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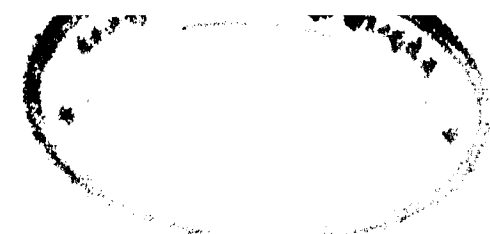
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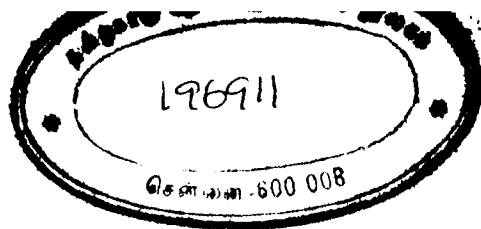
—THE JOURNAL OF—
The Madras Geographical Association

VOL. VI] JULY 1931 [NO. 2

CONTENTS

	Page
1. Presidential Address of Prof. V. Rangacharya ...	33
2. Statistical Sources for the Study of the Economic Geography of India by Mr. K. C. Ramakrishnan ...	58
3. The Fifth Annual Meeting of the Association ...	70
4. Provisional Programme of Association Tour in Mysore ...	71
5. Hints and Comments on the S. S. L. C. (C-Group) Geography Syllabus ...	72
6. Plea for Geography as an independent subject in the S. S. L. C. Scheme by Mr. V. Desika Chari, ...	76
7. Reviews ...	77
8. News and Notes ...	80
9. Books and Journals Received ...	83

SEP 1931



List of Papers read at the Second Geographical Conference held at Palghat.

1. *A Note on the Physical Geography of Malabar*: by Mr. T. N. Muthusawmi, M.A., L.T.
2. *Geology of the Palghat Gap*: by Mr. M. S. Subramanyam, B.A. (Hons.)
3. *Meteorology of Malabar*: by Mr. B. G. Narayan, B. Sc.
4. *Types of Forest Flora in Malabar*: by Mr. G. Visvanathan, B.A.
5. *Agricultural Geography of Malabar*: by Mr. V. K. Sourirajan, M.A., L.T.
6. *Field Irrigation in Malabar*: by Mr. A. Swaminatha Ayyar, B.A.
7. *Pepper in Malabar*: by Mr. M. Achyutan Nair, B.A., L.T.
8. *Some Mediaeval Notices of Malabar Pepper*: by Mr. A. Appadorai, M.A.
9. *Marketing of Malabar Produce*: by Mr. K. C. Ramakrishnan, M.A.
10. *Cottage Industries of Malabar*: by Mr. R. Suryanarayana Rao, B.A.
11. *Population of Malabar*: by Mr. K. Srinivasa Raghavan, M.A.
12. *Urban Geography of Malabar*: by Mr. R. Dann, M.A.
13. *Transport and Communications of Malabar*: by Mr. N. Subrahmanyam, M.A., L.T.
14. *Public Health of Malabar in relation to Environment*: by Major A. M. V. Hesterlow, I.M.S.
15. *Trade-centres of Malabar in Roman times*: by Mr. P. J. Thomas, M.A., D. Litt.
16. *Early European Trade-centres of Malabar*: by Mr. S. Natesan, M.A., L.T.
17. *Relation between the Tamils and Malabar at various epochs*: by Mr. Rao Saheb C. M. Ramachandra Chettiar.
18. *Some Place-Names of Malabar*: by Mr. P. Rama Pisharody.

These papers are to be printed in the October Number of the Journal (Vol. VI, No. 3); and copies of it may be had from The Secretary, The Madras Geographical Association, Gopalapuram, Cathedral Post, Madras, at Rs. 2 each.

—THE JOURNAL OF— The Madras Geographical Association

VOL. VI]

JULY 1931

[NO. 2

Presidential Address

OF

PROF. V. RANGACHARYA, M.A.

at the Second Conference of the Madras Geographical Association held at Palghat in April, 1931.

LADIES AND GENTLEMEN,

It is with great pleasure that I have responded to the invitation of the Secretary to preside over the Second Geographical Conference meeting under the auspices of the Madras Geographical Association. The honour done to me is indeed great, but, I am afraid, undeserved. It is not easy to fill the chair occupied by such a distinguished educationist as Prof. Rao Sahib T. S. Subrahmanya Aiyar who, by his large experiences as a traveller, is eminently fitted to preside over an association, one of the main objects of which should be to expand geographical knowledge by such means. I cannot lay claim to the credit of a wide traveller or even to special work in the field of geography except in so far as it has to do with the history and the social economics of our country. But even in connection with history and economics the play of geography is wide enough to necessitate a large degree of intensive studies, and there can be none who can beat me in the enthusiasm for the subject: and I hope that this, together with your sympathy, will enable me to discharge the task so kindly and, I may add, somewhat cruelly thrust upon me. My shortcomings will, I hope, be forgotten by your indulgence; and I trust that we shall carry the Conference to that success which is the desire of all of us.

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At the time when the call for my present office came I thought I could appropriately speak of the Geography of Malabar in its various aspects; for it is well-known that the object of the Conference is to make special studies of that district in which it happens to meet during a particular session. But on looking at the fine list of special papers to be read on the occasion by men who have bestowed special attention to the subjects of their treatment, I came to the conclusion that my attempt at a broad survey would be superfluous and that it would be better for me to give a sort of **history of geographical thought, research and pedagogy** in general, leaving the few remarks I might have to make to the end of each individual performance. A general survey of geographical research, though idealistic, would be a welcome variety to a collection of intensive investigations.

The earliest of the geographical studies were carried on in **Egypt and Mesopotamia**. The geographical knowledge of Egypt, Chaldea, and the Hebrew world was, however, confined to a narrow region stretching from the Persian Gulf to the African desert. They however made a beginning in cartography and astronomical geography. In Egypt a map of the Nile has been found, and the Pyramids had an astronomical origin. In Babylon tablets with maps have been found, and it is clear from them that the Babylonians regarded the earth as flat, round and circumscribed by the river Oceanus. Contemporaneous with the Egyptian and Babylonian finds is the Vedic literature. It throws light on oceanic voyages, the relations with the western Asiatic centres of civilization, in all of which the Dravidians and the people of the Sindhu civilization had an ample share. The later parts of the Vedic literature also show the existence of the idea of a United India, reflected in the Epics, side by side with extensive negotiations between the different parts of the country as well as with the outside world in regard to commodities, animals and things. The origin of the use of several commodities, the cereals, the millet, the pulses, the fruits, the methods of their cultivation, the currency, the handicrafts, etc., can in a way be traced: but there is no material which enables us to say whether there was any system of cartography, observatory, or knowledge of navigation. There is reference to the Bhuvidya in later Vedic

literature; but it is difficult to say whether it was scientific in the western sense of the term.

The next contribution to geographical material and thought was made by the **Phoenicians**. These enterprising people engaged in trade from the shores of India to Britain and did considerable service to navigation. Historians are agreed that the Phoenician connection was responsible for the prosperity of the Indian trade with the west, for the advent of the Phoenician alphabet, system of weights, currency and so on. But we are not able to say how far the influences are reciprocal; and though the influence of Phoenicia as the link between the civilizations of Asia and those of early Europe is undeniable, the exact connection between it and India is still in the realm of dogmatism and remains to be ascertained. It is quite legitimate to ask what part of the knowledge of navigation was Phoenician and what part Indian or Sindhu.

The next stage in the development of geographical achievement and thought must be attributed to the **classical peoples**. The earliest map was constructed in Greece by Hecataeus about B. C. 500 and, shortly after, Herodotus summed up the knowledge of the world as known to the **Greeks** of the 5th century B. C. The Persians had explored the Persian gulf and the Indus basin and the Indian coasts earlier, but their position was successfully assailed by the Greeks. In the centuries which followed Herodotus the Greek map covered all the land from the Ganges to the Atlantic. Alexander's invasion was followed by a fairly respectable quantity of scientific literature about the Geography of India, and the West. By connecting India with Western Asia, Egypt and Europe on the one hand, and Central Asia and China on the other, the Greeks expanded the field of Indian knowledge and achievement. Besides influencing trade, religion, arts, literature, etc., the Greek epoch witnessed Indian expansion into Central Asia and China. Indian travellers, scholars and settlers became familiar in further Asia and China; but there is no geographical literature from Indians themselves to show this. On the other hand Eratosthenes, who lived about B. C. 240, wrote a systematic Geography and further mathematically measured the earth for the first time.

Next to the Greeks the Romans have to be mentioned. Their contribution included the geography of many countries; for they were constantly engaged in conquest, settlement, commerce, and trade, particularly urban. They produced maps and worked in Economic Geography. They got in full, however, the services of Greek savants who have left good *Peripli* or guide-books of the coasts as well as maps. The most famous of these are Strabo (B. C. 20) and Ptolemy of Alexandria (A. D. 150). Strabo, says F. L. Holtz, "wrote" great work on the Geography of his time. It was a philosophical, scientific, systematic treatise, divided into mathematical, physical and political branches, thus setting a standard that has been followed to this day. He appreciated the effect of the environment on the people, but used Geography as an aid to history. He has been called the father of Geography." The same scholar thus summarises Ptolemy's place. "But the most influential figure in Ancient Geography was Claudius Ptolomaeas (Ptolemy), a Greek of Alexandria, 150 A.D. He believed in a spherical earth, but made it the centre of the universe, an idea that was destined to prevail for 1500 years. He wrote a great work on Mathematical Geography; and in the famous library at Alexandria he made a critical study of the geographical data acquired up to that time and prepared his great map of the world. He used meridians and parallels, fixing the prime meridian at the Canary Islands, then the farthest west, where it was kept till the eighteenth century. He estimated, but with error, the latitude and longitude of places, and placed them upon the map. He over-estimated the extent of Eurasia, assuming it to be from west to east larger by more than 75 degrees than it really is thus leaving the distance west from Europe to China too small."

Ptolemy throws much light on the trade between India and the west as well as on Indian Geography. It is not possible to go into details here; but it may be mentioned that his map of the Indian coast is very inaccurate. He failed to understand the peninsular character of it and described it as more or less similar to the south coast of England. The information he gives about the

* Principles and Methods of teaching Geography. New York, 1919, p. 310—1.

ports, the inland places, the course and character of trade, etc., is very valuable.

The same is the case with regard to Pliny and the author of the *Periplus* of the Erythrean sea. While their cartography is inaccurate they give much information about the commercial geography of the time. The description of Ceylon, Burma and Sumatra is met with for the first time in these; but it is very inaccurate in regard to size and nomenclature though not in regard to the importance and course of trade.

Throughout this period the geographical data were fast accumulating in India. The Mauryan empire and its services to religion, arts and trade promoted the geographical conception of Indian unity. Chapters in the Epics, the Puranas and Sastraic treatises like Manu came to be devoted to geographical divisions. These may be divided into two types—the mythical and the real. The myths about cosmology and cosmography were very extensive and on account of their principal character of no scientific value. But the passages dealing with the political divisions, the peoples, the sacred waters or places, the migrations of peoples are all of great value. Again it was during this period that Indian culture spread to Central Asia, Chinese Turkistan, China, Japan, Indo-China, Malaya, and the East Indies. Indian merchants colonised several regions in the coasts or hinterlands of these countries and Indian religions, thought and art penetrated them. But while we are able to gather much geographical data we have no materials which enable us to say that there was in the India of this period a scientific conception of Geography as among the classical writers. Even in pedagogy we are able to say something of what was done in the west during this period. We know that Geography was inextricably mixed with History, Astronomy and Mathematics; but there was the use of the maps by young scholars and there was some importance attached to Geography as a subject of study. We cannot say that there was any such attempt in India.

We have thus far dealt with geographical thought and study in the ancient world. Passing on to the **Middle Ages** when the peoples of the west were entirely under the control of priests and monks and learning was entirely religious, mythical, fanciful

and imaginative the scientific aspect of Geography was naturally forgotten and the traditional interpretations, according to which the earth was flat and the seas girdling it were full of monsters and terrors, were the order of the day. The monks did not only prefer mythology to Strabo and Ptolemy but constructed maps of their own which had more religion and fancy in them than the reality. Jerusalem was made the invariable centre and the maps noted only religious places. Geography was taught as part of astronomy, history, geometrical mathematics or religion; but the use of maps and globes, characterised by the limitations above-mentioned, were in vogue.

