REGD. NO. M 272

VOL. LIX NO. 7 || || JULY 1953

THE EDUCATIONAL REVIEW

CONTENTS

Annual Subscription, inclusive of Postage, Rs. 5.
Half yearly Subscription, Rs. 3.

14/A, SUNKUWAR ST., TRIPLICANE, MADRAS.

Foreign Subscription, inclusive of Postage, Rs. 6-

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The Educational Review

MONTHLY RECORD FOR INDIA

VOL. LIX. JULY 1953 7

Environment and Man

BY PROFESSOR T. K. VENKATARAMAN, M.A.,L.T., *Madras.*

THE relations of History and Geography* have been considered as involving two aspects (1) a static aspect and (2) a dynamic aspect. The former consists in the fact that geography furnishes history with the theatre on which events happen. It has been well remarked that "chronology and geography are the two lamps of history". The historian must know all about the region where the events happened, and realise the need for careful study of maps. It is unfortunate that map work is not given adequate attention in history classes. Historical facts are well retained in memory, only when associated with their geographical location.

The dynamic aspect consists of the manifold influence of geographical factors on history. Here, a word of caution is necessary. It is true that human actions are largely determined by environment. At the same time, we must recognise that influences other than geographical have affected human destinies. Further, we must refrain from exaggerating the influence of geography. Geographical influences may be counteracted by other influences. Again, we must carefully remember that every rule has an exception. The geographical principles that "a temperate zone furnishes the climate best suited for the development of the human race", "a fertile soil combined with mineral wealth assures material progress" or "mountains form natural lines of separation" cannot be asserted as always of universal validity. We must also bear in mind that human action might also affect geographical factors. Thus, impassable mountain chains which once kept peoples apart are now spanned by railways. The draining of marshes which once had a defensive value has not only affected war, but has increased the agricultural resources of the community. Newbegin *(Man and his Conflict with Nature)* has shown how environment can often be modified by human endeavour.

With this caution in mind, let us now pass on to analyse the many-sided influence geography exercises on human development. Bryce divides these influences into 3 groups (1) influences due to the configuration of the earth's surface, (2) influences springing from meteorology and climate, and (3) influences due to natural resources.

* **The opening chapter of Ratzel's *History of Mankind* analyses the relation between Man and his Environment. See also *Modern Geography* (H. U. L.). There is a fine description in Cole's *The Intelligent Man's View of Europe Today*, Part I.**

The configuration of the earth's surface includes the distribution of land and sea, the distribution of mountains, and the arrangement of river-basins. These have affected the size and boundary of states, growth of military and naval power and the character and extent of operations in war. Economic factors like location of cities, development of transport and growth of maritime commerce have also depended on these influences. Colonists may settle in an environment sharply contrasted from their original home, and this may result in their developing a different type of character and social organisation, as happened in the case of the colonists from England who settled in America.

A vast extent of unbroken territory favours the formation of big states. Thus, great empires grew up in the valleys of the Nile and the Euphrates. Absence of internal natural obstacles also helps racial fusion and the formation of a common nationality. On the contrary, mountain barriers destined Greece to be a land of numerous self-sufficing and self-sufficient city states isolated from each other. How expansion affected the constitutional development of the ancient city state is illustrated in the reaction towards centralised autocracy in the Roman republic. Spain and England, cut off by natural barriers from the rest of Europe, developed a political life of their own. But, England, surrounded by sea on all sides, was destined to be a naval power. The St. George's Channel is, to a large extent, responsible for the differences in race and religion between England and Ireland. On the other hand, the Rhine frontier has ever been a bone of contention between France and Germany,† as the Raichur Doab had been between the Deccan and South Indian powers.

Mommsen thus contrasts how the configuration of Greece and Italy affected their histories. The two peninsulas stand, as it were, averted from each other. Greece, hence, was forced to wage defensive wars against older civilisations like the Persian and could devote attention to internal development only later. Rome came into contact with inferior peoples, resulting in extensive conquest, world-wide empire and an imperial form of government.

