Political Atlas for Higher Schools and Private Students*, published in 1894. The Systematic Atlas was eminently a "pioneer" work, because, by its originality of treatment and technical perfection in production, it supplied for the first time a British school atlas more than comparable to the best atlases published abroad, giving a comprehensive survey of the new and more scientific conceptions of Geography that had been long recognised on the Continent and were beginning to be taught at the new Schools of Geography started at the British universities.

Among the other important publications of the early nineties—a list of which is given at the end of this volume—may be mentioned Ravenstein's *Topographical Map of England and Wales*, in 20 sheets, on the scale of 3 miles to the inch, Sir Robert Ball's *Atlas of Astronomy*, and many important Works of Travel, including *Emin Pasha in Central Africa*, James' *Unknown Horn of Africa*, Bateman's *First Ascent of the Kasai*, Thomson's *Travels in the Atlas* and Sir A. Hosie's *Three Years in Western China*.

In 1897, George Philip III assumed the management of the Liverpool Works, and under his editorship were issued, among other publications, *The London School Board Atlas*, specially compiled for the Education Committee of the London County Council, and the *Elementary Atlas of Comparative Geography*; School Atlases intended to provide junior classes with a survey of Geography based

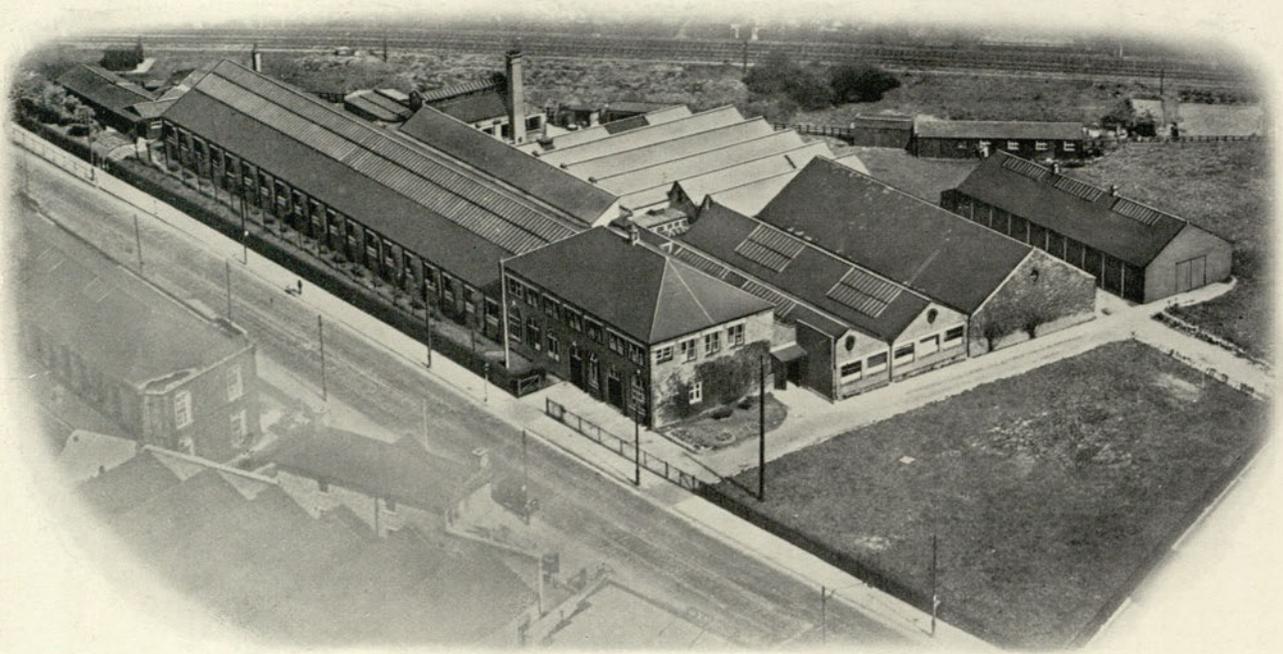
on a physical basis, such as had already been given for more advanced students in the Systematic Atlas.

As Nautical Publishers, George Philip & Son maintained their foremost position by issuing the following, among many other, important books and charts on the sea: *Wrinkles in Practical Navigation*, by Captain S. T. S. Lecky, R.N.R., first published in 1881, and still, in its twenty-first edition, the standard book on the subject; and, also by Captain Lecky, *General Utility Tables*, an *Atlas of Star Charts for Navigators*. *Dues and Charges in Foreign Ports*, originally published in the 'eighties, and now in its nineteenth edition, with a fourth volume issued later dealing with British Ports, and Captain Whall's *Handy Book of the Tides* and *Handy Book of the Stars*.

By this time it was becoming evident that the inconvenience caused by having the Works at so great a distance from the London headquarters (an inconvenience specially marked during the Boer War, when hundreds of thousands of war maps were printed at the Liverpool Factory) necessitated a reorganisation of the business. Accordingly, Mr. George Philip senior, although he was 78 years old, threw himself with remarkable vigour into the work of reorganisation, deciding in 1901 to turn the business into a Limited Liability Company and to transfer the Works to the neighbourhood of London. A large site was acquired at Willesden and the London Geographical Institute was erected—a model one-story factory, which was equipped with the most modern types of printing and other machinery driven by electricity generated on the premises. The removal from Liverpool was effected in 1902, and in the same year the business was converted into a Private Com-

THE STORY OF THE LAST 100 YEARS

pany with Mr. G. Philip Senior as Chairman and George Philip Junior and G. Stanley Philip as joint Managing Directors. Mr. Philip senior had the satisfaction of presiding at the first meeting of the Board of Directors; but his death a few weeks later dealt a severe blow to the new Company. His loss was deeply deplored by the whole staff, for, in an age which was not noted for cordial relationships between employer and employed, he had endeared himself to all his workpeople by a kindly consideration and by timely concessions in wages and hours of labour, when strikes threatened the Printing World.

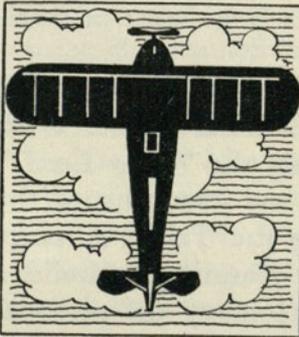


THE LONDON GEOGRAPHICAL INSTITUTE IN 1934.

CHAPTER V

GEOGRAPHY IN THE TWENTIETH CENTURY

§ 1. *Home and Foreign Affairs to the Outbreak of the Great War*



THE death of the Great "White Queen" in 1901 definitely brought to an end the period known as the "Victorian Age." A new period opened, promising a fresh and peaceful Industrial Revolution, with the nations bound together through their mutual interdependence in trade and through new and more rapid methods of com-

munications, by means of motor traffic, wireless telegraphy and the coming conquest of the air.

But this dawning era had inherited many tangled political problems from the last century, and scarcely a year was to pass without some smouldering danger spot bursting into flame. In the Far East the rivalries between Russia and Japan led to a war in 1904, from which Japan emerged victorious, with her Empire enlarged by the acquisition of Korea and the Port Arthur Peninsula. The Balkan Question became increasingly acute. In 1908, the Young Turks deposed the Sultan, and Austria, with the support of Germany, seized the occasion to annex Bosnia and Herzegovina. Three years later, Italy wrested Tripoli, the

Turks' last African possession, from the Ottoman Empire, and as a result of the Balkan War of 1912, the "Sick Man of Europe" was thrown back on a narrow stretch of country round Constantinople. The unjust division of the spoils of victory led to a second war the following year between the allies, in which Bulgaria met with defeat. Lastly, in 1908, and again in 1911, the arrogant meddling of the Kaiser in Morocco nearly led to a German war with France and Britain; indeed, in 1911, a conflict was only averted by the cession by France of a large tract of territory in French Equatorial Africa.

The growing arrogance of the German Emperor was another factor in the prevailing international unease. With his matchless army he was indisputably the "War Lord" of Europe, in the political sphere he had strengthened the position of Germany by contracting the Triple Alliance with Austria and Italy, and he was planning to build a fleet rivalling that of Britain. By diplomacy and personal visits he sought to gain a paramount influence in Constantinople, Bucharest and Sofia, and he obtained a concession from the Porte to construct a railway right across Asia Minor to the head of the Persian Gulf. He and his people became obsessed by Bernhardt's dream of an all-powerful German *Mittel Europa*, buttressed upon an invincible army and powerful fleet, and bound together in an economic confederation, stretching from the North Sea to the Mediterranean and the Persian Gulf.