It is remarkable to note that it was just in this period of the European dark ages that **geographical knowledge greatly advanced in India**. Astronomers like Aryabhatta, Brahmagupta, and Bhaskaracharya considerably developed the problems of astronomy, the theory of the earth's extent, the theory of latitude and longitude, etc. Varahamihira wrote his Encyclopaedia. The Sthalapuranas dealt with local geographies though more from the religious and mythical point of view. Imperialistic attempts, migrations and settlements unified, though in a vague manner, the conception of a United India, though not always with success. Intercourse with foreign countries was busily kept up. Pilgrims from China to India and from India to China were very common. A greater India developed Indian culture from Khotan to the island of Bali and made India great as the inspirer of the religion, art and trade of the whole East. Extensive voyages and explorations by even Brahmans were common in the eastern seas and the courses of the winds and currents were known and availed of. The connection with the west, north and east was maintained and extensive colonization was resorted to. The materials connected with Indian settlements in Burma, Cambodia, Cochin-China, Sumatra, Java, Bali, Central Asia and Turkistan have been discovered in plenty by scholars of France, Holland, England and Germany; and they indicate that in exploration, in colonisation, in trade, in arts and crafts the India of the Gupta, Harsha and Rajput periods was far in advance of the west. But all these achievements were not consciously understood by the educationists; and there seems to have been no attempt to teach anything like Geography in the educational system. The materials

for political, commercial, colonial, economic and other aspects of Geography were available in plenty; but there was no idea of utilizing them for educational purposes.

A very important change from this state of things was introduced both in Europe and India by **Islam**. **The Saracens** took up the thread of classical science and kept up the torch of learning. They went back to Strabo and Ptolemy and they developed geographical knowledge by their own conquests, navigations and travels. Even the crusades contributed to the growth of knowledge and trade. The Moslems captured the trade of the Indian and Mediterranean seas and by their conquests of the whole of West Asia, North Africa and part of Europe introduced a uniform culture. They conquered India and connected her with the West and introduced many revolutions in trade, wares and luxuries, society, arts and national life. They wrote systematic geographies and a host of travellers visited India from the countries of the West and have left accounts of her industries and trade.

One of the most substantial results of the close approach between the East and West on account of Moslem influence was the **exchange of embassies and agents**, the enterprising **pilgrimage** of monks and the daring **travel** of travellers. Monks, merchants and men of means used to go on extensive travels. Marco Polo the Venetian ambassador to China is one of the greatest of these. Ibn Batuta the Moor is another illustrious figure. The literature of these travellers is very extensive and their services to progress and the spread of knowledge were very great.

The trade between the West and the East which came into existence as the result of this intercourse was both by land and sea. The Chinese and the Arabs met for the spices of the East Indies and the silks in Malacca. The Arabs sailed according to the monsoons and controlled the marine trade of the Indian ocean, the Persian Gulf and the Red Sea. Indian silks, cotton, gems and gold, the perfumes and spices of India and the East which were needed by the people of the West to season and appetise their salt meat and salt fish, the dye-stuffs and medicines of Arabia—all these figured in this oceanic trade. There was land trade also from China through Mongolia and Turkistan to the Caspian and

Black Seas; another from India through Mesopotamia and Damascus to the Mediterranean ports. Here the trade was taken over by the Italian cities of Venice and Genoa. It was this extensive trade that enabled the Moslems to contribute so largely to geographical thought.

We now come to **the Renaissance** which began after the fall of Constantinople to the Turks. The rivalry for the eastern trade then began on a large scale and gave rise to the search for the routes to India. **The age of discoveries and explorations** began. It is unnecessary to describe the history of this. It is enough to state that the Portuguese greatness was founded by the services of Prince Henry in the art of navigation, his defiance of the terrible legends of the middle ages, and shipbuilding, mariner's compass, the astrolabe for determining latitude, and all other requisites of navigation. The mystery of Africa was solved, India was reached, and America was discovered in 1492 just before this. The sphericity of the earth was fully understood. The first globe was constructed by Behaim. The German Waldseemüller constructed the first map in 1507 fixing the name America to the new world. Similar maps are seen in that of Contarini (1506), and Strasburg map of Ptolemy's world chart (1513). With their help Megellan circumnavigated the Globe between 1519 and 1522 and proved the size of Eurasia and the earth, the configuration of America, etc. In 1542 the Spanish discovered Australia, though its insular character was to be known only after two centuries. Several explorers undertook the voyage of the North-West. All parts of the world were thus discovered. Meantime Copernicus propounded in 1543 the helio-centric theory, which replaced Ptolemy's earlier notions. Richard Hakluyt, the elder was an expert in the botany of his day and saw in the New World a source of raw materials and a field for agricultural and commercial expansion. He made valuable contribution of geographical literature by his translations. He sifted the documents which he amassed in plenty, and edited them critically, thus providing the data for the Elizabethan Geography. His papers were left to Samuel Purchas who was an equally indefatigable reader and publisher. Eden, Chancellor, Hakluyt and Purchas stand at the forefront of the development of the science in Tudor times. The Geographical Journal published recently a

valuable note on an earlier geographer Roger Barlow who lived in the time of Henry VIII and who throws light on the explorations of the N. W. Passage and South America.

One great point to be noted is that from this time India, while being an object of temptation for western nations, herself fails to take part in explorations, voyages, etc. It is from this time that the era of Indian helplessness begins. Numerous travellers visited India in the 16th and 17th centuries and threw light on her crafts, industries and trade. But she is herself helpless. Lack of naval power is one of these reasons. There can be no greater contrast in history than the enterprise of Indians in the pre-Musalman times and their lack of initiative in Mahomedan and post-Mahomedan times.

In the 17th and 18th centuries, the discovery and study of Geography made great strides in the West. It was becoming more and more modern and scientific. Colonisation, commerce, agricultural improvements, industrial improvements, and mining entered new phases. Several treatises on Economic Geography came to appear. By 1,600 text-books appeared in German schools. The Dutchman Varenus wrote the first general Physical Geography about 1630. Newton discovered the Law of Gravity and Orbital Motion. Comenius developed Geographical Pedagogy by use of pictures and Francke made its position firm in the school curriculum. The Russian commander Behring proved the separation of Asia from North America. The British Museum was established in 1753. Captain Cook discovered Australia, New Zealand and Pacific Islands, and was killed by the Hawaiians in 1776. The Royal Society at Edinburgh was established in 1783. Rousseau agitated for Home Geography in schools. Basedow wrote the first illustrated text. Herder wrote on human geography. Linnæus sent naturalists to various continents to study the flora and fauna. Major James Rennell, whose career is one of great romance and heroism, introduced a new epoch in surveying, and studied classical geography and the currents of the Atlantic. Francis Baily was elaborating the astronomical mathematics of geography. Naval officers who were making the British Empire were developing hydrographic surveys. The Ordnance Survey was making similar attempt on land. Arrowsmith made a name in the field of the construction of maps. Kant and Laplace developed

the nebular theory of the origin of the earth. The Royal Horticultural Society began its activities in 1804 and was followed by the formation of the Geological Society in 1807, Royal Astronomical Society in 1820 and the Royal Asiatic Society in 1823. In 1821 was established the earliest Geographical Society in existence the Societe de Geographie of Paris; and in 1828 was founded by Humboldt and Karl Ritter the Gesellschaft fur Erdkunde in Berlin. Ritter wrote on the Philosophy of Geography, its relation to the nature and history of man. Humboldt, the naturalist, correlated Geography with natural science as Ritter did with history.

The immediate result of the establishment of the Paris and Berlin Societies was an attempt to organize a similar institution in England by Captain Smyth, Major Rennell and others; and the result was the great institution known as the Royal Geographical Society, founded in 1830 in the time of William IV and named after him. Owing to the fact that successive sovereigns have been the patrons (the Prince of Wales being the Vicepatron) during a century, it has grown into a body of 6000 Fellows, with extensive accommodation in the form of Council Room, Lecture Hall, Map Room, Library, and so on. Its library has been built at the cost of 50,000£ and it possesses the finest unofficial collection of Maps and Charts in England. It set before itself the six functions of printing interesting and useful facts and discoveries; accumulating a library and a collection of maps and charts; collecting instruments likely to be valuable to the traveller with which he could practise; preparing instructions for extending financial help to travellers; corresponding with foreign geographers and intelligent British residents in the various parts of the Empire; and communicating with kindred societies. In every one of these fields it has done wonderful work; indeed it has extended its activities far beyond the promotion of travel and exploration alone.

The great feature of the society is that it has commanded the help of Government from the very beginning. The Director of the Ordnance Survey, the Lord Admiral and principal naval characters as well as most of the members of the Cabinet have been in it. The Secretary of the Admiralty, Sir John Barrow, became its soul and placed all the resources of his position in the

furtherance of its objects, particularly the explorations of the Arctic Seas and Africa. Leading men in every line, who had anything to do with Geography, were members in it from the very beginning; statesmen, travellers, soldiers, sailors, officers of the army and navy placed their services at its disposal. Everest, after whom the highest peak in the Himalayas has been named, was a member.

It is these facilities that have enabled the Society to subvent the explorers of the Niger, the Arctic, the Antarctic and elsewhere. It financed Alexander's explorations in South Africa, Schomburg's in British Guiana and Ainworth's in Kurdistan. It pushed on similar work in Australia and it promoted the hydrographical work of Speke, Livingstone, Grant, Burton, Baker and Stanley in the regions of the Great Nile, the great lakes and forests of Central Africa. Its celebrated journal has run into 75 volumes.

Similarly every country has established institutions which have made history in the field. Mexico has a geographical society which was established in 1839 and which has published bulletins for 90 years. St. Petersburg followed in 1845; New York in 1852; Vienna in 1856; Rome in 1857; Amsterdam in 1873; Cairo in 1875; Spain in 1876; Stockholm 1877; Tokyo 1879; Australia in 1885; and so on. Perhaps the biggest of the organisations established for geographic research of all types is the National Geographic Society, Washington. Started in 1888 it has got more than 1,200,000 members who belong to every country in the world. It forms the largest educational society in the world and is managed by a Board consisting of scientists, generals, admirals, ambassadors, economic experts, explorers, heads of Departments, and others of supreme qualifications and achievements. It has published 57 volumes of the sumptuous National Geographic Magazine the pages of which contain some of the most thrilling, elevating and inspiring accounts of the achievements in the field of geographical exploration. The Society has financed great undertakings like the investigations of the Alaskan volcanoes, the Peru expeditions for investigating the Inca civilization, Admiral Peary's memorable expedition to the North Pole, Commander Byrd's Antarctic expedition, the study of the prehistoric culture of New Mexico, the expedition to the

Yunnan province of China for photographic and botanical studies, the maintenance of a station in South-West Africa for the study of solar radiation, and so on.

An important factor in the modern organization for research work in geography is the International Geographical Congress. For arrangement in connection with it there is in England a body called the National Committee of Geography. It consists of representatives of various geographical bodies and charged with the duty of looking after the needs and necessities of any geographical Congress which may be held in the country. Then again there is an International Geographical Union to which the National Committee is a member. Closely attached to the International Union is a Research Council. Similar institutions are at work in other countries.

In some countries the bodies constituted for the study of geographical conditions are not private, but State institutions or departments. This is the case in the less advanced countries, and India is one of them. Geographical work in India has been done by the Survey of India, and by several other special departments which have produced voluminous publications. The Geological Survey, for example, has published more than 53 volumes of *Memoirs*; 72 volumes of *Records*; and several special publications. The same department has published 16 'sections' of Palaeontological studies each of which consists of several volumes under the title 'Old Series' and 10 volumes of New Series which in reality cover more than 10 volumes. These are veritable mines of information on pre-history, stratigraphy, fauna and flora of the country. Similarly the Meteorological Survey has published administration reports, memoirs on special topics, observatory bulletins, magnetical and seismological observations, weather, charts, scientific notes and 25 volumes of *Memoirs*. The Geological Survey is equally elaborate and besides numerous special books, it has published the journal *Records of the Indian Museum* which have run to 32 volumes. The scientific work done by the Engineering Services, the Irrigation Department, the Forests the Army, etc., is of incalculable value. The Government of India in short does all the work done by the learned societies elsewhere. It has encouraged explorations connected with India.

surveys and topographical investigations to a wonderful extent, It has done incalculable service for Historical Geography.