The arrangement of land and water areas influences history. Phoenicia, facing the Mediterranean, dominated it commercially. England and Japan developed powerful navies, being islands. Germany bounded on all sides by other states became a military state.

In pre-historic times, natural barriers like mountains, deserts, swamps and oceans hindered or deflected the course of migrations, while river valleys and treeless plains facilitated movements. Movement of men, like that of fluids, is said to be in the line of least resistance. An open country is subject to frequent invasions as also a land with easily negotiable passes like India. Slopes and plateaus of mountain chains may form a bridge, if the surrounding country is hard to traverse. Man has only imitated nature when he built artificial barriers like the Chinese Wall or Roman Walls. A powerful empire like the Roman empire may set a limit to the encroachments of more primitive invaders. Human factors like restricted geographical outlook of primitive peoples may inhibit extensive movements. Civilised man has been described as "at once, more and less mobile than the primitive man." The bond connecting him to the soil becomes tightened as compared to primitive folk. This immobility is, however, offsetby improve-

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* **Williamson's article on *Influence of Sea Power* in the *Geographical Magazine*, July, 1942. Hearnshaw's *Sea Power and Empire* is a survey from the earliest times to the Second World War.**

† **The source of the river in the south is Switzerland. In the north are the Netherlands. It has been a river of strife.**

ments in communications like clearing of forests, building of bridges and roads and mechanical transport. This modification by human agency of the environment accompanied by an enlarged geographical horizon facilitates movement. Movement of civilised humanity, however, differs from primitive migrations, because now there is no movement of a whole people, but only of individuals or small groups. With the advance of inventions, geographical configuration ceases to be so important.

Other things being equal, the areas of states tend to coincide with geographical limits. Natural barriers protect the people, and, in course of time, breed a consciousness of unity. All attempts to set up world-empires like those of Caesar and Napoleon have failed. On the other hand, engineering skill of men and growth of easy communications may lead several geographical regions to unify within a single state like U.S.A. A natural frontier, of course, helps to defend a state. But, it may lead to internal stagnation as in the case of Spain. How geography helped the fall of an empire is well explained by J. M. Thompson *(An Historical Geography of Europe p. 11)*. "The valley of the Save and the Drave gave an easy access to the weak point in the Balkan barrier behind Trieste and to the natural way round the northern end of the Alps. By these routes, the main body of invaders entered and occupied Italy and France. Rome died under the shock." The formidable geographical barrier of the Sahara desert was impassable before the Arabs introduced the camel for transport in this region in the 7th century. Now, the desert is traversed by motor cars with caterpillar wheels. The sledge was the cheapest and quickest means of transport in the frozen wastes of Russia before the railways came. Separation of Europe from Asia is more due to historical causes than geographical. Yet, geographical factors have helped to bring about the dominance of Europe. Europe lies in the centre of the globe. It has large, navigable rivers. The mountain chains from the Pyrennees to the Carpathians separate the waters flowing into the Atlantic, the North Sea and the Baltic from the rivers flowing into the Mediterranean. The most important of these, the Rhine, is the greatest waterway of Western Europe.

The Mediterranean played a very important part in history. Egypt, Phoenicia, Greece, Rome—all controlled it in turn. Later, Venice and Turkey contended for its mastery. Its economic importance as the waterway of Eastern Trade enriched the great cities of Italy. This importance declined when the Cape route to the East was discovered; but was restored after the Suez Canal was opened. Crete, in the centre of S. E. Mediterranean, controlled the great waterway north to the Black Sea and the Danube. Hence, it was held in turn by the Phoenicians, the Persians, the Greeks, the Romans, the Saracens, the Venetians and the Turks. Sicily, in the centre of the Mediterranean, was held in turn by Carthage, Greece, Rome, the Saracens, the Normans, Anjou and Aragon. British interests in the Suez Canal, important link in the seaways between Britain and the East, keep up tension with Egypt.