This growing German Menace, and above all, the ambitious German naval programme, forced British statesmen to realise that the days of "Splendid Isolation" were over, and in the effort to preserve the Balance of Power, so long a vital principle of British policy, they sought, in the Triple

Entente with France, and later with Russia, to fashion a counterpoise to the Triple Alliance.

The War Menace was not the only trouble of the time. At home there was grave political and economic unrest, a growing disregard for law and order, great strikes, agitations, such as the suffragette movement, and above all the increasing danger of civil war arising out of the Irish Home Rule problem.

In the Orient, too, there were serious causes for disquietude. The blows struck at Turkey had inflamed the whole Mohammedan world and inspired an Islamic Revival, which had its repercussions in Egypt in an agitation to throw off British control. In India, the rapid growth of the National Movement, an agitation mainly Hindu in its leadership, and accompanied by a series of outrages on Europeans, went on up to the outbreak of the Great War, notwithstanding the Morley-Minto Reforms and the profound impression on the mind of India created by the solemn crowning of George V as King Emperor in Delhi, the old capital of the Moghul Emperors, in 1911.

On the brighter side of the picture must be noted the wide measures of reform that were passed by the British Parliament, including Acts providing for Old Age Pensions, Small Holdings, Workmen's Compensation in cases of injury, National Insurance and the Parliament Bill of 1911, limiting the duration of Parliament and the powers of the House of Lords and introducing the payment of members.

In the Overseas Dominions the years preceding the Great War were on the whole a period of abounding prosperity and progress. The co-operation of the Daughter States in the Boer War had cemented the ties that bound

them to the Mother Country, and when, in 1910, the Transvaal and Orange Free State (which had been granted fully responsible government in 1906, only four years after the conclusion of that unhappy conflict) formed with the Cape and Natal a federated Union of South Africa, the whole of the British Commonwealth of Nations stood four-fronted together to face the future.

To Canada a new stream of immigrants flowed, attracted to the fertile prairies of Saskatchewan and Alberta, which were admitted as provinces to the Dominion in 1905 and were rapidly becoming the chief Imperial granary. Australia and New Zealand were also prosperous and were attracting large numbers of immigrant settlers. The six states of the Australian continent, realising the community of their interests, bound themselves together in one Commonwealth of Australia on the first day of the New Century, and New Zealand assumed the status of a Dominion in 1907.

§ 2. *Exploration and Discovery between 1902 and 1917*

The continued interest in Polar exploration was aroused to a pitch of enthusiasm by the solution, within a space of three years, of the two outstanding riddles of Geography—the discovery of the North Pole in 1909 and that of the South Pole in 1912. Peary, who had devoted his life to Polar exploration, crowned his achievements, when in 1909, after his voyage in the *Roosevelt* to Grant Land, and his subsequent march northwards on the ice, he succeeded in fixing the position of the North Pole, not, as some had supposed, situated on land, but in a frozen sea, where soundings found no bottom at a depth of 1,500 fathoms.

The dramatic and tragic story of Captain Scott's race

for the South Pole with an unknown rival must be prefaced by mention of the 1908-9 expedition of Shackleton—one of Scott's former companions—to South Victoria Land, in which, after reaching $88^{\circ} 23'$ S. lat., he was forced to turn back for want of supplies. Amundsen, who earlier in the century had adventured through the North-West Passage in a tiny sloop and definitely fixed the position of the North Magnetic Pole, was fitting out an Arctic expedition in the *Fram*, when he heard of Scott's Expedition for the conquest of the South Pole. Hurriedly changing his plans, he sailed to the Antarctic, hoping to forestall Scott by a sudden dash on the South Pole. This he succeeded in doing, mainly because the Eskimo dogs he used for haulage of his sledges proved less susceptible to cold than the Manchurian ponies employed by Scott. Meanwhile, Scott, after wintering near Ross Island, started on his sledge journey southwards in November, 1911, and in spite of appalling weather conditions, reached the South Pole on January 18, only to find, from a sextant left behind, that Amundsen had forestalled him by little over four weeks. The return journey was very slow, through want of food, sickness and battling with the constant blizzards; first Evans and then Oates died, and a few months later a search party found the dead bodies of Scott and his two remaining companions, Wilson and Bowers, lying huddled together in their tent, with the instruments and diaries of the expedition beside them.

Among other, though less stirring, South Polar discoveries were the expeditions of Charcot in 1908-10, who followed the coast from South Graham Land to about 126° W. long.; Mawson and Wild, who linked up the survey of the Antarctic coast from Wilkes Land to Kaiser

Wilhelm II Land—discovered by Drygalsky—a distance of 1,000 miles; and Filchener, who reached Luitpold Land at the south end of the Weddell Sea in 35° W. long.

In Asia, the most noteworthy explorations of the period were those of the two archæologists—Sven Hedin, who continued his journeys in Central Asia, and Aurel Stein, who by his travels threw fresh light on the lost ruined cities lying in the Central Asiatic deserts; and the systematic exploration and mapping of the Himalaya by a band of surveyors and Alpinists. In Africa the major secrets had been unlocked, but there were a host of minor exploratory expeditions, the chief of which perhaps was the journey of Boyd Alexander in 1903-6 from Lake Chad to the Nile.

§ 3. *The Geographical Results of the Great War*

It would be impossible, within the compass of this small volume, to attempt a narrative of the Great War: we can only consider its effects on the Political Geography of Europe and the world.

After Bulgaria, first, then Turkey, Austria and finally Germany, had sued for peace in the late autumn of 1918, a great Congress of representative statesmen from all the allied countries, with Wilson, Clemenceau and Lloyd George as the "Big Three," met in Paris to dictate Terms of Peace to the defeated Powers and to recast the map of Europe.

There can be little doubt that the allied statesmen approached their task with a genuine desire so to frame a settlement as to recreate a new order out of the chaos left by the ravages of war, which would promise an enduring peace and the prospect of a world made "safe for

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democracy." But the problems confronting them were tremendous. Russia was in the throes of revolution, the "Ramshackle old Habsburg Empire" had crashed, Turkey lay in ruins, and Germany, its Hohenzollern ruler deposed and an exile, was threatened by a social revolution. Further, in the Orient there was the stirring of an Islamic Revival, China was in a chaotic condition and the decay in prestige of the white man—a natural result of the world-wide struggle—lent strength to the movement for throwing off European supremacy in Egypt, India and elsewhere. Lastly, there was a universal impoverishment, due to the waste of war; international trade was almost at a standstill and the fear of starvation confronted millions.

The first step taken by the peace-makers was the establishment of a solemn "Covenant"—inspired by President Wilson—to preserve the peace of the world by constituting a League in which the nations, while maintaining their individual sovereign rights, should join in a general care for the common interests of mankind. To this League of Nations—weakened from its inception by the abstention of the United States and Russia—all the other allied states, and also the countries neutral in the War, gave their adherence, and provision was made that the defeated Powers should be admitted as members as soon as they had fulfilled the Peace Conditions.

The Covenant of the League formed the basis on which the Peace Treaties with the individual defeated Powers were framed. The effect of their provisions was completely to recast the map of Central and Eastern Europe by the formation of a group of new nation-states, carved out of the fallen autocratic Empires of Austria, Russia and

Turkey, for which as far as possible the frontiers were drawn to enclose homogeneous peoples of common stock and speaking the same tongue. The confused medley of races in East Europe, however, is so great that this principle could not always effectively be carried out; and where interests clashed the new frontiers were determined to the advantage of the peoples that had supported the allied cause. Where considerable bodies of aliens were necessarily left within the borders of the newly constituted so-called Nation-States, "Minority Treaties" were imposed, placing the subject population under the guardianship of the League of Nations to ensure their just treatment, and in some cases large blocks of these aliens were interchanged, as the transference of Greeks from Asia Minor to Greece and of Turks from the Balkans to Asiatic Turkey.