An excellent example of the work done by an expert of the Government of India is that of Major Rennell the first eminent British geographer sailor, explorer, and surveyer. He came to Madras in 1760 took part in the engagements of the British navy against Pondichery, surveyed the harbour of Trincomali, investigated the possibility of dredging for navigation passage through Adam's Bridge. After six years' private service he became he surveyer in the East India Company's navy. He surveyed the Nicobars, Malacca, N. W. Borneo and then in the time of Sir Robert Park, a Devonshire man like himself, the coast of Madras. Entering the service of Vansittart, Governor of Bengal who gave him a commission in the Royal Engineers for making a survey of Bengal, he made observations about the Ganges, the Himalaya, etc. Lord Clive made him surveyer-general. Rennell married in the Thackeray family. He collected and prepared Bengal Atlas. He retired in 1778, and then prepared his Map and Memoir of Hindustan and several works on W. Asia, Africa and Oceanography. He was a great authority on the last subject.

Another illustrious figure in the science of surveying, who owed his opportunities to his military connection, was Col. Sir Thomas Hungerford Holdich. Coming to India in 1865 as the holder of a Commission in the Royal Corps of Engineers, he was placed in the Survey Department almost immediately after his arrival. During the first twelve years of his service he was Surveyer in the Bhutan Field Force (1865-66), Rajputana, Abyssinia (1867), Central Asia, and Vizagapatam (1877). In 1879 he came to be associated with the Afghan Field Force and from this time till his retirement in 1898, he was in close touch with all the problems connected with the lands and peoples of the North-west Frontier and beyond. He did not only carry out extensive geographical and topographical explorations but trained men, English and Indian, in triangulation, surveying and other processes. These were sent by him even without the knowledge of the political officers into the forbidden lands; and in this way Afghanistan, Baluchistan, the Persian coast, Makran, Khurram valley, the Kunar valley, Chitral, Pamirs, (Great and Little), were all clearly and thoroughly mapped out. These experiences enabled

him to take part in all the boundary commissions of the period. After his retirement Holdich, who was honoured by Government and the Royal Geographical Society with which he was connected in various capacities for more than twenty years, published several books of authority, like the *Indian Borderland* (1901), *India* (1902), *Tibet* (1906), *Gates of India* (1909), and *Political Frontiers and Boundary-making* (1918). The experiences which Holdich gained in the Indian borderlands enabled him to figure with great distinction in the arbitrament of the Chile-Argentine dispute. Holdich was one of the founders of the Himalayan Club just before his death in 1929. His career illustrates the possibilities of political service by geographers of training and opportunity.

Another instance of the value rendered by political connection with geographical science of which India is so full, is afforded by the late Lt. Col. G. Henderson, Professor of Surgery at Lahore University. He accompanied the political mission of Sir Douglas Forsyth to Yarkand in 1870 and in the course of this expedition made discoveries of new species of birds and plants. Appointed on his return as the Director of Royal Botanical gardens and Professor of Botany at Calcutta University, he rendered great service to agriculture and arboriculture, discovered the species of eucalyptus best suited to the country and made experiment in the use of iodine as an antiseptic. The career of Henderson illustrates the close connection between botany and public health and he could not have done his great service but for the opportunity he derived from acquaintance with the countries of Further Asia.

To take another type, among the explorers of the Himalayas, Sir Francis Younghusband deserves honourable mention. More than 43 years ago, he was a subaltern in a regiment serving in India and happened to make a journey from Pekin across Mongolia and Turkistan and the Himalayas to India. The journey covered a distance of 3,600 miles and resulted in the discovery of a new range of mountain, several peaks above 20,000 feet in height, and a new pass across the Himalaya. More than the information he gave was the picturesque description of the beauties of the climate and scenery, an aspect of Geography upon which he has as much

insisted as upon the construction of maps. He is not for a mere measurement, but for a picture, colour and life; not for the mere bone but flesh and blood. He carried out his views in subsequent years by his explorations of the Pamirs, the Hunza, Chitral, Tibet, etc. More than anybody else he has done to popularise the glories of the Himalayas. He co-operated with George Curzon, afterwards Lord Curzon, in the travels in the North-west and the Pamirs. The greatest service of Sir Francis was the endeavour he made, while he was the President of the Royal Geographical Society between 1919 and 1922, to conquer Mount Everest. Many men believed that the attempt was likely to be more sensational than scientific. But Younghusband won over the sceptics. He argued that the conquest of the Everest was like the conquest of the Poles; that "in the Himalayas there is a vast region between the altitudes of 20,000 feet and 29,000 feet above sea-level awaiting exploration and it includes 75 peaks of 25,000 feet and over, not one of which has been climbed," and that the climbing of the Mt. Everest was interesting from every conceivable point of view. The Royal Geographical Society took the matter on hand, obtained the co-operation of the Alpine Club, collected funds, organized an Everest Committee and had the Everest Expedition conducted.

The Himalayan club soon amalgamated with the Mountain Club of India and arranged for the publication of a Journal under the editorship of Major Kenneth Mason, the veteran editor of the records of the Survey of India. The first issue appeared in April 1929, and the Journal gives not only the accounts of the explorations in the different parts of the Himalayas but gives valuable information by its publication about the routes of travel and other things absolutely necessary for those engaged in the actual work of research.

The Karakorum mountains have been explored by many eminent men. In 1848 Dr. Thompson was the first Englishman to reach it; and Hayward did so in 1869. The system was mapped by Godwin-Austen in 1883. After it, the range has been surveyed from various standpoints by Ryder, Wood, Kishen Singh, Sir Martin Conway—author of the *Climbing of the Himalayas* (London 1894); Oldham, Middlemiss, Hayden, Sir Sidney Burrard (author of *Sketch of the Geography and Geology of the*

Himalaya Mountains, 1909), Major Mason, Younghusband (1887-9), Cockerill and Conway (1891), Abruzzi, De Filippi (1909), Workans and Grant Peterkin (1913), De Filippi and Wood (1914), Maj. Kenneth Mason (1926); Wood (Explorations in E. Karakoram and Upper Yarkand valley, Survey of India (1922), Arved Schutz (Pamir, Hamburg 1917), C. J. Morris (1928); Sir Aurel Stein (author of Innermost Asia, Serindia, Alexander's Track to the Indus) Dr. Visser (1926) and Mrs. Visser (a great botanist and naturalist), accompanied by the Surveyer Afraz Gul Khan and others. The range has been studied from the geological, glacial, topographical and other standpoints. One result of the explorations has been a controversy among scholars as to the necessity of changing the name of certain parts in the maps, some being for the old system of calling the ranges K1, K2, etc., while others advocate different names.

Thanks to the researches of these persons the pedagogy of Geography made splendid advance, it came to be regarded as a subject of first-rate importance for educational purposes, as not only a science with aims, thought and methods of its own, but as a summation of all sciences; not as an isolated subject, but a subject dealing rationally on the bases of the principles of causality and co-ordination with human life in all aspects; not a subject for memory alone but a philosophic science, basing itself on the data gathered by other sciences—natural, inorganic, organic and human, but explaining why men are where they are, why they live in a particular manner, why they have certain characteristics, why they are rich or poor, why they are politically great or otherwise, why they engage in trade or not, why they are great in intellectual achievements or not, why they are migratory or stationary, how the physical features, climate, soil, the sea, and other factors of environment influence them in all their activities and make them great or small, happy or unhappy, rich or poor, independent or helpless, agricultural or industrial and commercial—in short, what they are and how they can better themselves. As the science of human progress it came to be closely associated with Biology, Ethnology, Anthropology, Zoology, Economics, Politics, Sociology, History, Mathematics, Physics, Chemistry—in fact, all other sciences. Physical Geography, or Geophysics, as it has also been called, for instance, came to include the studies of the

complicated factors of the atmosphere, in its static and dynamic aspects—the distribution of the pressure, temperature, climatology the solar radiation and distribution over the earth, the transmission of radiation through air and sky, dynamical meteorology, the motion and general circulation of the wind, cyclones, weather-fore, casting, tidal phenomena, optical phenomena like refraction, reflection, the rainbow, halo, etc. Then, again, Geophysics included the extensive subject of hydrosphere or oceanography dealing with the form of the oceans, their configuration, their depths and surfaces, their temperature and salinity, their tides and currents, their wealth in plant and animal life,—in other words, marine hydrology, hydrography, biology and zoology. These aspects have been pursued by numerous scientific expeditions made to all parts of the world with the aid of highly developed technical instruments like the echo-sounding apparatus, the wire-surrounding apparatus, etc. Geophysics also includes the numerous subjects connected with the study of what has been known as the Lithosphere, namely, the elevation and subsidence of lands, the shore-lines, denudation, deposition, desiccation, etc.

Then again an important branch of Geography is the political. How far political history or environment has shaped the Geographic or administrative areas, the relation between this and natural divisions, the influence of this on human progress in settlement, development and other respects,—are all most fascinating problems. It is easy to see that it must be of a singular value to India.

Another branch is Economic Geography, comprising the study of the influence of the physical features on the economic resources, settlement, migration, lines of communication, economics of particular industries, agricultural development and methods of land utilisation; ecology (that is the inter-relation of the different forms of faunal and floral life inhabiting a given area). Each country has come to be divided into natural regions and sub-regions with clear demarcations of geology, physiography, climate and rainfall, vegetation, industrial distribution, etc. The story of the rivers and places on their banks with their historical interest, the history of their irrigation and navigation, the story of their control by bridges, etc., have become objects of close study. Similarly mountains, plains, forests, lakes and other features have

come to be studied in the regional geographies with the aid of maps, diagrams, graphs and other instruments. In Economic Geography came to be included also the study of resources, population problems, public health, birth-rate and death-rate, their causes and effects, agriculture, industries, economic measures like the co-operative movement, consolidation of holdings, housing and welfare schemes, maternity schemes, etc. A very important aspect of it is commercial geography.

Then again an important part of Geography came to be Cartography. Its fascinating history, its technique, the methods of surveying and constructing maps have given rise to extensive literature.

Then again there is Human Geography consisting of Anthropology, Ethnology, Ethnography, Anthro-geography dealing with the kinds and classification of races, their distribution, the influence of geographical environment on life, art, society, settlement, migration, the growth of towns, and a hundred other problems.

Then again there is Historical Geography comprising stratigraphy, glacial history, the growth of colonies, frontiers, languages, geographical names and their fascinating variations, history of commodities, etc.

The immediate result of the development of the scope and thought of Geography in these lines was the desire on the part of educationists to provide for it in adequate manner in their schools, colleges and Universities. The need was first felt and ventilated in Germany. Here the endeavours of the naturalist Humboldt and the philosophic writer Ritter resulted in the founding of a School of German Geography which has won distinction ever since. There are now in Germany 23 Universities, each of which has a Geography Professor. The Department of Geography in the University of Berlin forms part of the Philosophical Faculty and includes the subjects of colonial geography, overseas-geography, cartography, geographical instruments, land-surveying, oceanography, political science and historical Geography. The University has a Geography library of 20,000 volumes and 40,000 maps, besides subscribing to 145 current publications. The Institute and Museum of Oceanography has an independent library of

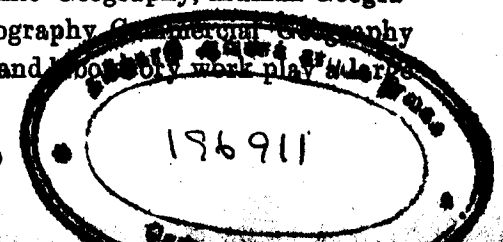
15,000 volumes, 10,000 maps, etc. The same is the case with regard to the department of Political Science and Historical Geography.

The example of Humboldt and Ritter was imitated by the French Geographers Reclus and Vidal de La Blache and the French School of Geography came to figure in her 16 Universities. The University of Paris has special staff, lecture rooms and amphitheatres, a Library of 20,000 volumes, 40,000 topographical sheets for Professors and advanced students, 600 relief models, 5,000 photographs, a studio for photographic work, another for map-making, and so on. The course comprises all aspects of the subject - Geology, Cartography, Oceanography, Economic Geography, Colonial Geography, etc. The Geographical Institute publishes an annual Geographical Bibliography. It is unnecessary to describe the work done in other Universities of France. But it may be pointed out that some Universities specialise in some fields. For example, at Grenoble Alpine studies are specialised, at Bordeaux Spanish studies. The French University system is comprehensive and even the University of Algiers has done much for the science.

In Italy, there is provision for Geography in all her 12 Universities; and her Professors have done a great deal in the different aspects of geographical research. In the Spanish Universities political and descriptive geography is attached to the Faculty of Philosophy and Letters, while Cosmography and Geophysics are attached to the Department of Science. The Swedish Universities are manned, so far as Geography is concerned, by scholars like Prof. G. Anderson, the authority on Australian Economics; Dr. Sten de Geet, the Geologist and student of the problem of population; and others. In Norway a great work has been done for the subject by the late Dr. Nansen, Professor of Oceanography at the University of Oslo. Similarly, the seven Universities of Switzerland and the three Universities of Austria have provided staffs for handling the subject.