The saying that "Egypt is the gift of the Nile" is very true. The land is practically rainless. It is the Nile which forms the sole water supply. From the earliest times, Egyptian farmers depended on its annual flood which, not only provided water for irrigation, but left behind rich deposits of fertile mud. As we see from the Bible, there was always "corn in Egypt" even when lands near were racked with famine. The Nile valley has wonderful facilities for perennial irrigation, and very little water is allowed to reach the sea.*

* This explains why Egypt is anxious to retain control of the Sudan.

In nothing else is geographical influence more evident than in the growth of towns. The defensible character of the hill or hills on which they were situated led to the importance of Athens, Rome, Edinburgh and Heidelberg. This defensive advantage was increased if a river flowed at the foot of the hill as the Tiber does at Rome. Warwick, Shrewsbury, Durham, Stirling, Blois and Belgrade originated as hill forts on river banks. A fork at the junction of two rivers may have also defensive facilities, besides advantage for trade. Examples of towns of this character are Oxford, Carlisle, Amiens, Turin, Ghent, Seville, Leipzig, Prague and Adrianople. Constantinople, Syracuse, Naples, Marseilles, Cadiz and Venice shared both defensive and commercial advantages. Situation at the confluence of the chief river of France with its chief tributary helped Paris. Situation at the head of a navigable river gives great commercial facilities, as we see in the case of London on the Thames, Liverpool on the Mersey, Nantes on the Loire, Hamburg on the Elbe and Stalingrad on the Neva. A ford or a bridge forms the origin of several towns like Bedford, Bruges and Innsbruck. Junctions of important roads led to the rise of towns at these points like York, Perth, Nancy, Liege, Berlin and Milan. Important ports develop into great towns. Bordeaux, at the mouth of the Garonne, dates back to the time of the Romans. Rotterdam at the mouth of the Rhine is the chief port of Holland. Lisbon on the estuary of the Tagus is built on a series of hills and has a magnificent harbour. Antwerp is the only large seaport of Belgium. Istanbul has a magnificent harbour in the Golden Horn. The wide anchorage between the Piraeus peninsula and the island of Salamis provided Athens with an excellent harbour. Man has improved on Nature in the provision of harbours. Glasgow and Madras are instances of artificial harbours. The old harbour of Pisa, like that of Aquilea, became silted up, and hence developed the artificial port of Leghorn. Genoa commands convenient passes across the lowest and narrowest part of the Apennines. But, there are other towns whose importance like that of Jubbulpore developed only after the coming of the railway.

The climate of a region indirectly affects human development by its effect on the soil and its fertility and directly may affect human health, physique and even mental character. No great state has appeared in the Polar regions. It is generally true, though not absolutely true, that climatic extremes do not favour higher forms of state-life. All great empires rose at first in comparatively warm climates where Nature yielded food in abundance and left man with adequate leisure. Many believe in a definite correlation between sun-light and the colour of man. If so, climate has some influence in the physical make-up of man. The influence of climate on the character and history of mankind was recognised for the first time by Plato and Aristotle. But, the subject was worked out in detail only by Bodin, the first modern writer to investigate the question. He separated mankind into *three* groups: (1) the Northern Peoples who, according to him, excel in bodily and physical strength. Fighting capacity is their chief quality: (2) the Southern Peoples who are masters of craft and genius. They delight in philosophy and abstract speculation: (3) the Middle Peoples. These combine the special virtues of the other two and are thus best adapted to control government. Bodin discusses how geographical conditions influence bodily strength, courage, intelligence, even chastity, in short, the morals and manners of mankind. He formulated a number of laws which are open to question like his belief that national characteristics varied according to latitudes. Montesquieu in his SPIRIT OF LAWS elaborates further on the subject in greater fullness and tries to explain variation of manners, creeds and forms of government on a supposed theory of a

Doctrine of Climates. Forms of government resemble plants. He, however, avoids the emphasis laid by Bodin on differences of latitude and longitude and stresses differences of temperature, moisture in the air and fertility in the soil. But, in this process, he also laid down maxims of doubtful validity that the spirit of energy and activity of colder climates favoured the development of constitutional liberty and that the spirit of indolence in warmer regions led to slavery and autocracy. He ascribed to climate the chief influence in determining the character of the people.