We turn now to the new map of Europe itself. Germany, the only one of the three autocracies of Europe to escape complete disintegration after the War, was forced to retrocede Alsace-Lorraine, torn from France in 1871; to cede to Belgium the small districts of Malmédy and Eupen; to hand over the administration of the Saar Basin to the League of Nations; to agree to a plebiscite by which she eventually lost northern Slesvig, part of the territory taken from Denmark in 1864; to surrender Posen, a "corridor" to the sea, and part of the mining district of Silesia to the reconstituted State of Poland; and to agree to the old Hanseatic town of Danzig and the Memel district being placed under the guardianship of the League of Nations. The League also was given the custody of the German colonies, and Mandates for their administration were issued to Great Britain for German East Africa or Tanganyika (except the small enclave of Ruanda,

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entrusted to Belgium), West Cameroons and West Togo; to France the larger portion of the Cameroons and East Togo; and to the Union of South Africa, German South-West Africa; while in the Pacific, League Mandates were issued to Australia for German New Guinea; to New Zealand for German Samoa; and to Japan for the Carolines and other German island-groups.

The old Habsburg Empire was broken up completely. Imperial Vienna, with its proud history, remained only the capital of an insignificant agricultural state, formed of the German-speaking Austrian provinces; the new Hungary was enclosed within narrower boundaries that left millions of Magyars outside; the Czechs of Bohemia—with a strong German minority—the Slovaks of Moravia and the White Russians of Ruthenia were joined in a somewhat artificial union in the new State of Czechoslovakia; the Trentino—*Italia irredenta*—with the German-speaking districts of Tyrol south of the Brenner, the Istrian Peninsula and Trieste, were handed over to Italy. A new Serbo-Croat Kingdom, under the name of Yugoslavia, was fashioned out of Serbia and Montenegro and the Habsburg dominions of Bosnia, Herzegovina and Dalmatia; and Rumania became one of the larger states of Europe through the absorption of Transylvania (taken from Hungary) and Bessarabia (from Russia).

After the collapse of Russia and the Treaty of Brest Litovsk, by which she signed away her western provinces, the Poles and the peoples dwelling on the east Baltic coastlands were clamant in their demand for independence, and their claims were recognised in the new map drafted by the Peace-makers, though not always in strict accordance with natural and linguistic frontiers. Poland once more

appeared upon the map, with her eastern frontier extending far beyond her racial boundaries and almost rivalling in area her old kingdom of the Middle Ages. From the northern Polish boundary to the Arctic Ocean a line of new Baltic states was constituted: Lithuania (without its historic capital, Vilna, which was forcibly occupied by Poland), Latvia with the old Hanseatic town of Riga as its capital, Estonia and Finland.

The completeness of the overthrow of the Ottoman Empire was reflected in the terms of the abortive Treaty of Sèvres. By this Treaty the Turks were forced to recognise British Protectorates over Egypt, the Anglo-Egyptian Sudan and Cyprus; French Protectorates over Tunisia and French Morocco; Greek sovereignty over Thrace, the Turkish Ægean Islands and the Ionian districts round Smyrna; Italian sovereignty over Tripoli and the Dodecanese—occupied by Italy in 1911—and South-West Asia Minor, and the independence of Armenia, Mesopotamia, the Hejaz, Syria and Palestine, regions which were placed under British and French Mandates.

This Treaty, however, could never be ratified because of a remarkable outburst of national spirit in the Mohammedan world, especially in Asia Minor, Arabia and Egypt. The Turks of Asia Minor, led by Mustapha Kemal, suddenly threw off their allegiance to the Sultan, swept the Greeks to the sea and founded in Asia Minor a National State on Western lines, abolishing the Caliphate and revolutionising their whole exclusive social system. This new Turkey was received back into the comity of nations after the Treaty of Lausanne in 1923, and became a member of the League of Nations in 1932.

The Arabs, who had supported the Allied cause in the

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Great War, anticipated as their reward the establishment of an Arab Empire under the leadership of the Sherif of the Hejaz, the hereditary guardian of their holy places, Mecca and Medina. Their dream was only partially realised, for though Arabia itself became independent—the leadership, however, passing to Ibn Suad the ruler of the fanatical Wahabi tribes in Central Arabia—the rest of the Turkish dominions were assigned as Mandatory States to Great Britain and France, in some cases with the pledge of future self-government. This has indeed already been granted to the British Mandatory state of Iraq, which was given Sovereign Status in 1927 and admitted in 1932 to membership of the League of Nations. In the British Mandates of Palestine and Trans-Jordan, the former has been made a Jewish National Home, and considerable friction exists between the native Arab population and the incoming Jews ; while the latter is under the control of an Arab Emir. The French Mandate has been divided into the Syrian and Lebanese Republics, which have been granted a considerable measure of self-government, and the Governorships of Jebel Druze and Latakia.

In Egypt, the National movement became so irresistible that it was found expedient in 1922 to abandon the British Protectorate, and to grant complete independence, subject to the retention of a small British garrison to safeguard the Suez Canal and European interests, and with the further proviso that Egyptian troops should be withdrawn from the Sudan.

The Islamic Revival spread also to Persia, which threw off the tutelage of Russia and Great Britain, deposed the Shah and set up a new and more progressive regime.

The general unrest among the followers of Islam spread to India, and was evidenced by the attempted invasion of the North-West Provinces by the Amir of Afghanistan in 1919, and by the Mohammedans in India joining with the Hindus in a common cry for self-government; thereby strengthening the National Movement, which has continued to grow steadily, notwithstanding the generous terms of the Montagu-Chelmsford Reforms, the findings of the Simon Commission and the concessions obtained through the series of Round Table Conferences, which are still proceeding.

§ 4. *The Political and Economic Geography of the Post-War Period*

The prospects of a restoration of mutual good-feeling among the nations of the world were brightened by the Treaty of Locarno in 1925, strengthened in the following year by the Kellogg Pact, in which all the Powers in the world pledged themselves to refer their international disputes to Arbitration instead of seeking a solution by an appeal to Force; and by the admission of Germany to the membership of the League of Nations. But the hopes these Pacts had raised, that in the League the world possessed a power to maintain peace and good accord among its members, were soon to be rudely shattered by three successive blows at its prestige. Japan in 1931, notwithstanding its pledges to the League, took aggressive action in Manchuria and set up by force of arms the independent state of Manchukuo, now ruled by a descendant of the former Manchu Emperors of China. Following the condemnation of this action by a Commission sent out by the

League to report, Japan withdrew its membership of the League.

The prestige of the League was further lessened by the successive failures of the World Economic Conference it had summoned to deliberate on measures to re-establish prosperous international trade conditions, and the Disarmament Conference, which broke down without having come to any settlement, after Germany had withdrawn in disgust from membership of the League.

In the economic sphere, the gradual improvement in world trade which had been going on between 1924 and 1929 was suddenly arrested by a tremendous financial and economic crisis in the United States, which followed a post-war period of unexampled prosperity and trade expansion buttressed on wild speculation and the insecure foundations of the vast stores of gold she had accumulated during and after the War. Into the causes of this collapse it is impossible to enter here; but, to a world overflowing with everything that is needed for the welfare of mankind, it brought falling prices, new dislocations in the monetary systems of the nations, impoverishment and unprecedented unemployment, conditions from which the world has not yet recovered.

Britain and the Overseas Empire suffered with the rest of the world. The foreign trade and shipping of Britain declined. In 1931 she was forced to abandon the Gold Standard, a course that was followed by other countries, and, after the election of the "National" Government, to give up in 1932 the policy of Free Trade, followed for nearly ninety years, in favour of Protection. Efforts to foster trade within the Empire by means of a general reduction in the tariffs of the Overseas Dominions, made

at the Ottawa Conference, failed, though agreements were come to establishing preferential treatment for Empire goods.

After the War, Britain was confronted by many pressing domestic problems, which on the whole were faced with determination and courage. Labour that had been absorbed in war industries was gradually diverted back to normal channels of trade; great efforts were made to find work for the millions of demobilised soldiers, and to build new houses for them to live in; immense sums were "doled" out to the unemployed to mitigate their evil lot; an earnest effort was made to solve the eternal Irish problem by the grant of Dominion Status to the Irish Free State; women were given equality of franchise; large concessions to the demands of a Labour Party, pledged to a Socialistic reorganisation of society, were carried out by Acts of Parliament; and, above all, the oppressive burden of debt and taxation was borne with resignation so that British credit could be preserved.

In the Empire the chief post-war developments must be recorded briefly. The fact that the Daughter States of Britain had grown up was acknowledged by a complete change in the structure of the Empire, admitting equality of status between the self-governing Overseas Dominions and Britain, linked as separate Sovereign States in an alliance under the British Crown; Southern Rhodesia received the grant of self-government in 1932; the British Protectorate over Egypt and Mandate over Iraq were withdrawn and the independence of both countries was recognised by Britain; while in India the advance towards Dominion Status was furthered by the decision of the Indian Princes to take their place in an agreed system

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for the government of the whole of India; and the deliberations of the Round Table Conferences from which has issued the "White Paper," still a subject of discussion and controversy.