The American Universities have attached great importance to Physiography, Geology, Economic Geography, Human Geography, Regional Geography, Oceanography, Commercial Geography, Frontier Study, etc. Lectures and laboratory work play a large

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part in the courses. The University of Illinois specialises in Cartography. It has got a geographical museum and a splendid collection of maps illustrative of topography, geological surveys, contours, rainfall, vegetation etc., and relief maps and magic lanterns are also extensively specialised in. In the University of Chicago a scholar could become a Master of Arts or Doctor of Philosophy in Geography and there is an extensive staff dealing with an elaborate course.

The provision of teaching Geography made less progress in England than in continental countries. A change was introduced in the time of Sir Richard Strachey and Mr. Galton who instituted, in the name of the Royal Geographical Society, a medal for school boys. At the same time Dr. Keltie collected information from foreign Schools and Universities. The Council of the Geographical Society then addressed the older Universities promising practical and financial support for creating schools for Geographical studies. The result was the creation of the post of a Lecturer in Oxford in the time of Chancellor Jowett, and the grant of degrees and diplomas on the subject. The Oxford school has become famous under Herbertson and others. Besides organizing the teaching of the subject, the University has undertaken such worthy and ambitious tasks as the expeditions to the Arctic regions for the study of the distribution of life, and four expeditions to Greenland, Spitzbergen, etc. for biological and other studies. In Cambridge Geography has the status of a very important department and is prescribed as one of the subjects for the B.A. as well as the Tripos. The courses, conducted by an extensive staff of experts, include every aspect of geographical studies,—physical, historical, political, economic, commercial, human, cartographical, ethnological, anthropological, and so on, both from the general and local standpoints. The course for the Tripos is very elaborate and provides for advanced research in all lines. In Physical Geography, for example, all aspects of the atmosphere, hydrosphere and lithosphere are studied. In cartography not only scientific knowledge but actual field work is expected. An advanced knowledge of geographical conceptions, explorations and discoveries is expected. Similarly, the science of anthropo-geography, regional geography, geodetic and trigonometrical surveying, geomorphology, the lithosphere,

Oceanography, climatology, historical, political, commercial and economic geographies are expected to be examined in Geographical Tripos.

The importance of Geography was sufficiently realised not only to be included in the Civil Service Examination, but given also a special position with Engineering to carry 400 marks out of the total of 1000 marks for the optional subjects, while all other subjects carry either 100 or 200 marks.

The University of London has provided for the Degree in Geography, and included it for the honours and special diplomas. The University of Edinburgh, has owing to the influence chiefly of Prof. Geddes, included it as a subject for both Honours and Pass Degree. The same is the case with Aberdeen, Glasgow, Liverpool, Manchester and other Universities. Everywhere sufficient staff has been provided, sufficient facilities for practical work given and the subject given an honourable status.

The example of Britain has been followed with credit in the Colonies. South Africa has included Geography in the Faculty of Science and combined it with Economics or History for the Degree of Bachelor or Master and with other sciences for the Degree in Science. The same is the case with the University of Sydney in Australia. The University of New Zealand has provided, in particular, for some of the technical subjects not provided elsewhere and has attached importance to the higher geographical work of research and technique in the different lines already enumerated.

Such is the history of the provision made for the study of Geography in the different parts of the world. The place of the subject in India alone has been, and is, very poor. In the earlier days of the century Geography was included in the school courses alone and a limited part of it, Physiography, was chosen as one of the alternative optional subjects in the First Examination in Arts. Not only was the subject given a minor place, but the teaching was very crude; and it was made unpopular by a misapprehension of its object, scope and value. It was regarded only as a catalogue of names of places, rivers, etc., and purely mechanical details were insisted on without any idea of cause and effect, or of the human element therein which makes it the most fascinating of subjects. In 1911 there was a change for the worse even in

this. Just at the time when England was, in a tardy manner, organizing Geography courses in Universities, Madras gave up even the little Geography it had hitherto provided for. It was given a very minor place in the School Final Scheme and Physiography even though an alternative to Physiology, was abolished in the College classes.

It was to remove this tragedy that the Madras Geographical Association was started in 1926. It was started for the objects of promoting geographical knowledge, securing the subject its proper place in the High School, the College and University, improving the methods of teaching and founding a School of Geography particularly for studying South India from various standpoints. It laid down before itself the following means or programmes—the holding of conferences, publication of periodicals and bulletins, the preparation of Geography text-books in the vernaculars, the formation of a central library of geographical literature with collections of maps, charts, plans, models, slides and instruments, and the circulation of books amongst the members. The Association has done much work in most though not all these fields. It has successfully moved the obstacles in regard to the place of the subject in the High School and Collegiate courses and secured a place for it in the Intermediate and Diploma courses. It has been publishing a valuable journal in which the articles are of great value from all possible standpoints, and shows much enthusiasm of scholars and various departmental officers. But it has still to constitute a library, collect instruments and do the other things which it has set before itself. For achieving all this, proper financial support is necessary and this is possible only with the sympathy of government, University and managements. The activities of the government must be made more popular and national. We must agitate for the correlation of the work of government and the educational authorities. Most of the information is now buried in the official volumes. How to bring these within the purview of schools is a problem.

Secondly, the Association has not provided for the highest activities. Nothing is so inspiring as actual achievement. One absolutely necessary thing for the success of geographical research is the appeal to the national interest. The history of

the Royal Geographical and other societies of the West shows that the enthusiasm of the people cannot be enlisted on behalf of geographical research unless there is the appeal to the national passion for hero-worship, the exploitation of that respect, sentimental affection and grateful admiration which the mob mind is always prepared to bestow on men who have defied death, explored distant oceans amidst untold difficulties and done wonderful exploits for the addition of the nation's honour and glory without undue vulgarization. The support which has been given for the Arctic and other explorations has been due to this passion for hero-worship. In India this has been absolutely wanting and this is the reason why the achievement is so barren in spite of actual output. It is not Indian. It is our bounden duty to make it Indian.

The patronage of some explorations was due to philanthropic impulses as much as to the desire for knowledge. The career of Livingstone in the equatorial regions of Africa was inspired by his missionary spirit and his crusade against slavery; and the labours of this Scotchman so touched the popular imagination that they came forward to help. A similar thing must be done in the case of India. The presence of millions of Indians in other countries and the consequent problems must give the opportunities for Indian contribution.

Another way in which national pride is to be inculcated is through the field of historical geography. The discoveries of scholars are sometimes startlingly interesting to India. Let me give a few examples. Many discoveries of absorbing interest have been made even in distant Rhodesia about prehistoric tribes, prehistoric metallurgy and mining, and various other things. Some scholars have not hesitated to connect this prehistoric civilization with the Indian. It would be a very good thing for instance if a single Indian who lives there and a single Indian who goes there in connection with the solution of an economic problem or political trouble adds to it the contribution of the discoveries made there—discoveries of immense interest to the history of Indian culture and Indian history more than to the history and culture of any other country. And yet I have not seen a single man coming forward to do so. The German scholar has suggested it. It has provoked no curiosity in the Indian mind. It has not made any

millionaire come forward with financial offer for the investigation. The very feeling is absent in India. No other country in the world would be so passive and indifferent under similar circumstances.

Then again take the connection between the Sindh and the Egyptian and Mesopotamian civilizations. Ever since the discoveries of French scholars at Susa, of the Anam explorations of the Pumpally expedition, Wolley's discoveries of Sumerian culture at Ur and of Dikshit's, and Sahani's discoveries at Harappa and Mohenja-daro, opinions have been expressed that the civilization of these countries were connected and synchronous and lot of controversy has arisen as to the origin of each. All western countries are spending thousands of rupees every year to study the problems and some have expressed themselves this way and some that. I cannot name a single Indian who had devoted himself to the task, who had tried to be on the spot for excavation, explorations, and ethnological studies with a view to the elucidation of the old culture. And yet opportunities have not been wanting. More Indians have visited the country than Europeans or Americans. Thousands have helped the British soldier to reduce the country. But not a single explorer has come. His work has been taken advantage of by scholars from every other country. In his suggestive work *The Most Ancient East, the Oriental Prelude to European Prehistory*, Mr. V. G. Childe (London, Kegan Paul 1928) makes a very illuminating study of these, and he shows that the connection of India with the other two civilizations cannot be ignored. He seems to place the Sumerian culture of India about 3,000 B. C. at the latest and the Dynastic history of Egypt at an earlier period. How far is this justifiable in the light of the materials we have got? Again how far is this reconcilable with the fact that only a fraction have been excavated in India and that at Mahenja-daro alone there are supposed to be super-imposed ten cities of which three alone has been excavated. Again, how far is it true that Mahenja-daro was a port at the mouth of the then Indus, and how far is it true that the trade between the East and the West was by sea as well as by land and that the connection between India and Sumer might have been through another third State instead of being direct? All these are points to be investigated and in his great work *the Sume-*

rians (Oxford, 1928) Mr. C. L. Woolley who has reconstructed the history of the Sumerian civilization from the beginning down to the 3rd dynasty at Ur claims that in the arch, the dome and other things, Sumerian culture is alive to day. It is a task which must be done by Indians as much as by Western scholars.

Another interesting question is the connection with the Hittite Empire of Asia Minor and Syria. How far is Waddell's theory that Hittite is Kshatriya correct? How far is Professor Hrozny's connecting them with the Latin section of the Indo-Europeans in race and language to be accepted? How far is P. of Jon Garstang's theory (Hittite Empire, Constable 1929) true when he says that "though we know nothing of the Hattic race or races, and though official Hittite freely employed the Semitic languages for diplomatic and foreign correspondence, we are disposed on general grounds to pre-suppose an Aryan or Indo-European origin for their race and rulers." It would be fascinating to study their connection with Indian civilization.

Talking of linguistic studies I should like to draw your attention to the remark made by Mr. E. J. Harrison in his *Lithuania* (Hazel, Watson and Viney, London, 1927) that since the extinction of Prussian, "the Lithuanian group of the Indo-European family stands alone as still retaining a few words of the parent Sanskrit". It has also been suggested that in order to understand the origin of the Aryan languages it is necessary to listen to Lithuanian peasants talking. I wonder whether a time will come when an Indian Sanskrit scholar will engage in this special mission of investigating on the spot the nature of the language which has been so closely connected with archaic Sanskrit. And as regards the problems within India they are endless.

Then again there is the investigation of Greater India. It is now in the hands of foreign scholars. It must be nationalised. Nothing can be more inspiring than this.

Lastly, the problems of Indian nationality require the intensive study of the Human Geography in all its aspects. (*Bengal* by Arthur Geddes in *Geography* for Sept. 1929 p. 186 ff). That alone will give a clue to our real defects and needs. Agricultural,

industrial, commercial and social problems have to be investigated from that standpoint; and while there is immense scope for Indian Geographical exploration even in the limited field of her ancient greatness—from Turkistan to the Island of Bali—there is the indispensable necessity for the intensive study of the problems at home.

Statistical Sources for the Study of the Economic Geography of India.*

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Dr. H. R. Mill has in *The International Geography* very significantly placed Economic Geography, "the rubble heap of commercial geography" as he calls it, at the apex of his 'pyramid of geography.' The data relating to this branch of geography are the most changing and uncertain of those of all branches of geography. The pursuit of it involves unceasing vigil, as it is the most dynamic and least static of all branches. We have as yet few fundamental laws on the subject, though the broad tendencies so far traceable have been laid down in a few text-books of economics and of economic geography. There is no branch of geography where generalisations become so soon out-of-date; and text-books occupy but a modest place in the equipment, though some of them are undoubtedly a good guide in the interpretation of new facts and the discovery of new tendencies.

Great indeed is the responsibility of the teacher of Geography to bring knowledge of this subject up-to-date—so far, at any rate, as our country is concerned. But in our country particularly, there is a woeful lack of literature of an up-to-date character, while our syllabuses have generally been ambitious. Books are few and they are not, for commercial reasons perhaps, as rapidly revised as the situation demands. Reports and evidences of commissions of enquiry, valuable as they are, contain much that is

*Substance of a lecture delivered at the Summer School of Geography held in April, 1931, under the auspices of the Madras Geographical Association.

irrelevant to our needs and they can undergo no revision for our sake nor are they even abridged for our use.