We may, however, recognise that climate has some influence on human development, though, here also, it is possible for man to rise above the limitations of his environment. The temparate climate of Europe ensures that there are few areas where men cannot work in the open air all the year round. The warming effect of the warm surface water of the Atlantic north-eastward makes the Norwegian ports function all the year, while the corresponding Swedish ports on the Baltic are closed for 5 months in the year owing to ice. No city in Spain is more favoured in climate than Granada (the old Moorish capital). The breeze from the snowy Nevada moderates the hot summer. The Sahara is the largest desert in the world and the primitive folk of Central Sahara –the Tuaregs– live in tents, moving from place to place and covering their faces with veils as protection against wind-blown sand. Yet, the Sahara has subterranean sources of water supply and the dream of scientists is to tap it and convert the desert waste into smiling fields.*

When migrating, the group usually selects for settlement an area the climatic conditions of which are more or less similar to that of their last abode. Miss Semple remarks (INFLUENCE OF GEOGRAPHICAL ENVIRONMENT) that the modern colonial movement has shown a tendency to adhere not only to the original zone but also to follow the same parallels of latitude. A notable exception, however, is European colonisation of the Tropics. But, this colonisation is more a commercial and political movement rather than a migration to new homesteads, and the European settlers here formed only a small, ruling class of officials, clerks, soldiers and commercial agents, along with some missionaries.

With the growth of education and control of environment by man, peoples living in lands of climatic extremes may develop like others. Forestry, draining of marshes, use of clothing, artificial shelter, deliberate breeding of flora and fauna and use of power are devices to overcome climatic handicaps.

Natural resources include extent of arable land, forests, fisheries, animal and plant resources and mineral resources. These geographical resources influence human development.

In primitive times, movement of population is due often to the fact that increase of population leads to a dearth in food supply. Hence wanderings over extensive areas in search of food take place. In savage hunting communities, the animals sought after may have become scarce owing to overhunting or disease. People living in relatively poor regions like steppes or plateaux are attracted to neighbouring cultivated regions or valleys. Forest area may be abandoned owing to the difficulty of clearing trees with the rude implements then used. A pastoral people would prefer regions which afford sufficient pasturage and ample supplies of water for their flocks. Land is now valuable only as grazing ground. When one

* The Eskimo developed fat to help him to withstand cold. His food comes mainly from the sea or hunting, as no vegetable food can be grown.

pasturage is exhausted, the people move to another. This nomadic life later gives place to settled existence when agriculture is known. At first, the whole land belongs to the tribe. Conception of private property in land is a later development. The domestication of animals marks a big step to a more complex organisation. Absence of animals fit for domestication explains to some extent the comparative backwardness of the American Red Indians and the "Blackfellows" of Australia. The character of the animal used also influences human organisation. Medieval feudalism would never have developed its characteristic form without the horse. Development of sheep-farming in England in the later Middle Ages and in the 16th century caused serious changes in English society. The seal supplies the Eskimo with food, clothing, light and many tools. Rich fisheries played an important part in the formation of the Hanseatic League, rise of the Netherlands and the development of New England. The modern woollen industry of Yorkshire is not only helped by the climate of the area and means of transport but also by abundance of fine wool. The development of the Amazon Valley is hindered by dangerous and destructive insects like fever-spreading mosquitoes and ants whose bite causes nasty wounds, by giant snakes like the anaconda and by dangers in the water due to alligators and electric eels. Late in the 15th century, wearing of silk was introduced into France from Italy. Now, Lyons supplies the world with silk goods. This old city (founded in 560 B.C.) is now the most important manufacturing town of France.