§ 5. *Exploration and Discovery since the Great War*

While exploration was at an almost complete standstill during the War years, military requirements gave a great impetus to surveying and the making of maps, especially of the fighting zones in Asia and Africa. New and quicker methods of surveying were invented, through the use of improved instruments and of land and air photography, by means of which the task of mapping the vast unsurveyed regions of the world is proceeding without halt. The exploration of the post-war period is not remarkable for any discoveries of major importance, for all the great geographical riddles had been solved. Exploration took the form of intensive studies of particular regions, and expeditions of this nature were so numerous that it is only possible to mention a few of the more important. Shackleton made two more voyages to the South Polar Seas. In the first, he sailed on the eve of the Great War with the intention of crossing the Antarctic Ocean to the Weddell Sea. There his ship the *Endurance* was nipped in the ice and Shackleton made an adventurous voyage in an open boat to South Georgia to seek succour for his companions marooned on the ice. His second voyage in the *Quest* ended tragically with his death in 1922. Wilkins visited South Graham Land, and Mawson and the Norwegian Expedition, Kemp and Enderby Lands, while Byrd achieved the double feat of flying over the South Pole in

1929, after having already in 1926 reached the North Pole by air. Africa was further opened up in a series of expeditions too numerous to mention, and Mittelholzer was the first to accomplish the transcontinental flight from Cairo to Capetown.

In Asia, Aurel Stein undertook new journeys in the trans-Himalaya region and Baluchistan, and Sven Hedin continued his explorations in North China and Central Asia; a German-Russian Expedition under Rickmer explored the Pamirs, and some of the hidden secrets of Arabia were revealed by the journeys of Philby, Bertram Thomas and others. Lastly, from 1921 onwards a series of organised expeditions attempted the conquest of Mount Everest. In the first, under Colonel Howard Bury, the climbers reached an altitude of 22,500 feet; the following year, General Bruce conducted a party, some of which, using oxygen to assist breathing in the rarified air, attained a height of 27,000 feet; in 1924, Norton and Somervell only failed of reaching the summit by under 1,000 feet, and in a second attempt Mallory and Irvine probably succeeded, though it cost them their lives. Nine years later the attack was resumed under Ruttledge, but the abnormally bad weather conditions prevented the climbers from reaching a higher altitude than 28,100 feet. These failures to reach the summit on foot were to some extent redeemed by the success attending the Air Expedition of 1933, in which Lord Clydesdale and McIntyre circled the peak in two flights, bringing back photographic records of their flights, from which it was possible to construct maps of Everest and the narrow strip of territory they traversed.

§ 6. *The Publishing Activities of George Philip & Son, Ltd., in the Twentieth Century*

The story of George Philip & Son, Ltd., in the twentieth century is one of further expansion and development. Since the death of Mr. George Philip senior in 1902 there have been many changes in the Management, and the present Mr. George Philip—the Chairman of the Company—is now the only survivor of the original Board of Directors. The present Board consists of a Directorate of six members. Mr. Frederick Bennett, the present Assistant General Manager, who formerly carried on a prosperous printing and bookselling business at Sherborne, entered the Firm in 1912 as a Director, and Mr. John Tothill, the present General Manager, joined the Board three years later. Mr. Tothill had previously been the Managing Director of Philip & Tacey, Ltd., a subsidiary Company formed in 1903 to cope with the Wholesale School Supply section of the business; and though its increasing publishing activities forced the Company to withdraw from active participation in the management of Philip & Tacey in 1919, close and cordial relations continue to exist between the two Firms, and Mr. Tothill remains its Chairman. Captain E. G. Godfrey, M.C., who, after active service in France, took a post-war course at Oxford, joined the Company in 1922 and became a Director five years later; Mr. R. Lassell Philip, a son of G. Stanley Philip, educated at Malvern and Magdalene College, Cambridge, where he took his degree in Economics and Modern Languages, entered the business in 1924, joining the Board in 1927; and Mr. Ronald Bennett, a son of Mr. F. Bennett, educated at the Leys School, Cambridge, after qualifying as a Char-

tered Accountant, entered the Counting House in 1926, was appointed Secretary of the Company a year later, and in 1930 became a Director. The late Mr. David Keay, and his successor Mr. C. A. Lely, were Works Managers at Willesden from 1904 to 1929, the former being a Member of the Board of Directors from 1912 to 1922, and the latter from 1923 to 1929. Mr. A. E. Brennan, the present Works Manager, has had considerable experience in the Printing Trade, having held high executive positions with the Amalgamated Press Ltd., McCorquodale & Co. Ltd., and the Pioneer Press of India. Recently the sons of the General Manager and the Chairman of the Company have joined the Firm, R. J. Tothill, educated at Tonbridge and St. John's College, Cambridge, and George M. Philip—the fourth to bear the name of the founder—educated at Repton and Jesus College, Cambridge. The former took his degree in Modern Languages and Geography and the latter took the Geographical Tripos.

Of the two original Directors who have passed away, Mr. Joseph Collyer—a cousin of George Philip II—retired in 1909, after fifty-one years of service in the Company, dying in 1929 at the age of 93. Mr. Stanley Philip, whose watchful care and guidance during a period of over forty years had been so largely responsible for the growth and continuous prosperity of the business, was forced by ill health to retire in 1923, to the great regret of his colleagues on the Board of Directors and the whole Staff. After less than two years of well-earned leisure in his Devonshire home, he died at the age of 59.

The Allied Firm of Philip, Son & Nephew, Ltd., through the exigencies of an expanding trade, were forced in 1913 to transfer their Head Offices and general business

from South Castle Street to larger and more convenient premises in Church Street, in the heart of the business life of Liverpool, at the same time reorganising the School Supplies section at commodious premises in Paradise Street. In the same year Mr. T. D. Philip, the Managing Director, died in his 83rd year. His son, Mr. T. N. Philip, the present Chairman and Managing Director of the Firm, succeeded him, and his son, Mr. John Philip, joined the Board of Directors in 1928.

It will thus be seen that George Philip & Son and the allied Firm of Philip, Son & Nephew have always been "Family" businesses, and it is gratifying to feel that the "Family" traditions seem likely to be continued in the future. A list of the members of the Philip Family who have been connected with the Management of George Philip & Son and its affiliated businesses will be found at the end of this volume.

This family feeling has always been reflected in the friendly relations between the Management and the Staff. For many years, social, literary and athletic clubs have been in existence, in which both have freely mingled on equal terms. In 1921, a large Canteen was opened at the Willesden Works for meals and social recreation, and in the same year the Shareholders agreed to the insertion of a Clause in the Articles of Association assigning a definite proportion of the annual profits of the Company to a Profit Sharing Scheme, in which every member of the Staff should participate. The bonuses from this Fund to the individual members of the Staff in some years have been equivalent to as much as five weeks' extra salary or wages. As an offshoot of the Scheme, a Sick Benefits Fund was started, and in 1928, in response to a general wish

expressed by the Willesden Staff, the Works were switched over to a five-day week, thereby giving the workpeople their Saturdays free.

The War years proved a heavy strain on the resources of the Company. Over 80 per cent. of the staff eligible for service volunteered for the army or navy before Conscription was introduced, and the Company undertook as a war duty to supplement the allowances of all the members of the Firm engaged in active service, so that, in their absence, their homes could be maintained in comfort. This was done, and after the War every man who returned from active service was reinstated in a job. Throughout the war-period, the Geographical Institute at Willesden, notwithstanding its depleted staff, worked at high pressure, mainly in the production of maps of the various Battle-fronts, millions of which were issued in the course of the War, and on highly confidential work for the War Office and the British Government.

The beginning of the twentieth century was noteworthy for the great Educational Reform effected by Mr. A. J. Balfour's Education Act of 1902, which, for the first time, gave England a complete and co-ordinated system of Education ranging from the elementary school right up to the university. When this great measure became law George Philip & Son already possessed a comprehensive Catalogue of School Publications; but the occasion was seized to launch out on a programme of new atlases, maps and text-books to meet, and in many instances to anticipate by their "pioneer" character, the educational requirements of the new Act. Only the more important of these new publications can here be noted. For further particulars the reader is again referred to the list at the end of the volume.