For the teacher and advanced student who pursue the study of economic geography with special reference to India, there are certain basic books and reports (as suggested in Part I below, which are almost indispensable; and they must form part of the geography library in every institution. They may well serve as starting points or introductory studies for the intelligent perusal and careful analysis of the periodical publications (as suggested in Part II below) of Statistics issued by the State. Much of the relevant economic statistics bearing on Economic Geography may be found in an abstract form in a single volume entitled the *Statistical Abstract of British India*. This, combined with the very useful publication, *The Indian Year Book* by the Times of India Press, Bombay, which indeed has also a short summary of information contained in most of the basic books and reports, followed by as up-to-date figures as possible in a year book, may perhaps suffice for the immediate task of bringing the data on the subject up-to-date for the class-room.

But there must be some among our teachers who are more ambitious and wish to follow up in detail one or more of the topics dealt with in Economic Geography, for which the *Statistical Abstract* is not sufficient. Personal investigation may to some extent supplement such data so far as a particular locality is concerned. It is in any case a stimulating experience for the teacher and it gives him an insight into problems which the best second-hand conclusions hardly enable him to gain. But the collection of primary data over a whole political or geographical region is beyond the capacity of any Teachers' or even University organisations; work on such a colossal scale involving the cooperation or even compulsion of people can be taken up and discharged efficiently only by the State. Prompt perusal and close analysis of relevant statistics are of the highest importance to research workers. Even for others, familiarity with such at least of the statistical publications in which topics they are most interested is sure to supply the needed corrective of the bookish frame of mind, and induce an independent outlook which urges one to seek for causes and develop reasons instead of swallowing

second-hand explanations. It would inculcate the habit of intelligent anticipation and prediction which should raise a teacher in the eyes of not only his students but the public as well. But nothing is now more pathetic than the helplessness of some of our able teachers endeavouring to illustrate their Principles of Geography solely by instances furnished by other countries and cited in text-books which have grown out of date, or dismissing subjects with a "confused conglomeration of ideas" without any definiteness. It is hoped that even Part I of the Bibliography below will help to correct these errors and serve as a good general guide to the teacher of Economic Geography, while Part II will enable him to specialise in any one or more topics in which he is interested.

PART I: BASIC BOOKS AND REPORTS
For the Study of the Economic Geography of India
(With special reference to Madras Presidency)

Population

The Census Report for India. 1921.

The Census Report for Madras. 1921.

Agriculture

Royal Commission on Agriculture in India-Report. (1928).

Appendix to the above Report containing Memoranda by provincial governments on agriculture in each province (1928).

The Crop Atlas of India (with 16 maps) (1923).

R. C. Wood: A notebook of agricultural facts and figures re: Madras Presidency. (1928).

A popular account of the Agricultural Department, Madras. (1924).

The Statistical Atlas of the Madras Presidency (1924).

Livestock

H. C. Sampson: Live-stock of Madras. (1917).

Fisheries

G. F. S. Christie: Report on Madras Fisheries.

Report of the Committee on Fisheries in Madras (1929).

Forests

R. S. Troup: Work of the Forest Department in India (1917).

E. A. Smythies: India's Forest Wealth (Oxford University Press. 1924).

Irrigation

D. G. Harris: Irrigation in India (Oxford University Press 1922).

Report of The Irrigation Commission.

Mines

J. Coggie Brown: India's Mineral Wealth (Oxford University Press 1925).

Power

Mears: Report on Preliminary Survey of Hydro-electric Power Resources.

Report of the Indian Tariff Board on Coal (1926).

Industries

Report of the Indian Industrial Commission (1918).

(Factory)

Reports of the Indian Tariff Board on the following Industries: Iron and steel, cotton, sugar, paper, cement, chemicals, etc. (1923-1931).

Munitions Handbook of Industries (1919).

The Madras Book of Exhibition (1917).

An account of the Work and Activities of the Industries Department, Madras. (1926.)

Cottage Industries

Survey of Cottage Industries in the Madras Presidency. (1927-1929).

Transport

Report of the Indian Road Development Committee, 1927-28.

Trade and General

C. W. E. Cotton: Handbook of Commercial Information for Indian (Revised 1924.)

Couchman, M. E. : Handbook of Commercial Information for Madras Presidency, 1916.

Watts : Dictionary of Commercial Products, 1908.

Most of the data contained above may be brought up-to-date by a reference to :—

The *Statistical Abstract of British India* (Annual) and

The *Indian Year Book* published by the Times of India Press Bombay.

PART II. PERIODICAL PUBLICATIONS WITH DETAILED STATISTICS

Population and Occupations

The Census Report. (Decennial.)

Published for the whole of India, the Provinces and the Indian States. Comparisons are made with two previous census figures. Contains more ethnic than economic data, though increasing importance is attached to the latter. Of special interest to the economic geographer are the chapters dealing with the density of population in relation to total area and cultivated area, migration within and emigration, occupations elaborately classified, and a special note on Industries.

Agriculture:

Agricultural Statistics of India. (Annual—Govt. of India).

Vol. I. British India; Vol. II. Indian States (relating only to about 60 per cent of the area in the States as a number of these do not yet send returns.) Comparisons with four previous years. Figures of total area surveyed, area under forests, area not available for cultivation, cultivable wastes, current fallows and area sown. Area under different crops, area irrigated from different sources. Average yield (lbs. per acre) of crops, census of live-stock, ploughs and carts.

Estimates of the Area and Yield of the Principal Crops in India (Annual—Govt. of India).

Area and yield per acre of chief crops in each of the previous ten years, the figures of the first nine of which are final and the last one is provisional. Comparisons with the area and yield in foreign countries of some important crops.

Statistics relating to Tea, Coffee and Rubber (Annual—Government of India.)

These are issued separately as *Supplements* to the *Indian Trade Journal* by the Department of Commercial Intelligence and Statistics, contain figures of area, number and area of plantations, production in lbs., persons employed in each province, quantity stocked and available for consumption, imports and exports, prices and wages.

Season and Crop Reports. (Annual—Provincial Departments of Agriculture). Average rainfall according to season, month or year in inches ; total area—cultivated, uncultivated, irrigated, un-irrigated, sown, cropped or manured, areas under different crops, with areas irrigated. Yield per acre of food and non-food crops, irrigated and unirrigated in each district, number of wells, channels and tanks used in each district for irrigation, number of oil engines in use (in Madras districts) seasonal factor or condition, figures of crops ; harvest prices of staple articles ; agricultural stock ; ploughs and carts.

Improved Agriculture

Review of Agricultural Operations In India (Annual—Government of India.)

Report on Operations of the Department of Agriculture. (Annual—Provincial Department of Agriculture.)

The latter gathers together the reports on the working of experimental seed, cattle-breeding and other farms and on other activities of the Department in each Province. The former condenses the information in the provincial reports and comments on the salient features. A table of Statistics of Agricultural improvements, effected and potential, is also appended.

Live-Stock

Census of Live-stock, Ploughs and Carts (Quinquennial—1st Census in 1919-20—Government of India.)

Live-stock is divided into cattle, sheep and goats, horses and other animals.

Forests

Report on Forest Administration. (Annual—Provincial Department). Area (reserved, etc.), area closed and open for

grazing ; areas of artificial production and afforestation ; out-turn (in cubic feet) of timber and fuel ; minor forest produce ; value of part of the produce ; imports of timber, firewood and bamboos.

Fisheries

Report of the Department of Fisheries. (Annual—Madras.)

Contains an account of the activities of the Department, both in marine and inland fisheries. Statistical supplements are issued from 1925—26.

Irrigation

Triennial Review of Irrigation in India. (Triennial—Govt. of India.)

Area irrigated in different provinces, under different crops, from different sources (rivers, tanks, wells); productive and protective works; Financial results; Maps of deltaic and other irrigated tracts—Contains also an account of progress of works and of projects.

Administration Report of the Department of Public Works.—(Annual—Provincial Government.)

Part II—Irrigation Branch.

Mines

Report of the Chief Inspector of Mines in India. (Annual—Govt. of India.)

Total Output of minerals in the year (especially coal, iron, manganese), number of persons employed daily (average), Output per person of coal and coke.

Production and Consumption of Coal in India. (Annual—Supplement to the Indian Trade Journal.)

Production of coal in each Province and State of India; Consumption of coal in India in general and of coal, wood and oil in railways. Number of persons employed daily (average); Imports and exports of coal, quantity and value; comparison of prices of Indian and foreign coal.

Geological Survey Records. Part II.—*Mineral Production of India.* (Annual—Govt. of India.)

Output and prices of 40 minerals; Export and import figures of some.

Review of Mineral Production of India. (Quinquennial.)

All the above plus comparison with statistics of other countries.

Industries: (Large-scale or Factory).

Large Industrial Establishments in India. (Occasional—1925. Govt. of India.)

Has a list of all factories in British Provinces and Indian States employing more than ten persons each. Includes those of quasi-agricultural type engaged in manufacture of tea, coffee and indigo. The location, number of employees and ownership or control of each concern are all the data published, and the industries have been classified according to the articles manufactured: e.g., textiles, minerals and metals, engineering and transport, food and drink, chemicals, dyes, paper and printing. There are not figures of output of goods or of their value, or of the power used.

Statistics of Cotton Spinning and Weaving in Indian Mills.—(Monthly—Govt. of India.)

Quantity (in lbs) of yarn spun and the count of yarn; description, value and quantity in lbs. and their equivalent in yards of woven goods.

Cottage Industries

Surveys of Cottage Industries.—In Provinces, district by district. (Occasional—United Provinces, 1922-24; Bengal, 1924 and Madras, 1927-29).

Administration Report of the Department of Industries.—(Annual, provincial Govts.) Deals more with cottage than large-scale industries; but has little statistics.

Transport

History of Indian Railways constructed and in progress.—(Quinquennial—Govt. of India.)

Report on Indian Railways.—2 vols, (Annual—Railway Board Govt. of India).

Vol. I Report proper and has explanatory chapters on general administration, financial results, new construction, and

Vol. II is all statistics, some of which deal with matters of direct geographical interest: Passenger and goods revenue statistics, by classes and gauges, of the principal commodities carried, of the consumption of coal and oil.

Trade

Statement of the Sea-borne Trade of British India with the British Empire, and Foreign Countries.—2 Vols. (Annual—Govt. of India).

Vol. I, Imports, Exports, and re-exports of private merchandise and Govt. store.

Vol. II, Abstract and detailed tables [of the trade and shipping with each country and at each port in India.]

Review of the Trade of India.—(Part I, Report; Part II, Tables), (Annual—Govt. of India)

Overseas Trade, Frontier and Indo-Burma Trade.

Report of the Sea-borne Trade of the Madras Presidency—(Annual—Govt. of Madras.)

Foreign Trade (Imports and Exports), Coasting Trade and Trade of important ports.

N.B.—*Publications of the Government of India may be had of the Central Publication Branch, Calcutta, while those of the Provincial Governments may be had of the respective Superintendents of the Government Presses.*

Perfection is not claimed for the above statistical publications. There are some obvious defects, and others that are not so patent but will soon be evident to an earnest student.

Neither in adequacy nor in accuracy are our statistics comparable to those published in England or United States or those issued by the International Institute of Agriculture at Rome or the League of Nations at Geneva. We may recount some of the glaring defects in the statistics contained in the publications listed above as a measure of caution.

All except a few of the publications confine their attention to the region comprised in British India. The geographer cannot afford to disregard the men and things and economic activities in the Indian States. Geographical interests rarely, if at all, coincide with political boundaries. But it is unfortunate that all the States have not made arrangements to send their returns to the Commercial Intelligence Department, even in cases where the latter have offered to collate and publish them. For example, in Vol. II of the *Agricultural Statistics of India*, which deals entirely with the Indian States, more than 40 per cent. of the total area in the Indian States does not figure in the returns at all.

On the other hand, most of the publications deal specifically only with British India; and almost all the Indian Commissions of Enquiry are shut out from investigating conditions in the States. We hope that one of the first fruits of the Federal India of the future will be the establishment of an agency that will deal with the statistics of the whole of India without exception and on the same basis. Meanwhile, it is open to anyone who is acquainted with the Indian States to supplement the list suggested above with similar State publications.

Some might note an over-emphasis on conditions in the Madras Presidency at the expense of even other British provinces. But is it not the primary duty of everyone of us to know best the immediate environment in which we live? It is open to men of other provinces to supplement or substitute the special Madras publications with those in any other province in which they are most interested. It is, however, true that from the purely geographical point of view, the Madras Presidency is not a unit by itself and that it has, in fact, of all provinces the most heterogeneous conditions of climate, soil, plant and human life—which gives rise to special problems. But the administrative agency being the most responsible for, and the most interested in, the collection and publication of statistics, it is but inevitable that geographic considerations should give place to administrative convenience, though occasionally, as in the decennial population census, the Presidency is divided into natural divisions and figures tabulated thereunder. It is up to an enterprising voluntary agency like the Madras Geographical Association to disentangle the data furnished by the State and group them in geographical categories.