Vegetable resources have always been important. The earliest civilisations naturally arose where there was lavish supply of grains like rice. "The great empires of Egypt, China, Babylon, India, Mexico and Peru developed in natural granaries." The Spice Trade with the East was the cause of the political importance of Venice. Rubber, originally found in the Amazon Valley, has been transplanted to Malaya, Ceylon and other lands, and plays a great part in international politics. Bluntschli noted that a barren soil is not favourable to development, and a very fruitful soil may promote indolence.

Mineral resources have been so important in early history that stages of culture were named after them e.g. Stone Age, Bronze Age, Copper Age and Iron Age. The victory of peoples armed with metal weapons over those with stone weapons had affected the political history of these early times. When gold and silver become standards of value, the possession of these precious metals was so much valued that search for them was, often, the prime motive of early explorations of America. Spain dominated Europe in the 16th century through her control of the precious metals brought from her American conquests. In the modern period, deposits of coal and iron became the lever for industrial supremacy and political power e.g., the industrial supremacy of England in the 19th century. Japan is rich in minerals, especially coal, copper and kaolin. Her extensive deposits of sulphur form the basis of a prosperous match industry in towns like Tokyo and Osaka. Some places, though not production-centres of commodities, may specialise in the manufacture of such commodities e.g., Amsterdam has a specialised industry in the cutting and polishing of diamonds.

A New Hope for the Arab World

BY A. HURBLI

GOVERNMENTS and organizations which are developing educational programmes to help people denied adequate training in the skills of effective living, stand in urgent need, first, of teachers and leaders trained in techniques and methods different from those of formal education; secondly, of suitable educational material for teaching literacy and for basic instruction. The training of these teachers and leaders and the production of model materials must be based upon scientific research.

Recognizing these facts the General Conference of Unesco, at its fourth session, authorized the Rector-General "to co-operate with Member States in the establishment of Regional Centres for the training of teachers and workers and the production of materials for fundamental education." The first Centre was opened at Patzcuaro, Mexico, in April 1951, enrolling students from nine Latin American countries (Bolivia, Costa Rica, Ecuador, Salvador, Honduras, Peru, Guatemala, Haiti and Mexico). Subsequently, two committees of experts produced a general report recommending the setting up of a world network of Fundamental Education Centres. The General Conference at its sixth session in Paris, June 1951, approved the report and authorized the establishment of a second Centre in 1952. Egypt offered to be the host country and on 25th April 1952, an agreement was signed between the Egyptian Government and Unesco to establish a Fundamental Education Research, Training and Production Centre at Sirs el-Layyan.

Sirs el-Layyan is located in the centre of the Menouf district about 65 kilometres north of Cairo. The population of the district is about 300,000 and its area approximately 365 square kilometres, with a density of population of 819 per square kilometre. Situated between the two branches of the Nile, the Damietta branch to the east, and the Rosetta branch to the west, it is one of Egypt's most fertile regions. Within this district there are 18 social centres conducted by the Ministry of Social Affairs, 18 new type rural schools controlled by the Ministry of Education and 6 health units. Sirs el-Layyan itself, is about 4 kilometres from the town of Menouf, administrative centre of the Menouf district. In 1946 it was selected as the site of a community development project of the Egyptian Government. The plan was to develop Sirs el-Layyan as a model experimental area in which a combined attack on ignorance, poverty and disease was to be conducted by the Ministries of Education, Social Affairs, Health and Agriculture, with the Ministry of Trade and Industries co-operating in the development of local industries.

The buildings erected for educational aspects of the Egyptian Government's project now house the Unesco Fundamental Education Centre. In addition to these buildings the Egyptian Government provides vehicles to take staff and students to the various villages in the area, the wages of domestic staff, and an annual grant for maintenance. Funds for the operation of the Centre come from the normal budget of Unesco and from the Unesco Technical Assistance Programme. The co-operation of the United Nations and the other Specialized Agencies has been promised.