In Geography, the Firm continued its "pioneer" work by producing textbooks and atlases fully abreast of the modern developments of Geography as a science and suggestive of new and better methods of teaching the subject. Among them, the more outstanding books were Sir J. Scott Keltie's *Applied Geography*, Sir J. Halford MacKinder's *Geographical Readers*, a series of four volumes on Regional Geography; the *Human Geographies* of Fairgrieve and Young, in which the influence exerted on human activities by physical conditions and environment was emphasised; and the *Regional Geography* and other geographical textbooks by Professors Unstead and Taylor. These distinguished geographers also edited a series of eleven Comparative Wall Atlases of the World, the separate Continents and other smaller regions, each atlas consisting of eight sets of maps, dealing separately with the various aspects of physical, climatic, political and economic Geography. In addition, a long series of maps and atlases were produced under the editorship of George Philip, the more important of which have been an extensive series of four- and two-sheet *Comparative Wall Maps* combining physical and political features; a complete range of new School Atlases, including the *Visual Contour*, *New School*, *Modern School* and *Senior School Atlases*, the last named an enlarged and entirely reconstructed edition of the Systematic Atlas; besides many other atlases specially prepared for the Overseas Dominions and the United States, and including atlases, maps, and globes printed in Arabic, Turkish and many of the Indian vernaculars. Among general atlases and maps may be named the *Harmsworth Universal Atlas*, a large crown folio atlas with 242 pages of coloured maps and a Gazetteer Index of over 100,000 names, produced

for the Amalgamated Press after the Boer War, of which over 100,000 copies were sold, several new and enlarged editions of the *Handy General Atlas*, notably the edition published after the Great War, showing the territorial changes effected by the Peace Treaties ; the *Chambers of Commerce Atlas*, issued for *The Times* Trade Supplement and under the auspices of the British Chambers of Commerce, a monumental work giving an exhaustive survey of the world's post-war Economic Resources, Trade and Communications, and the *International Atlas*, a crown folio volume with 160 pages of coloured maps and an Index of 75,000 names.

Among the more important General Maps published during the twentieth century may be noted a seven-sheet Map of the United States (on the scale of 40 miles to the inch) a four-sheet Map of the Provinces of the Dominion of Canada (on the same scale), two-sheet Commercial Maps of Europe, China (edited by Sir Alex. Hosie) and South America (edited by W. S. Barclay) and large-scale maps of the Rand, Western Australia and other gold-mining regions.

Among the many Road Maps published in various forms to meet the demand caused by the remarkable revival in the use of the Roads of Britain through the coming of the motor-car, and their development and reclassification through the operations of the Ministry of Transport, may be mentioned *English Roads at a Glance*, a series of volumes produced for the *Daily Mail*, and the R.A.C. Motoring Map of England and Wales, the official Map of the Royal Automobile Club and the *Road Atlas-Guide to Great Britain*.

In History, the more outstanding publications have been *A Short History of the British Commonwealth*, by Professor

Ramsay Muir, in two volumes, published 1922-4, followed by his smaller British History for use in Schools in 1929, and, in collaboration with George Philip, two historical atlases—the *Atlas of Mediæval and Modern History* for advanced students and the *School Atlas of Universal History* and an *Historical Wall Atlas*. Two smaller Historical Atlases for Intermediate and Primary Classes were also issued, under the auspices of the Historical Association under editors appointed by that body. In the *Piers Plowman Histories*, for Primary and Secondary Schools and College use, a series of fourteen volumes written by eminent historians, under the general editorship of Principal E. H. Spalding, a new and more human method of teaching *History* was introduced, the general acceptance of which has been proved by phenomenal sales.

Other School Publications issued during the present century have been a lengthy series of *Individual Work Assignments* on the Dalton Plan on Geography, History, Arithmetic, Literature, English Composition, Natural Science, Drawing and Art, several series of School Readers, including *Adventures of Exploration*, edited by Sir John Scott Keltie and S. C. Gilmour, the *New Prospect Readers*, edited by E. Young, a series of *English Composition Books*, the Prose and Poetry Anthologies of the *World's Story Time* and the *King's Highway* and other books by W. J. Glover, the *New Era Library*, Brown's *Sectional Arithmetics*, in seven volumes, Dr. E. M. Sanders' series of *Pictorial* and *Observational Geographies*, and Prof. E. G. R. Taylor's and F. M. Miller's *Informative Geographies*.

Among the Firm's Nautical Publications, issued in the twentieth century, may be mentioned MacNab's *Trigonometry for Seamen* and MacNab's *Catechism of*

the Law of Storms, *Martin's Compass Adjustment*, and the large folio *Mercantile Marine Atlas*, edited by George Philip, the thirteenth and Centenary Edition of which is to be published this year.

George Philip & Son, Ltd., were the first among Geographical Publishers to realise the value of maps as an advertising medium, from the fact that the Great War had developed a "map-sense" among large sections of the general public through their universal use both at the Front and at home during the War years. Largely through the numerous Advertising Schemes, in which maps, atlases or globes have formed the essential feature, prepared by the Firm since the War for business houses or leading newspapers, the Map Advertisement has come to be recognised as one of the most striking means of attracting publicity.

Finally, George Philip & Son, Ltd., is commemorating the hundredth anniversary of its existence by issuing a number of Centenary Publications, including a reconstructed and greatly enlarged edition of the *Handy General Atlas*, with many new maps and a new Index of over 116,000 names; new and enlarged editions of the *Mercantile Marine Atlas*, the *Record Atlas* (with a new Gazetteer Index of 35,000 names), the *Modern School Atlas* (reconstructed with many new features so as to make it the ideal Atlas of Physical, Political and Economic Geography for use in Public and Secondary Schools), while an Advanced Atlas covering the whole field of Geography for University Use and advanced Students is in active preparation and may possibly be published in the Firm's Centenary Year.

In conclusion, this brief Record of Geographical Pro-

gress and of Map-making in the last hundred years may fittingly end with a short description of the various Departments of the London Geographical Institute at Willesden, to show the scope and diversity of its manufacturing activities. The Institute, as recently enlarged, and exclusive of the new extension made this year, covers over two acres of ground. In the two-story portion, shown on the accompanying view, the Editorial and Geographical Departments, with their large staffs of trained Geographers and highly skilled staffs of geographical draughtsmen and engravers, and the extensive geographical Library, are housed. The original work prepared by the draughtsmen and copper and wax engravers serves mainly to feed the other Departments of the Factory. These include the *Transferring Department*, in which the engraved or processed plates are transferred to the machine stone; the *Lithographic Artists' Department*, where the original colour copies made by the geographical draughtsmen are reproduced on stone; the *Process Department*, in which the most modern photo-lithographic processes are employed for map reproduction and half-tone and line work for letterpress printing; the *Machine Room*, occupying over 15,000 square feet of floor space, and equipped with the latest types of electrically driven lithographic and letterpress machines; and large Departments devoted to *Binding* and *Map-mounting* of every description. The *Globe Department* was reorganised and enlarged in 1916, when the famous Globe Manufacturing Business of C. Smith & Son—which had been established over a century—was purchased; and at the present time George Philip & Son, Ltd., are by far the largest manufacturers of Globes in this country, producing many thousands of Globes annually,

THE STORY OF THE LAST 100 YEARS

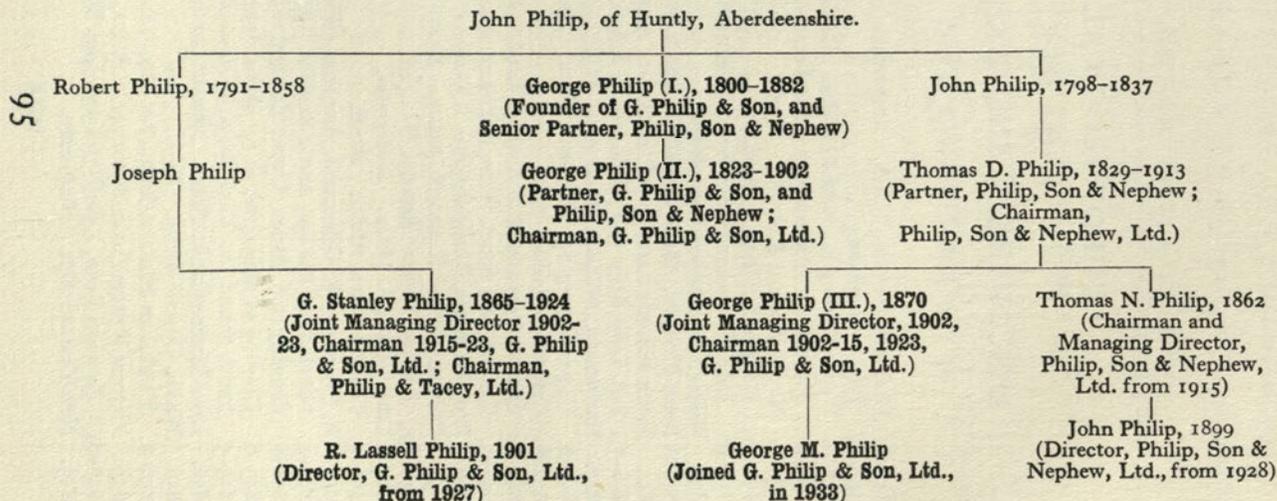
ranging from 3 to 30 inches in diameter and printed in English and many foreign languages.