It is only too easy to point out the inadequacy and the lack of uniformity of classification in some matters of vital import to us. For instance, in the *Agricultural Statistics of India* there is no attempt to split up 'the area not available for cultivation' into (i) that which is covered by rivers, tanks, roads, railways, buildings, house-sites, etc., and (ii) that waste-land which is supposed to be too barren for reclamation and cultivation according to existing standards. Even of 'cultivable wastes,' the degree of difficulty in bringing them under actual cultivation is not known to any extent by any indication of the type of handicap or facilities for the same.

Practical administrators themselves distrust the returns of the extent of cultivable wastes. And yet this is a matter of the greatest consequence to an agricultural community swelling in numbers in a well-settled country like ours. With regard to 'current fallows' there is a wide difference in the duration that is allowed in the various provinces for a land to lie fallow before it gets incorporated among wastes. This can be explained by differences in climatic conditions but comparisons are difficult to make between provinces. Similar is the case in live-stock statistics where the methods of classification are not uniform in all provinces. Land under 'Forests' is not, except to an increasing extent in Madras, clearly demarcated and classified into the area covered by valuable timber, that which has only inferior wood, the scrub jungle or mere grazing ground or often an apology for it. The futility of statistics published from the administrative point of view is illustrated in the case of forest statistics as we are told "much of the area consists of waste ground, often entirely devoid of trees, sometimes indeed of vegetation of any kind."

Inaccuracy is a charge that is often laid at our statistical returns. Even our vital statistics are impugned, but this is nothing compared with the returns of cattle, that are born and die, submitted by village officers. Their report on the area sown with crops, the estimated yield, the condition of crops, etc., are in several cases suspect, though somewhat elaborate attempts have been made by provincial departments of agriculture (as in Madras) to improve their accuracy. In some of the 'permanently settled' provinces like Bengal, Bihar and Orissa, the police is the main reporting agency and though the reports pass through revenue divisional officers, and are amended, they are "admittedly often mere guesses and are, not infrequently, demonstrably absurd guesses." On the other hand, figures relating to plantation crops like tea, coffee and rubber cultivated largely by well-organised capitalist bodies, are by far the most reliable; while the returns relating to export crops like cotton, jute and oil-seeds show a distinct tendency to improvement—thanks to powerful exporting or manufacturing interests involved.

Total lack of data is what oppresses us most in connection with the total output or value of several kinds of commodities. No attempt has been made except in stray instances of survey of

the production of milk and milk products from our milch-cattle in spite of the numerous herds we have. This is not strange in view of the almost total neglect of milk-yield in the case of most of our breeds which are kept for the single purpose of breeding work-animals. The hundred-and-one by-products of animal husbandry carefully utilised in other countries are many of them unheard of by producers in this country and practically none finds a place in any of our statistics. In the case of fisheries, attempt is made in one or two provinces—maritime like Bengal and Madras—to assess the output and value of the total catch of fish in some noted regions; but fisheries do not excite the interest of most other provincial governments, though in a large rice-consuming country fish would considerably supplement the staple food.

Of the large-scale industries, except those of coal-mining, cotton and jute manufactures, we get no figures of individual or total production or of their probable value. Figures of exports and imports are no doubt available, but by themselves they do not give an idea of their total production or consumption in this country. The condition of cottage industries cannot, of course, be watched and reported upon with a hundredth as much ease and accuracy; they are subjected to a rapid and occasional survey and the estimates of output are even then taken at a discount. It is not denied that in several cases it may not be worth while, except from the academic point of view, to institute enquiries and strive for accuracy.

It is a pity, however, that there has been some retrogression in the recent past. Due to the craze for retrenchment one of the most unwise cuts effected in the last decade was the cessation of the returns of *Rail-borne Trade* which alone could reveal the enormous volume of internal trade in this big country. This is a case in which the returns are by no means difficult of compilation by the Railways concerned, but it only meant some cost. Thanks to the agitation by the Chambers of Commerce and some committees of enquiry the publication of the rail-borne trade figures has been recommended to be revived. Road traffic is far more difficult to ascertain, especially after the recent abolition of tolls; but who can say that it is negligible in this country? Will the Government think of some agency to register it?

More holes might be picked in our statistics, if time permitted; we have already a formidable array of them to make us sceptical of the value of building a big super-structure on such flimsy foundation of facts. But it is not for us to despair of the improvement of our statistics. A sound system of organisation for the collection, compilation and publication of statistics cannot be built up in a day. Things are, in the main, improving. There is no sound suggestion that the State is not willing to entertain and work out, if the cost is not prohibitive. There is, too, a growing critical public which demands more and better statistics, which the reformed governments cannot long postpone. The standard of the geographer, even the economic geographer, need not be as fastidious as that of the economist in respect of economic statistics. There is indeed ample scope for work of the nature of qualitative analysis which may be done by an earnest student of economic geography even with the aid of the existing statistical publications. To damn the whole lot of these and wait for the day of perfected statistics may well be construed as the excuse of the indolent rather than as the justification of the over-scrupulous.

The Fifth Annual Meeting of the Association

The Fifth Annual Meeting of the Madras Geographical Association was held on Saturday the 18th July, 1931 at the Presidency College, Madras with Mr. S. Lakshmana Ayyar, the Vice-President in the chair. The Report for the year 1930-31 was read by the Secretary and adopted. The following office-bearers were elected for the year 1931-32:—

Mr. Rao Saheb T. S. Subramania Ayyar (President), Messrs. S. Lakshmana Ayyar and K. Rangaswami Ayyangar (Vice-Presidents), Mr. N. Subrahmanyam (Secretary) and Mr. C. M. Gopal (Treasurer). The four other members who were elected for the Working Council were Messrs. V. K. Sourirajan, T. N. Muthusawmi, K. C. Ramakrishnan and Rao Saheb C. M. Ramachandra Chettiar. (*Mofussil*.)

After the election was over, the Educational Moving Pictures Co. put on the screen the following *geographical films*, which were

very highly appreciated:—The Earth, The Arid South-west, From Iron Ore to Pig Iron and Cotton.

The meeting came to a close with a vote of thanks to the chair.

PROVISIONAL PROGRAMME OF ASSOCIATION TOUR IN MYSORE

(During the ensuing Christmas holidays)

1st day. Arrival at Bangalore at 6-30 A.M.

Visits to important places. Departure at 10 P.M.

2nd day. Arrival at Maddur at 2 A.M.

Visit to Sivasamudram Falls and Hydro-electric Works.

3rd day. Arrival at Mysore at 6 A.M.

Visit to Chamundi, Zoo, Serangapatam and Krishnaraja Sagara (Kannambadi).

4th day. Departure from Mysore at 2-40 P.M.

5th day. Arrival at Shimoga at 6-55 A.M.

&

6th day. Visit to Bhadravathi and journey to Jog Falls (Gersoppa).

7th day. Return from Jog Falls and departure at 9 A.M.

Banavasi (Halebid temple): arrival at 1-15 P.M.

Visit to temple and back to station.

8th day. Departure at 6 A.M.

Arrival at Bangalore 12-55 P.M.

9th day. Departure from Bangalore 7-20 A.M.

Arrival at Kolar Gold Fields at 10 A.M.

Visit to Gold Fields and back to Bowringpet.

Departure from Bowringpet 10-30 P.M.

10 day. Arrival at Madras at 6-30 A.M.

The travelling and boarding charges are expected to come to about Rs. 65. Members wishing to join the party should register their names by 1st November, 1931 by paying the registration fee of Re. 1. Further, they should remit Rs. 75 each to the Secretary so as to be received by the 1st December, 1931. The unspent balance will be refunded at the end of the tour.

GOPALAPURAM, CATHEDRAL P.O., } N. SUBRAHMANYAM,
Madras, 1st September, 1931. } Secretary.

Hints and Comments on the S. S. L. C. (C-Group) Geography

The optional course in S. S. L. C. Geography (Madras) or C-Group Geography as it is called, however interesting it may be, cannot be popular for some years until the subject is provided for in the Intermediate Course at least in a few colleges; for, otherwise it is a blind alley, not leading to the higher study of it in the University. In spite of this fact, it is gratifying to find quite a number of schools having C-Group Geography, as is evidenced by the number of enquiries from teachers regarding the treatment of the syllabus, references for study, etc.

The course includes (a) an outline study of Physical Geography, (b) a detailed regional study of India, and (c) a detailed study of a major natural region of the world other than India, *the south-west lands of Asia* being the special region prescribed for the examinations of 1932 and 1933. Further, it is assumed that (d) Practical Work along definite lines indicated has been done. As a fairly full syllabus has been given under (a), (b) and (d), it is proposed to suggest in the course of this article a syllabus for (c) namely, *the south-west lands of Asia*.

The time allotted for each of the C-Group subjects in forms V and VI is 4 out of a total of 30 periods in the week. It is suggested that the regional study of India be completed in form V at two periods per week, utilising the other two periods for Physical Geography and for Practical Work as indicated below. In form VI what remains of Physical Geography may be completed, while doing at the same time the special region in two terms at the most, leaving the third term free for revision.

The syllabus in Physical Geography is clear, simple and definite and needs little further commentary. At two periods per week the greater part of the subject, including the connected Practical Work, can be covered in the first year. What is left over can be finished in the first two terms in form VI. The books recommended, namely, Wilmore, Skeat and Richardson, are more for the consultation of the teacher and the reference of the pupils

and are too advanced to be used as text-books by the latter. For this purpose Carey's First Book of Physical Geography may be recommended, though it will have to be supplemented by the teacher. Fairgrieve and Young's Class-book of Practical Geography is quite good for pupils' use; but the teacher will do well to substitute Indian data for exercises and Indian examples in place of those of British Isles in the book, which is primarily intended for English pupils. Climatic figures are available in Kendrew's Climates of the Continents as well as in weather reports, while contour exercises can be set from Indian Ordnance Survey maps.

As regards the detailed regional study of India, the syllabus is full and clear; but item A (A General Survey of the Physical Conditions of India) will have to be developed into a few lessons, about half a dozen, such as Position, Relief, Climate, Natural Vegetation and Natural Regions, in view of the fact that C-Group India will be commenced early in the year in form V, while according to the A-Group Syllabus India will be taken up only towards the end of the year.

In treating each of the regions the method of map-study should be followed largely, and the pupils should be trained to illustrate their answers with sketch-maps. Further, statistics of temperature, rainfall, crops, commodities etc. should be freely used for the construction of sketch-maps, graphs, diagrams, etc. In fact, the necessary practical work should be done then and there as each of the sub-regions is studied, and not taken up for separate treatment together. Stamp's Geography of India can be used as a text-book, noting however the fact that the regions are treated in it in a different order from that in the syllabus. In this connection the teacher's attention may be drawn to the following articles on India which are very valuable, suggestive and interesting:—(1) *Natural Regions of India* by J. N. L. Baker in the Summer Number (No. 81) of 1928 in *Geography*, (2) *The Natural Regions of India* by L. D. Stamp in the Autumn Number (No. 82) of *Geography*, (3) *Cultural Regions of India* by F. J. Richards in the March Number (No. 83) of 1929 of the same Journal, and (4) *Geographic Regions of India* by D. R. Bergsmark in the *Journal of Geography*, March 1929. An excellent map that can be used for teaching this portion of the syllabus is that of India and

the Adjacent Countries by the Survey of India (13, Wood's Street, Calcutta.)

On an average two lessons will be needed for each of the sub-regions of India according to the syllabus. This would make a total of 48 lessons, which together with the few introductory lessons suggested above is just enough work for one year at two periods per week, the portion being finished in the Vth form.

For the special region—the *South-west Lands of Asia*—the following detailed syllabus is suggested :—

A. A general survey of the physical conditions of the South-west Lands.

B. *Anatolia*.—Position, extent, build and rivers; climate and vegetation; Natural regions,—(i) Coastal areas of the north-east, Marmara, Smyrna and the south coast, (ii) the plateau areas of Inner Anatolia and Inner Armenia, and (iii) the forest areas of the north, the north-west and the south. Communications, towns and trade. Cyprus.

C. *Syria*.—Position, extent and relief; climate and vegetation. Northern Syria (Ancient Phoenicia) and Palestine; sub-regions of each. Communications, towns and trade.

D. *Arabia*.—Position, extent and relief; climate and vegetation. Natural regions—Red Sea littoral, uplands of Yemen, southern and eastern coasts, central Arabia (Nefud and Nejd). The people. Communications and towns. Aden.