The following Member States of Unesco were invited to participate in the new Centre: Egypt, Hashemite Kingdom of Jordan, Iraq, Lebanon, Saudi Arabia, Syria. Following a request by the United Nations Relief and Works Agency for Arab Refugees from Palestine, students from among these refugees have also been admitted.

The functions of the Centre could be briefly stated as follows:

To train leaders in fundamental education;

To prepare model fundamental education materials, especially adapted to the needs, resources and cultural levels of local communities;

To provide technical information based on research carried out in the Centre to field workers engaged in fundamental education or employed in preparing educational material in the different Arab States with a view to promoting fundamental education in those countries;

To give special training in the techniques of preparing and using these materials.

The Director of the Centre was appointed in June 1952, and took up duty in September. Unfortunately Unesco did not long benefit from his services as he was recalled in December 1952 to become Minister of Social Affairs in the Egyptian Government. The deputy director was appointed acting-director and is carrying out his task with great energy and deep educational insight.

The recruiting of an international staff of specialists, in co-operation with the United Nations Organization and its Specialized Agencies, and the recruiting of the trainees from the participating states started immediately after the appointment of the Director.

Recruited by their governments with the assistance of a fundamental education programme specialist from Unesco, the trainees were so selected as to from teams in which each member specialized in a particular aspect of fundamental education; women were included in the teams. All the states sent students except Saudi Arabia which was not ready this year.

In the selection of trainees the follwing qualifications were sought:

Residence in rural areas;

Possession of a basic education equal to the education of the best teachers of the state concerned;

Adequate knowledge of rural problems of their country;

Several years of experience in rural education;

Specialization in one area of fundamental education;

Signs of potential leadership such as strong personality, organizational ability, power of persuasion and ability to disseminate ideas without imposing them;

Interest in the welfare of rural people—a rural missionary spirit;

Fluency in Arabic (some trainees are from non-Arabic-speaking areas);

Some knowledge of a foreign language—English or French;

Maturity: age 25—40,

By the end of October 1952, the selection of the trainees had been completed. Among them there are teachers, school directors, village welfare workers, nurses, agriculturalists, and economists; the subjects in which they will specialize include: home economics, literacy teaching, agriculture, social work, health, rural economy and recreation.

The total enrolment of trainees in 1952 was limited to 50, the present capacity of the facilities made available by the Egyptian Government. A substantial increase in number is anticipated in September 1953, as the Egyptian Government has promised to begin the immediate construction of additional dormitory facilities for a total of 150 students. It is hoped that the number of students in 1954 will be 200. Of the initial 50 places made available in 1952, 20 were allocated to Egypt in view of the fact that Egypt has a greater population than all other participating states, that Egypt sends fundamental education workers to other Arab countries and that the Egyptian Government is providing facilities and contributing money toward the expenses of the Centre.

The recruiting of the international staff has not yet been completed for several reasons, in particular, a shortage of international experts who are familiar with Arab culture, who speak Arabic, and who are qualified for work at the Centre. As for Arab specialists they are fully engaged in education work in their own countries and very few can be released for duty at Menouf. The Centre is operating now with about one-third of its staff. It is awaiting the arrival of the specialists in health, agriculture, home economics, home industries, community organization and rural housing, who are to be appointed by the Specialized Agencies.

The physical facilities—the living quarters, furniture and vehicles—were ready in the first week of January. The Centre has now one bus, three station wagons and one sedan. There are administrative offices, a stall office, a large lecture room, a production unit, a well organized library, men's and women's dormitories, a restaurant, a staff and trainees' club, and store-rooms. The Centre has the use of a large auditorium which is near the library and which belongs to the Ministry of Social Affairs.