Lastly, the geographical activities of the Institute were rounded off three years ago by the acquisition of the well-known Relief-model Map Business of Exelby Reynolds of Shipley, and a new Department was opened in which every kind of Relief Map is now modelled for educational and commercial purposes.

Possessing these technical resources at the London Geographical Institute, perfected by the experience of a century in the art of map-making and book production, and with a wide range of standard publications which have won for the Firm a foremost reputation among Educational Publishers, George Philip & Son, Ltd., may look forward with confidence to a second century of its existence as a Publishing House and also as General Printers, in the hope that its future activities will continue to maintain that steady progress and expansion of the business which has been characteristic of its history during the last hundred years.

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CHRONOLOGICAL LIST
of the chief
DISCOVERIES AND EXPLORATIONS
of the last Hundred Years (1834-1934)

- 1832-6. Utah and Nevada, U.S.A. *Bonneville*.
 1835-55. Java. *Jungbuhn*.
 1835-6. Upper Darling R., New S. Wales. *Mitchell*.
 1836-40. Sources of the Mississippi. *Nicollet*.
 1837-9. North-Western Australia. *Grey*.
 1837-47. Wisconsin, U.S.A. *Owen*.
 1839-40. Lake Torrens and Lake Eyre, S. Australia. *Eyre*.
 1839. Wilkes Land, Antarctica. *Wilkes*.
 1840. Louis Philippe, Adélie and Clarie Lands, Antarctica. *Dumont d'Urville*.
 1841. South Victoria Land to 78° 10' S. lat., Antarctica. *Clarke Ross*.
 1842-7. Salt Lake Basin and California, U.S.A. *Fremont*.
 1843. Hadramaut, Arabia. *Wrede*.
 1844-6. Upper Hwang-ho, Tibet and Lhasa. *Huc and Gabet*.
 1844-6. Central Australia. *Sturt*.
 1844-5. Central Queensland to Arnhem Land. *Leichhardt*.
 1845-7. Central New South Wales and Queensland. *Mitchell and Kennedy*.
 1846. Franklin Strait, Arctic Regions. *Franklin*.
 1847. Kilimanjaro and Kenya, E. Africa. *Krapf and Rebmann*.
 1848-59. Amazon Basin. *Bates*.
 1849. Lake Ngami, S. Africa. *Livingstone*.
 1850-5. Central Sudan, Africa. *Barth*.
 1850. R. Negro and R. Orinoco, S. America. *Wallace*.
 1850-4. North-West Passage, Arctic Regions. *McClure*.
 1851-6. Crossing of S. Africa (Upper Zambesi and Victoria Falls). *Livingstone*.
 1853-6. Crossing of Africa, W. to E. *Silva Porto*.
 1853-5. Smith Sound and Kane Basin, W. Greenland. *Kane*.
 1856. Lake Tanganyika, E. Africa. *Burton and Speke*.
 1856. Wadai, Central Africa. *Vogel*.
 1856-8. Karakoram Pass and Kwen-lun Mts. *Brothers Schlaginweit*.
 1858. Victoria Nyanza (Lake Victoria), E. Africa. *Speke*.
 1858-64. Zambesi Basin, Lake Nyasa and Lake Shirwa. *Livingstone*.
 1859. New Zealand Alps. *Hochstetter*.

LIST OF CHIEF DISCOVERIES AND EXPLORATIONS

- 1860-1. Three Crossings of Australia, S. to N. by *Burke and Wills, Stuart, and McKinlay*.
1860. Sierra Nevada and Californian Coastal Range, U.S.A. *Whitney*.
- 1860-1. Ellesmere Land and Grinnell Land (to 80° 50' N. lat.). *Hayes*.
1861. Cameroons, West Africa. *Burton and Mann*.
1862. Victoria Nile. *Speke*.
1864. Albert Nyanza (Lake Albert), Central Africa. *Baker*.
1864. North Manchuria. *Prince Kropotkin*.
1865. Ogowe District, W. Africa (Gorilla discovered). *du Chaillu*.
- 1865-7. Sahara and Sudan. *Robljs*.
- 1866-73. Lualaba R., L. Mweru, and L. Bangweulu, Central Africa. *Livingstone*.
1868. Turkistan and Pamirs. *Feldschenko*.
- 1868-72. South Manchuria and China. *Richtbofen*.
1869. Tibesti, Sudan. *Nachtigal*.
- 1869-70. East Coast Greenland. *Koldewey and Higemann*.
1870. Welle R., Equatorial Africa. *Schweinfurth*.
- 1870-1, 1876-80. Tarim Basin and Tibet. *Prschewalski*.
1871. Zimbabwe Ruins, S. Africa. *Mauch*.
1871. Kennedy and Robeson Channels, N.-E. Greenland. *Hall*.
1872. South Central Africa. *Selous*.
- 1872-4. Franz Josef Land. *Payer and Weyprecht*.
- 1872-6. "Challenger" Deep-Sea Expedition. *Nares, Wyville Thomson, etc.*
- 1873-5. Crossing of South Africa. *Cameron*.
1873. Tibet. *Pundit Nain Singh*.
- 1873-4. Two Crossings of Australia (S. Australia and N. Terr.) by *Warburton and the Brothers Forrest*.
- 1874-7. Crossing of Central Africa (voyage down Lualaba and Congo Rivers). *Stanley*.
- 1875-6. Crossing of West Australia. *Giles*.
- 1876-83. Equatorial Africa (Niam-niam and Aruwimi R.). *Junker*.
1876. Northern Territory of Australia. *Hodgkinson*.
- 1877-9. Crossing of South Africa, E. to W. *Serpa Pinto*.
- 1878-80. Lake Rukwa, E. Africa. *Thomson*.
1878. Sanpo-Brahmaputra R. *Pundit K. P.*
1878. East Tibet and South Mongolia. *Pundit A. K.*
1878. Hejaz, Arabia. *Doughby*.
1878. Jebel Shammar, Arabia. *Blunt*.
- 1878-9. North-East Passage, Arctic Ocean. *Nordenskjöld*.
- 1879-80. Crossing of North-West Africa. *Lenz*.
- 1881-2. Crossing of South Africa, W. to E. *Wissmann and Pogge*.
1883. Atlas Mts., Morocco. *de Foucauld*.
- 1883-4. Rift Valley and Masai Country, E. Africa. *Thomson*.
1883. Upper Yukon, Canada. *Schwatka*.
- 1884-5. Kasai R. (Congo). *Wissmann*.