E. *Mesopotamia*.—Position, extent and physical features (the two rivers) climate and vegetation. Natural regions—north-eastern mountain region, Upper and Lower Iraq, the desert fringe. Communications, towns and trade. Historical importance of the land.

F. *Persia*.—Position, extent and relief; climate and vegetation. Natural regions—Northern Highlands, Caspian littoral, south-western highlands, central deserts. Population and development. Communications, towns and trade.

G. *Afghanistan*.—Position, extent and relief; climate and sub-regions. Communications, trade and towns.

H. *Baluchistan*.—Position, relief and communications. Political divisions and towns. People, occupation and products.

The method of treatment of the special region is exactly similar to that suggested for India; and Practical Work should be correlated right along in the manner already indicated, using statistics freely for preparing maps, graphs, charts and diagrams. The historical importance of the region, partly as the Homeland of Great Empires and the Birth-place of Great Religions and partly as the Highway of Commerce and Culture through the ages, should all be fully stressed. Correlation with the Home Country (India) as well as with countries and regions dealt with in A-Group syllabus by way of frequent comparisons and contrasts should be brought out.

The portion will require from about 25 to 30 lessons, which can be completed by the middle of the second term in the VIth form, the rest of the year being devoted for revision. Either of the following two books may be used as a text-book, for want of a better :—(i) *A Geography of Asia* by Joseph Martin (Macmillan & Co.) 1921. Pp. 1 to 46. (ii) *A Regional Geography: Part IV—Asia* by L. Dudley Stamp (Longmans, Green & Co.) 1930. Pp. 149 to 179. While the treatment in the former is fuller and more satisfactory, the latter book is more recent and contains plenty of maps and diagrams. To some extent each is complementary to the other. The relevant portions of other standard text-books of Geography may also be used for consultation. Herbertson's *Descriptive Geographies from Original Sources: Asia* gives first-hand accounts of travellers, and may be used for supplementary reading.

In conclusion, it is necessary to impress that C-Group Geography and A-Group Geography should not be treated as two distinct subjects. On the other hand they should coalesce; and the pupils studying Optional Geography should be able to see more in A-Group Geography than those who do not thus specialise. They should be able to apply even in their study of A-Group Geography the methods of Practical Work etc., learnt in C-Group Geography.

The post-war changes in life and conditions of the countries of South-western Asia should be well touched upon by referring to recent books and journals.

N. SUBRAHMANYAM, M.A., L.T., F.R.G.S.

Plea for Geography as an Independent Subject in the School-Curriculum

The importance of geography as the core subject in the school curriculum, and as an optional subject in the University and the School, has been recognised, but it has been given more or less a subordinate place in the A-Group S. S. L. C. Syllabus by being clubbed with History. A sort of step-motherly treatment is even now extended to Geography as is evidenced by the proportion of maximum marks assigned between History and Geography. While the former carries 60 marks out of a total of 100, the latter is made to be content with only 40 marks. This union of Geography with History is anomalous and unjustifiable; and the subject must be separated from History and given an independent position. The importance of Geography has been well established and it is unnecessary to expatiate at this time of the day on the practical, correlating, disciplinary and cultural values of a study of the subject. Once all these values are recognised, the step-motherly treatment must go; and Geography must be accorded an independent place in the school curriculum.

There is also another ground and an important one why geography should be made a separate subject. From my experience I find that the clubbing of the subject with History has done it incalculable harm. As there is no separate minimum for the subject, students neglect it hoping and striving to get more marks in History than in Geography. There is a tendency among students to neglect Practical Work finding it distasteful. I have heard students complaining that after having studied all the continents, their mother-country and the world, they will have to answer only an hour's paper, in which there will be only 3 questions which may touch upon anything anywhere. The questions cannot be evenly distributed. The students knowledge cannot be properly tested in this *one short hour*, and the result of three years' training in a valuable subject is made to hang on an hour's (it may be) hap-hazard test. So, there is superficial treatment of the subject

by the teacher, and by the boys. I consider that such Geography teaching is of no value, and is a waste of time and energy.

I, therefore, appeal to the teachers of geography to agitate and get a proper place for this very valuable subject.

V. DESIKA CHARI, M.A., L.T.,
Geography Master, M. H. School, Gudiyatham.

Reviews

The New Era in Home and School.—July 1931 (Vol. 12, No. 55.) (11, Tavistock Square, London, W. C. 1.) Price 6d.

This number is devoted to Geography and contains many articles of supreme geographical interest. Prof. Fleure defines modern *Geographical Outlook*, and shows its value in life and how its teaching is to be graded in the school. In his philosophic article on *Geography and Nationalism*, Prof. Roxby brings out the importance of the *place* concept. The same idea is continued by the Evanses in *Geography and World Citizenship*. The article on the *New Geographic Education* by Erna Grassmuck is a neat summary of modern methods, which ought to be studied by every teacher. Of equal interest is the article, *Geography in the Elementary School* by Searson; and so is *Geography in Secondary Schools* by A. Booker. Mr. E. D. Laborde describes how *the New Geography* had found an abiding place in the Public Schools of England. Suggestive and thought-provoking are the next two articles, *Geographic Thinking* by Lucy Mitchell and *the Significance of Geography* by Margaret Spilhaus. There is at the end a valuable bibliography given by way of *A Few Aids to Geography Teaching*. Altogether very much more than a sixpenny worth.

A Geography of the World for High School—Part I: The Southern Continents and North America by N. Subrahmanyam (The Indian Publishing House, Ltd., Madras). Price Re. 1-8.

This is a text-book of Geography for the use of High Schools in South India, written in accordance with the recent S. S. L. C. Syllabus. The author, who is a lecturer in Geography in the premier Training College in the Presidency, has treated the subject in a simple, lucid and interesting manner, adopting to a large extent the descriptive style and incorporating sound doctrines of

modern pedagogy in the presentation. This method has necessarily tended to swell the size of the volume, which is only the first part covering the three Southern Continents and North America—the portion for Form IV. It is illustrated with a large number of suitable maps and diagrams; and the type and get-up are specially attractive. We would have preferred to see at the end of each chapter a list of problems and exercises; but we note that the author has promised a supplementary volume of Practical Work, based upon the syllabus, which can be used along with the text. A larger number of pictorial illustrations would enhance the usefulness of the book, which is just what is required. It is hoped that the other parts will be published soon.

Secondary School Geography by L. Dudley Stamp (Longmans Green & Co., Ltd.). Price Rs. 2.

Dr. Stamp of London University, who is well-known as the author of several books on Geography, has lost no time in adapting his *Geography of the World* to the requirements of the Madras S. S. L. C. (A-Group) Syllabus. The merits of his bigger book are all there in this volume also such as an easy direct style and treatment, a very large number of useful maps, diagrams and pictures and suggestive questions at the end of each chapter. The book covers the whole course of three years in 434 pages of closely printed matter. It is, however, felt that some of the topics such as the human geography of the three regions of Australia, Transport and Communications of North America and the Regions of the World in Part III are meagrely dealt with. In spite of the small and close-printed type, the get-up is neat and attractive; and the price is quite cheap for the value.

A Regional Geography—Part IV: Asia by L. Dudley Stamp (Longmans, Green & Co.). Price 4sh.

This volume is Part IV of a series of Regional Geography books designed for Higher School and Intermediate Courses. It is an enlarged reprint of "The Economic Geography of the Leading Countries" in the second part of the author's *Intermediate Commercial Geography*, without, however, the special stress on the economic side of the original book. *The South-west Lands of Asia*, which is the special region prescribed for the optional (C-Group) Geography Course of the Madras S. S. L. C. Scheme for

the years 1932 and 1933, has been re-written in a more extended manner, and can, therefore, be used as a text by pupils preparing for that course. As usual with Stamp's books, the volume is copiously illustrated with maps and diagrams, and the type and get-up are quite good. A table of contents and suitable pictorial illustrations will certainly make the book more useful.

A Geography of Asia by Joseph Martin (Macmillan & Co.). This is one of the volumes of Macmillan's Practical Modern Geographies, and is nearly a dozen years old. Still it can be recommended as a valuable text-book for the special portion of the Madras S. S. L. C. (C-Group) Geography, prescribed for 1932 and 1933, namely, *the South-west Lands of Asia*. Each of the regions is treated descriptively; and every lesson is preceded by statistics and followed by suggestive questions and exercises. The book is well illustrated by a large number of maps, diagrams and pictures. The insistence on practical work and the descriptive style of treatment render it particularly useful as a text-book for the special region; but we wish it is brought up-to-date.

Vernacular Atlas Geography Series (Tamil and Telugu)

Book I Madras Presidency, Book II India, Book III Eurasia by K. Doraiswami Iyengar (C. Coomarasawmy Naidu & Sons, Madras).

This is a series of Vernacular Geography books for the use of lower and middle school classes in South Indian schools on the lines of the other well-known Atlas Geographies, possessing the peculiar feature of combining Geography and Atlas in one volume. The subject has been dealt with in a simple and practical manner without any long catalogue of names that would strain the memory of the pupils. At suitable stages stimulating and suggestive questions have been appended. But though the books have been illustrated with maps and pictures, it is regrettable that some of the former are blurred or over-crowded with names. On the whole they afford a good foundation for a rational study of the subject in the High School.

Rural Science and Sociology by K. Doraiswami Iyengar (C. Coomarasawmy Naidu & Sons) Price Re. 1-1.

This book has been prepared in accordance with the Training School Syllabus for the use of elementary school teachers under training, and consists of a miscellaneous grouping in a

single volume of subjects, none of which can be treated thoroughly within the compass. But the pupil-teachers have no time or previous preparation to study these subjects more fully; and the volume just meets their requirements and fills a gap. We, however, feel that the chapter on Physiography is too meagre and inadequate to be of sufficient use.

News and Notes.

We regret to announce the death of the ex-president of the Association, Mr. P. T. Srinivasa Iyengar. A dynamic personality, he entered to whatever he turned his hand with all the zest of youth. He was a pioneer of geographical education in South India, delivering the Gospel of the New Geography as far back as 25 years ago. His versatile talents, his genial manners, his basic common sense have endeared him to one and all during his long career as a teacher for two generations. We convey our condolences to the members of his family.

It is our painful duty to record the passing away of Mr. M. S. Subrahmaniam, who was pursuing his higher geographical studies at London University as a Madras Government Scholar. He was cut off in the prime of youth at the threshold of a brilliant career, which his energy, enthusiasm and industry assured him. It is a loss to the Geographical education in South India, as he was to have on his return organised the geographical studies in Madras University. He was using his time in England to the best advantage: and it was on his excursion to Whitby that he caught the fever of which he died. Earnest to a fault, he kept himself abreast of the progress here, and even in May last he sent a paper on *the Palghat Gap* for the Malabar Geographical Conference.

We congratulate the energetic secretary of the Association Mr. N. Subrahmanyam on his being elected Fellow of the Royal Geographical Society, London. Our readers will note with interest the following extract from the Madras Mail, dated 26th May, 1931:—"Mr. N. Subrahmanyam is the first Indian gentleman of South India who has been thus honoured. He has been a

teacher of Geography for nearly a decade and half and Lecturer on the staff of the Teachers' College for more than six years. He was the Founder and has been Secretary (since its inception) of the Madras Geographical Association. Besides, he is the Chairman of the Board of Studies in Geography of the Madras University and also a member of the Board of Studies in History, Geography and Economics of the Andhra University. As such he has done yeoman service towards the promotion of the study of Geography. He is the author of a Text-book of Geography for High Schools. He was mainly responsible in starting several Summer Schools of Geography in various parts of the Presidency under the auspices of the Madras Geographical Association as well as under the District Boards and District Guilds."

The Annual Meeting of the Association could not be held during April this year also, as several of the members had left the place for the holidays. It was, therefore, held on 18-7-1931 after the schools and colleges reopened; and the Report of it is given elsewhere. Seeing that the same difficulty had arisen twice, it is probably desirable that the Rule itself be altered so as to have the Annual Meeting in July every year.

It is gratifying to note the rapid increase in the membership of the Association since the commencement of the current year. Two new branches have been formed at Mangalore and Tirupati. The mere increase in the number of branches, however, without any correspondingly increased activity on their part is not a satisfactory state of affairs; and it is hoped that the branches will show a better record of work in the current year.

The Second Geographical Conference of the Association was held at Palghat on the 20th May, 1931, and the two following days under the presidency of Prof. V. Rangacharya, when over twenty papers on different aspects of the Geography of Malabar were read by specialists, each in his own line. The Presidential Address, which is published in this number, is a comprehensive and inspiring historical survey whose lessons have specially to be borne in mind at this juncture of our national situation. The

proceedings of the Conference with all the papers will be published in the October Number of the Journal.