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- 1884-5. North New Guinea. *Funsch and Dallmann.*
 1884-7. Xingu R., Brazil. *Steinen.*
 1885. Crossing of South Africa. *Capello and Ivens.*
 1886-8. Asia Minor. *Kiepert.*
 1887-9. Crossing of Africa, W. to E. (Aruwimi, Mt. Ruwenzori, and L. Edward).
Stanley.
 1887-9. Middle Niger R. *Binger.*
 1887. First Crossing of Central Asia, E. to W. *Younghusband.*
 1887-8. Crossing of Australia, N. to S. *Lindsay.*
 1888. Lake Rudolf and Lake Stefanie. *Teleki and Höbnel.*
 1888. Crossing of Greenland. *Nansen.*
 1889. Hindu-Kush and Karakoram Mts. *Younghusband.*
 1889. East Tibet. *Rockhill.*
 1890, 1893-7, 1899-1902. Turkistan, Pamirs, Tibet, and across Asia, E. to W.
Sven Hedin.
 1891-2. West Australia. *Lindsay.*
 1892. Kagera R. (Alexandra Nile). *Baumann.*
 1893-4. Lake Kivu and Ruanda, Central Africa. *Götzen.*
 1893-6. Voyage of "Fram" to 85° 57' N. lat. and Sledge Journey to 86° 14' N. lat.
Nansen.
 1894. Adamawa Highlands, Central Africa. *Passarge.*
 1894. MacDonnell Range, Northern Territory. *Winnecke.*
 1894. Crossing of Labrador, Canada. *Low.*
 1894-7. Franz Josef Land. *Jackson.*
 1895. Upper Mekong R. and Salween R. *Prince H. d'Orléans and Bonvalot.*
 1895-8. Argentine-Chile Frontier Districts. *Steffan.*
 1895. C. Adare, South Victoria Land, Antarctica.
 1896. Crossing of Borneo. *Nieuwenhuis.*
 1896. Crossing of British New Guinea. *MacGregor.*
 1896-7. West Australia. *Carnegie.*
 1896. Xingu R., Brazil. *Hermann Meyer.*
 1897-9. Congo to Nile (Fashoda). *Marchand.*
 1897-8. Belgica Deep Sea Expedition. *Gerlache de Gommery.*
 1898-1900. Algeria to the Congo. *Foureaux.*
 1898-1900. Crossing of Africa from Zambesi to the Nile. *Gibbons.*
 1898-1900, 1908-11. Gobi and East Tibet. *Koslow.*
 1898-1909. Polar Sledge Expeditions, 1900 to 83° 50' N. lat., 1902 to 84° 17',
 1906 to 87° 6', and 1909 to North Pole. *Peary.*
 1898. Enderby Land, Antarctica. "Valdivia" Deep-Sea Expedition.
 1899-1900. Polar Voyage to 86° 34' N. lat. *Duke of the Abruzzi.*
 1899-1900. East Coast, Greenland to 69° 28' N. lat. *Amdrup.*
 1900-1, 1906-8, 1913-16. Turkistan, Pamirs, and E. Tibet. *Stein.*
 1900-2. Sverdrup Is., Arctic Regions. *Sverdrup.*
 1901. West Australia. *Brockman.*

LIST OF CHIEF DISCOVERIES AND EXPLORATIONS

1901. Colville R., Alaska. *Peters and Schrader*.
- 1901-4. Ross Sea, Antarctica. *Scott (in the "Discovery")*.
1902. Crossing of Australia, S. to N. *Maurice and Murray*.
1902. Ecuador Andes. *Hans Meyer*.
- 1902-3. West Antarctic Coast. *Nordenskjöld*.
- 1902-4. Melville Bay, Arctic Regions. *Mylius Erichsen*.
- 1903-6. Lake Chad to the Nile. *Boyd Alexander*.
1903. Tien Shan and Altai Mts. *Huntingdon*.
- 1903-6. North-West Passage. *Amundsen*.
1903. Kaiser Wilhelm II Land, Antarctica. *Drygalski (in the "Gauss")*.
- 1903-4. Coats Land, Antarctica. *Bruce (in the "Scotia")*.
- 1903-5, 1909-10. West Antarctic Coast. *Charcot*.
1904. Persia. *Lord Curzon*.
1904. East Coast, Greenland to 77° 36' N. lat. *Duke of Orléans*.
- 1906-8. Trans Himalaya, Upper Sutlej, and Brahmaputra. *Sven Hedin*.
1906. Pilcomayo R., South America. *Hermann*.
- 1907-9. S. Victoria Land to 88° 23' S. lat. and Magnetic S. Pole. *Shackleton (and David)*.
1911. Mufumbiro Mts., Equatorial Africa. *Jack*.
- 1911-12. North-East Arabia. *Raunkiaer*.
- 1911-16. Upper Orinoco, S. America. *Koch Grünberg*.
- 1911-12. South Pole. *Amundsen, 16 Dec. 1911; Scott, 18 Jan., 1912*.
- 1911-12. Prince Regent Luitpold Land in W. Antarctica. *Filchner (in the "Deutschland")*.
- 1911-14. King George V., Adélie, and Queen Mary Lands. *Mawson*.
1912. Central Arabia. *Leachman*.
- 1912-13. Wilhelmina Peak, Dutch New Guinea. *Herderschee*.
- 1913-18. Sahara (Tibesti and Borku). *Tilbo*.
- 1914-17. Weddell Sea. *Shackleton*.
1918. Nejd, Arabia. *Philby*.
- 1920-3. Libyan Desert. *Hasanein Bey and Rosita Forbes*.
- 1922-7. Tuareg Tribes, Sahara. *Brothers Robb*.
1922. Air Survey, Lake Eyre Region, S. Australia. *Halligan*.
1923. Central Brazil. *Maull*.
- 1924-6. Sahara and Equatorial Africa. *de Laborie*.
1924. Mongolia. *Kozloff*.
1924. South Arabia. *Cheesman*.
1924. North Atlantic. *Danish "Dana" Deep Sea Expedition*.
1925. Tapajoz R., Brazil. *Fawcett*.
1925. Air Flight to 87° 44' N. lat. *Amundsen and Ellsworth*.
- 1925-7. South Atlantic. *German "Meteor" Deep Sea Expedition*.
- 1926-7. Central Sahara. *Kilian*.
- 1926-8. Central Asia. *Fischner*.
1926. North-West Mexico. *Weibel*.

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- 1926-31. Gran Chaco, South America. *Krieg.*
1926. Airship Flight across Polar Sea from Spitsbergen to Alaska. *Amundsen, Ellsworth, and Nobile.*
1926. Air Flight over N. Pole. *Byrd.*
1927-8. West Sahara. *Augiéras.*
1927. North China. *Sven Hedin.*
1927-8. Chinese Turkistan. *Trinkler and de Terra.*
1927. South Atlantic. *British "Discovery" Expedition.*
1928. Sahara (Ahaggar Plateau). *Olusson.*
1928-9. Amazon-Parafia Watershed, S. America. *Plichta and Kaap.*
1928. Airship Flight to 81° 15' N. lat. *Nobile.*
1928-30. South Graham Land (by air), W. Antarctica. *Wilkins.*
1928-30. Oceanic Voyages of the "*Dana*," and *Carnegie Expeditions.*
1929-30. Kemp and Enderby Lands, Antarctica. *Mawson and "Norwegia" Expedition.*
1929-30. Ross Dependency, Antarctica, and Flight to S. Pole. *Byrd.*
1929-30. East Greenland Currents. *Defant.*
1930-1. Patagonian Andes. *de Agostini.*
1930. Malay Seas. *Dutch Expedition.*
1930. Crossing of South Greenland. *Brit. Arctic Air Route Expedition.*
1931. Madagascar. *Blutschli and Brandes.*
1931. Roba el Khali Desert, Arabia. *Thomas.*
1931-3. King Edward VII Land and Circumnavigation of Antarctica. "*Discovery II*" *Expedition.*