It is proposed to arrange for an Association Tour through Mysore during the coming Christmas holidays. A Provisional Programme is given elsewhere; and members wishing to join the Tour are requested to register their names by paying a fee of Re. 1 and send their suggestions for improvement. The travelling and boarding charges are expected to come to about Rs. 65; and so, including a margin of Rs. 10, an amount of Rs. 75 will be remitted to the Secretary by each member wishing to join the tour so as to reach him by 1st December, 1931. The unspent balance will be refunded at the end of the tour.

The Hints and Comments on the Madras S. S. L. C. Syllabus in Geography is completed in this number with the article on C-Group Syllabus. Owing to requests from several teachers, all these articles will be gathered together and published as a Bulletin along with the Syllabus itself, a Bibliography for High Schools and a list of minimum equipment. The price of it will be As. 4 (exclusive of postage). Orders may be registered with the Secretary.

In the next number will appear an article on Modern Tests and Examinations as applied to Geography.

Under the auspices of the Anantapur District Teachers' Guild, a Refresher Course in Geography was conducted at Gooty from the 2nd to 15th June, 1931, by Mr. N. Subrahmanyam, the Secretary of the Association. Fifteen teachers of Geography from the various high schools in the Ceded Districts attended the course. The instruction was both theoretical and practical, and included geographical excursions to Gandikotta (where the Penner winds through a gorge between the hills), Alur Waterfalls (near Tadpatri), Bilvamkonda, Erragudi (where Asokan edicts were recently discovered) and to the Hampi ruins. A lantern lecture at Gooty was presided over by the District Collector, Rao Bahadur V. N. Visvanatha Rao, who was helpful in the conduct of the course and in the excursions in a variety of ways. The class was dispersed at Bellary on 15-6-31 after a public lecture.

In view of the fact that copies of the revised syllabus of Geography (Group-A) were supplied to schools only in 1930-31 and that it may not be possible for schools to complete the portion fully, it is proposed to make the following arrangement in framing the question paper for the S. S. L. C. Public Examination of 1932:

The paper will be divided into three parts as shown below: Part I—The Southern Continents—Australia, Africa and South America; Part II—North America, Eurasia and India and Part III—The World.

Candidates for the examination will be required to answer a certain number of questions in Part II and select the remainder to make up the total number of questions to be answered from either Part I or Part III.

Under this arrangement Part II will be compulsory and the choice will be only between Parts I and III.

Books and Journals Received

Geography of the World for High Schools by N. Subrahmanyam (The Indian Publishing House, Madras).

Secondary School Geography by L. Dudley Stamp (Longmans Green & Co.)

Pupils' Geography Series Book I: The Three Southern Continents by T. S. Sundaram Aiyer (The Teachers' Publishing House.)

The Geographical Journal (Royal Geographical Society) April, May, June and July 1931.

The Geographical Review (American Geographical Society of New York) April and July 1931.

Geography (The Geographical Association) June 1931.

The New Era (Geography Special Number) July 1931.

Quarterly Journal of the Mythic Society April and July 1931.

The Indian Educator April, May and June, 1931.

The Journal of the Travancore Teachers' Association April '31.

Our Home Magazine April, 1931.

The Educational Review May, June and July, 1931.

Rural India March, April, May and June, 1931.

Journal of the Andhra Historical Research Society January '31.

The South Indian Teacher May, June and July, 1931.

The Scientific Indian April, 1931.

Wealth and Welfare 17th April, 1931, to 24th July, 1931.

BOOKS FOR MADRAS S. S. L. C.—A GROUP SUBJECTS

(Prepared in accordance with the revised syllabuses)

GEOGRAPHY

	Rs.	A.	P.
1. A GEOGRAPHY OF THE WORLD (ENGLISH) by N. Subrahmanyam, M.A., L.T., F.R.G.S., Teachers' College, Saidapet, Part I (The Southern Continents and N. America)—for IV Form ...	1	8	0
Part II—Section 1. General Geography of Eurasia ...	0	5	0
<i>Other sections are in the press and will be ready shortly.</i>			
2. A GEOGRAPHY OF THE WORLD (TELUGU) by N. Subrahmanyam—translated by K. Satyanarayana, Geography Assistant, Raja's College, Parlakimidi, Part I—Sections 1 and 2 (Australia and Africa) ...	0	12	0
3. A GEOGRAPHY OF THE WORLD (MALAYALAM) by N. Subrahmanyam—translated by P. Rama Pisharody, Assistant, Government Victoria College, Palghat. (<i>In the press</i>) ...	} will be ready shortly.		
4. INDIAN SCHOOLS IMPROVED ATLAS WITH INDEX ...	1	8	0

HISTORY OF ENGLAND

1. HISTORY OF ENGLAND (ENGLISH) by L. G. Brandon, M.A., (Cantab) with a foreword by B. Clutterbuck, M.A., Wesley College, Madras	2	0	0
2. HISTORY OF ENGLAND (TELUGU) by L. G. Brandon—trans- lated by P. Lakshmikantham, M. A. Reader in Telugu, Andhra University	2	4	0
3. HISTORY OF ENGLAND (MALAYALAM) by L. G. Brandon— translated by V. K. Achyutha Menon, M.A., D. COM., Retired Senior Inspector of Schools, Cochin State. (<i>In</i> <i>the press</i>)	} will be ready shortly.		

HISTORY OF INDIA

1. A HISTORY OF INDIA (TAMIL) by M. K. Sundaravaradachariar, B. A., L.T., Headmaster, C. C. C.'s High School, Perambur	...	...	...	1	10	0
2. A HISTORY OF INDIA (TELUGU) by Mullainpalli Somasekhara Sarma. (<i>In the press</i>)	...	...	...	} will be ready shortly.		

The Indian Publishing House Ltd.,

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G. T., MADRAS.

Some Important Papers Published in previous Numbers of the Journal.

1. *Some Aspects of the Geography of Madras* by Miss. E. D. Bridseye, B. Sc.
2. *The Geographical Evolution of Madras and its Environs* by Rao Bahadur H. Narayana Rao, M. A.
3. *The Flora of Madras and its Environs* by Mr. M. S. Sabhesan, M. A.
4. *The Planting Industries of Southern India* by Mr. R. D. Anstead, M. A.
5. *Rural Geography* (with special reference to South India) by Mr. N. Subrahmanyam, M. A., L. T.
6. *The Birds of South India: their Distribution and Habits* by Mr. C. Lakshminarayana, M. A.
7. *South Indian Cattle: their Breeds and Distribution* by Mr. A. Swaminatha Ayyar, B. A.
8. *Stages in the Growth of the City of Madras* by Professor C. S. Srinivasa Chari, M. A.
9. *Sewage and City Geography* by Mr. N. Swaminathan, B. Sc., A. I. I. Sc.
10. *Rural Life on the West Coast: A Study in Environment* by Mr. A. Appadorai, M. A., L. T.
11. *The Geographical Data of the Sangam Works* by Professor V. Rangacharya, M.A., L.T.
12. *Notes on the Maps of Old Madras preserved in the Madras Record Office* by Professor C. S. Srinivasa Chari, M.A.
13. *The Buckingham Canal: A Survey—Historical Geographical and Economic* by Mr. V. K. Sourirajan, M.A., L.T.
14. *The Geographical Basis of Ancient South Indian Culture* by Professor P. T. Srinivasa Ayyangar, M.A.
15. *Some Results of Recent Upper Air Investigations* by Dr. K. R. Ramanathan, M.A., D. Sc.
16. *Studies in the History of Some Common Commodities* by Professor V. Rangacharya, M.A., L.T.
17. *The Comorin Continent* by Mr. C. P. Gnanamuthu, M.A.
18. *The Geographical Distribution of Disease* (with special reference to South India) by Major A. M. V. Hesterlow, I.M.S.
19. *The Agricultural and Economic Activities in the Madras Presidency* by Mr. K. C. Krishnan, M.A.

20. *South Indian Pearl Fisheries* by Dr. B. Sundara Raj, M.A., Ph. D.

21. *Migration of Labour* (with special reference to South India, by Mr. P. S. Loganathan, M.A.

A limited number of back numbers are available at half-rates i.e., Re 1 per number or Rs. 4 per volume.

The Coimbatore Conference Double Number (Volume V, Nos. 2 and 3) contains 14 original papers, read at the First Geographical Conference of the Madras Geographical Association, on various aspects of the Geography of Coimbatore District. A few copies will be given at the reduced rate of Rs. 2 each.

Papers read at the Coimbatore Conference

1. *Geographical control of Early Kongu History*: by Mr. P. T. Srinivasa Iyengar, M.A.

2. *The Geographical Limits of Kongunadu at various epochs*: by Mr. C. M. Ramachandra Chettiar, B.A., B.L.

3. *A Survey of the Recent History of Coimbatore District*: by Mr. C. S. Srinivasa Chariar, M.A.

4. *Some Place-names of Coimbatore District*: (i) by Mr. S. Natesan, B.A. (Hons.), L.T. (ii) by Mr. C. M. Ramachandra Chettiar, B.A., B.L.

5. *A Note on the Physical Geography and Geology of Coimbatore District*: by Mr. T. N. Mutuhswami, M.A., L.T.

6. *Meteorology of Coimbatore District*: by Mr. M. S. Subramaniam, B.A. (Hons.).

7. *Agricultural Geography of Coimbatore District* (with special reference to garden crops) by Mr. K. C. Ramakrishnan, B.A.

8. *Cattle of Kongunad*: by Mr. A. Swaminatha Ayyar, B.A.

9. *Home Industries of Coimbatore District*: by Mr. R. Hari Rao, M.A., L.T.

10. *Mill Industry of Coimbatore District*: by Mr. C. V. Venkataramana Ayyangar, B.A., B.L.

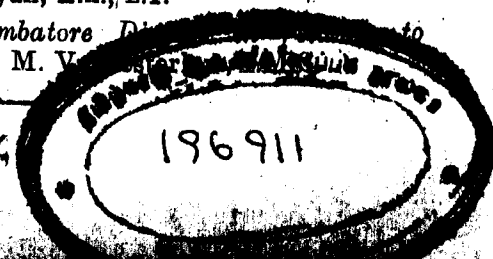
11. *Population of Coimbatore District*: by Mr. S. S. Krishnaswami, B.A., L.T.

12. *A Note on the Urban Geography of Coimbatore and its Environs*: by Mr. R. Dann.

13. *Towns-sites and Communications-lines of Coimbatore District*: by Mr. N. Subrahmanyam, M.A., L.T.

14. *Public Health of Coimbatore District*: by Major A. M. V. ... to physical conditions: by Major A. M. V. ...

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THE Madras Geographical Association RULES

1. The name of the Association shall be 'The Madras Geographical Association'.

Objects.

2. The objects of the Association shall be:—

- (A) To promote geographical knowledge;
- (B) To secure for geography its proper place in the High School, the University and its constituent and affiliated colleges;
- (C) To help to improve the methods of teaching geography;
- (D) To work for a school of geography being started;
- (E) To promote studies about South India from various standpoints.

3. These objects shall be secured by:—

- (A) Holding meetings and conferences, and publishing periodicals and occasional bulletins;
- (B) Organizing geographical exhibitions and excursions;
- (C) Helping in the preparation of geography books in the languages current in the Presidency;
- (D) Forming a central library of geographical literature, and collecting maps, charts, plans, models, slides and instruments;
- (E) Providing for circulation to members, of books periodicals and other collections;
- (F) And by such other ways as are deemed necessary to effectuate the objects of the Association.

Membership.

4. The membership of the Association shall be open to all those who are interested in the promotion of geographical knowledge or in the teaching of geography.

5. There shall be two classes of member, honorary and ordinary.

6. Honorary members are those who shall be so elected by the council by the majority thereof present at its meeting. They shall be exempt from liability to pay subscription, and shall have all the privileges of ordinary members, except voting.

7. A person shall become an ordinary member upon the proposal by a member, the seconding by another member and approval by the council by the majority thereof present at its meeting. He shall pay an annual subscription of rupees *two* payable in one instalment or in two equal half-yearly instalments at his option.

8. Those who pay an amount of hundred rupees in two years become **LIFE MEMBERS**, and they shall be exempt from payment of any further subscriptions.

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The Journal is a Quarterly published every April, July, October and January. It contains mainly original papers read before the Association; but, it will also include articles, notes, reviews, etc., useful for the teacher of Geography.

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