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 - ✓ Philips' Classical Atlas. 36 folio maps, 27 × 22 ins. *Hughes*.
 - Philips' Popular Atlas. 36 maps, 14 × 11 ins.
 - Philips' Young Scholars' Atlas, 14 × 11 ins.
 - ✓ Philips' 4-Sheet Commercial Map of England and Wales. *Bartholomew*.
 - Philips' 2-Sheet Tourist Maps of England, Scotland and Ireland.
 - Philips' English County Atlas, cr. 4to.
 - Philips' 4-Sheet Map of Europe.
 - Philips' 2-Sheet Map of the World on Mercator's Projection.
 - Philips' 4-Sheet Plan of Liverpool. *Bennison*.
 - ✓ Philips' School Classical Atlas. 36 maps, 14 × 11 ins.
 - Philips' 6-Sheet Plan of Liverpool. 6 ins. to 1 mile. *Gage*.
 - Philips' Series of National Copybooks. 15 books.
 - The Laws of Shipping, and Shipping Manual. *Lee*.
 - Seaman's Medical Guide. *Findlay*.
 - The Seaman's Friend. *Dana*.
 - The Freighters' Guide.
 - Storms. *Birt*.
 - ✓ Philips' School Geography. *Beardman*.
 - Latitude. *Forbes*.
 - Devotional Guides. *R. Philip*.
- 1857-78. Philips Series of 20 4-Sheet Large School Room Wall Maps.
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Philips' County Atlas of England and Wales, cr. 4to.
- 1858-63. Philips' Series of 43 folio maps of the English Counties, 20 × 15 ins.
Bartholomew and Weller.
1859. Philips' Beginners' Atlas. 36 maps, 9 × 7½ ins., with Index.
Philips' Textbook of Geography. *Hughes.*
Philips' Training College Atlas, folio. *Hughes.*
- 1860-78. Philips' New Series of 1-Sheet Small School Room Wall Maps, 42 × 32 ins.
1860. Philips' Elementary School Geography. *Hughes.*
1861. Philips' Classbook of Physical Geography. *Hughes.*
Philips' Family Atlas of Physical, Classical and General Geography. 62 maps, 14 × 11 ins., with Index.
- ✓ 1862. Philips' School Atlas of Physical Geography. 36 maps, 14 × 11 ins.
Hughes.
- ✓ 1863. Philips' School Atlas of Historical Geography. 43 maps, 14 × 11 ins.
Hughes.
Philips' County Atlas of Wales, cr. 4to. *Bartholomew.*
Philips' Plan of London, 3 miles to 1 in. *Weller.*
Philips' Comprehensive Atlas. 52 maps, 14 × 11 ins., with Index.
1864. Philips' New Imperial Library Atlas, with 80 new maps, 27 × 22 ins., with Index.
Philips' New General Atlas, folio, with Index.
Geography of Coastlines and River Systems. *Lawson.*
- ✓ 1865. Philips' School Atlas for Australian Schools, demy 4to.
Philips' Small Scripture Atlas. 16 maps, 8vo.
- ✓ 1866. Philips' New School Classical Atlas. *Hughes.*
Philips' School Scripture Atlas. 12 maps, 4to. *Hughes.*
1867. Philips' Physical Atlas for Beginners. 16 maps, cr. 4to.
Philips' New Series of Home and Colonial Copybooks.
1869. Philips' New First School Atlas, cr. 4to.
Philips' Atlas for New Zealand Schools, cr. 4to.
- 1870-1. Philips' Franco-German War Maps.
1870. Philips' Select School Atlas. 36 maps, 14 × 11 ins., with Index.
Philips' New Plan of Liverpool, 6 ins. to 1 mile.
- 1872-8. Philips' Series of 4-Sheet and 2-Sheet School Room Wall Maps of the English Counties.
1872. Philips' Series of English County Geographies. *Hughes and other authors.*
Geography of the British Colonies. *Faunthorpe.*
1873. Philips' Series of Reading Books. 5 vols. *Cromwell.*
Philips' County Atlas of England and Wales, cr. 4to.
1874. Philips' New Handy General Atlas. 80 pages of cr. folio maps, with Index.
Philips' Series of Arithmetic Test Cards. *Worthington.*
1875. Euclid and Geometry. *Martin.*

LIST OF THE MORE IMPORTANT PUBLICATIONS

1875. Philips' Series of Arithmetics. *Piper*.
Students' Textbook of Music. *Taylor*.
1876. Philips' Handy County Atlas of Ireland.
Across Africa. *Cameron*.
1877. Philips' Atlas of the Countries of Europe, 4to.
Philips' Atlas of the British Colonies, 8vo.
1878. Philips' War Maps of Eastern Europe.
Plan of Paris and Suburbs, 30 × 22 ins. *Bartholomew*.
Philips' Scripture Manuals. 7 vols. *Linton*.
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1879. Philips' Series of Caxton Copybooks. 20 books.
1880. Philips' New Imperial Atlas. 80 maps, 27 × 22 ins., with Index.
Philips' Portable Globe. *Betts*.
Philips' Series of School Room Maps. *Betts*.
1881. Philips' Training College Atlas, folio. *Ravenstein*.
Wrinkles in Practical Navigation. *Lecky*.
Dues and Charges in Foreign Ports. *Urquhart*.
1882. Geography of the Counties of Ireland. *Joyce*.
Science Ladders. 6 vols. *Danvers*.
Philips' Series of Historical Readers. 4 vols.
English History. *Morgan Owen*.
1883. Philips' Series of Geographical Readers. 5 vols.
Philips' Standard Poetry Books. 6 vols.
Picturesque History of England. *Françon Williams*.
1884. Introduction to Milton and Shakespeare. 2 vols.
Standard Mental Arithmetics. *Piper*.
1885. Philips' Handy General Atlas. New and Enlarged Edition, with Index.
Philips' New 4-Sheet Plan of London, 3 miles to 1 in.
1886. Philips' 4-Sheet Map of the Maritime Provinces of Canada.
Philips' 4-Sheet School Room Wall Map of the British Empire.
Philips' Arithmetics. *Parry*.
Philips' Drawing Books. *Warmington*.
Problems in Practical Navigation. *Goodwin*.
1887. Philips' Handy Volume Atlas of the World. *Françon Williams*.
Philips' Handy Volume Atlas of the British Empire. *Françon Williams*.
Manuals of Commerce. 4 vols. *Yeats*.
Handy Book of the Stars. *Whall*.
1888. Philips' 2-Sheet Canal Map of England. *Shawe*.
Emin Pasha in Central Africa.
1889. The First Ascent of the Kasai. *Bateman*.
Travels in the Atlas. *Thomson*.
Practical Seamanship. *Todd and Whall*.
Handy Book of the Tides. *Whall*.
- 1890-91. Golden Gates of Trade. *Yeats*.

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1890. Philips' Imperial Library Atlas. New and Enlarged Edition. *Shawee*.
 The Unknown Horn of Africa. *James*.
 The Development of Africa. *Silva White*.
 Home Life on an Ostrich Farm. *Martin*.
 Applied Geography. *Scott Keltie*.
 Philips' Scripture Manuals. *Davies and Linton*.
 World's Great Explorers and Explorations. 7 vols. Edited by *Scott Keltie, Mackinder and Ravenstein*.
 Philips' Pictures of Native Life in Distant Lands.
1891. Geological Map of Vesuvius. *Lavis*.
 Delagoa Bay. *Monteiro*.
 A Girl in the Carpathians. *Dowie (Mrs. Norman)*.
1892. An Atlas of Astronomy. *Ball*.
 Handy Volume Atlas of the World. Entirely reconstructed. *Ravenstein*.
 Makers of Modern Thought. *Naismuth*.
 A Naturalist among the Headhunters. *Woodford*.
 The British Colonies. *Gresswell*.
- 1893-9. Topographical Map of England and Wales. 20 sheets, 3 miles to 1 in. *Ravenstein*.
1893. The Temple Church. *Baylis*.
 Art of Teaching and Studying Languages. *François Gouin*. Translated by *Howard Swan*.
1894. Art Guide to Europe. *Bell*.
 Philips' Systematic Atlas: Physical and Political, for Higher Schools and Private Students. 52 maps, 15 × 11 ins. Edited by *Ravenstein, Mackinder and Scott Keltie*.
 Philips' 4-Sheet Commercial Map of the World. *Bartholomew*.
 Geological Map of Western Australia. *The Agent-General for W. Australia*.
 Geology of England and Wales. *Woodward*.
 Short History of Astronomy. *Knight*.
 Korea and the Sacred White Mountain. *Cavendish*.
 Handbook of Natural History. *Margesson*.
 Ready Reference Guide to Parish Councils. *Pease and Stone*.
1895. The Castle Line Atlas of South Africa. 36 maps, 14 × 11 ins. *G. Philip*.
 Map of the Moon and Handbook. *Elger*.
 Exploration of Australia. *Calvert*.
 British Guiana and its Resources. *Tennant*.
1896. Telescopic Astronomy. *Fowler*.
 Philips' Series of Semi-Upright Copybooks.
 Circular Tablet. *Lawrence (Froebel Society)*.
 Foundations of Success. *de Brath*.
1897. Three Years in Western China. *Hosie*.
 Madagascar. *Dawson*.
 General Utility Tables. *Lecky*.

LIST OF THE MORE IMPORTANT PUBLICATIONS

- 1898-9. Brushwork Studies and Copybooks. *Yeats*.
1898. Philips' Picture Map of London. *Rhodes*.
Routes and Mineral Resources of N.W. Canada. *Dyer*.
Steamship Guide. *Rhodes*.
1899. "Daily Mail" and other Maps of the Boer War.
Overpressure. *de Brath*.
- 1900-2. System of Teaching English Reading. 6 readers, 2 teacher's books. *Dale*.
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