Before moving to Sirs el-Layyan the Centre began work in Cairo with 48 trainees distributed as follows:

	Number of Trainees		
	Sex		
Country	Male	Female	Total
Egypt	16	4	20
Iraq	5	2	7
Jordan	5	1	6
Lebanon	3	2	5
Syria	3	2	5
[Palestinian Arabs]	3	2	5
Total:	35	13	48

This was an orientation period which lasted 15 days. Its aims were to acquaint the trainees with the meaning and philosophy of fundamental education and with the objectives of the Centre. The trainees attended lectures given by prominent leaders in education, social work, health, and agriculture, among them, ministers and ex-ministers of the Egyptian Government. They participated in group discussions led by experts, visited various educational, social, agricultural and health institutions, and saw fundamental education films.

On 6 January, the Centre moved to Sirs el-Layyyan. The first task was to plan the programne. It seemed to the director and his staff as well as to the trainees that this should be a co-operative enterprise and the responsibility of all, and trainees were given ample opportunity to discuss the programme in the light of the present and future needs. Staff and trainees decided that they should first help with the work of installation; at the same time they wanted to exchange experiences, report on what they hed been doing in their own countries and acquaint themselves with the district of Menouf. They therefore formed various committees to deal with questions related to the buildings and grounds and the community life in the Centre. They washed windows, cleaned rooms, rolled the ground, planted the campus. They organized panel discussions and contributed their own knowledge in the fields in which the Centre is working: literacy, health, rural economy, home industry, social work, home economics and recreation. They invited specialists from the district to talk about the conditions of life in Menoufia, geography, demography, social services, agriculture, health, education, etc., and visited various social and educational institutions in the area. They organized entertainment programmes in the evenings. They visited in the neighbourhood and received warmly the people who came to welcome them.

The Centre was officially opened on January, 20, 1953, by Premier General Mohammed Naguib and Dr. R. W. Taylor, Acting Director-General of Unesco, at a ceremony which was

attended also by the Minister of State, the Ministers of Education, Social Affairs, Agriculture, Religious Foundations and Municipal and Rural Affairs, representatives of the Arab States and Specialized Agencies of the United Nations, and members of the Unesco secretariat.

The inauguration began with a reading from the Koran, after which speeches were delivered by the Minister of Education, the Minister of Social Affairs, the Acting Director of the Centre, Premier Mohammed Naguib and the Acting Director-General of Unesco. Emphasis was put in these speeches on international co-operation and good will, the value of the Centre to Egypt and the Arab World, the full support of the Egyptian Government and its great faith in the Centre, the collaboration of the Arab States, the quality of the trainees selected, and the successful start which the Centre had made. Warm gratitude was expressed to Unesco and other Specialized Agencies of the United Nations, to the Government of Egypt, to Mr. Torres Bodet, former Director-General of Unesco, and to those who contributed towards making the Centre a reality.

Since the inauguration, trainees have begun a course on the use of documentation in scientific reasearch. This is meant to teach the trainees how to use the library, how to read effectively and how to write a report. Another course will teach elementary principles of sociology, giving general guidance on methods of studying a community, and helping the trainees to understand the people with whom they will be working. Simultaneously with this theoretical study the students will carry out practical field work.

The last phase, as it has been planned, will consist of working in teams. It has already been explained that the students were selected in national teams. These have been broken up into 4 international groups selected on the following basis: first, each member is specialized in one field of fundamental education and secondly each group has members from each participating state. These international teams will go into villages and, under supervision, interview villagers and make house-to-house and family-to-family surveys of all phases of rural life. Later on the teams will be stationed in the villages assigned to them.

The Centre has been recognized as an institution of decisive significance to the educational and social welfare programmes of the Arab States. In his speech on inauguration day the Egyptian Minister of Education said: "Is there any defect in our life in more urgent need of remedy than the state of backwardness and misery in which the masses of the Arab countries live, because of ignorance, poverty and disease?" Fundamental education can provide these masses with health education to combat endemic diseases and introduce better sanitation and hygiene: teach agricultural extension and the conservation of natural resources; raise the level of production, home economics and housing; foster the development of rural crafts and small industries, thus providing alternative means of livelihood and sources of income for the community; teach the people to read and write, giving them access to wider knowledge; and help them to develop their own culture and to make creative use of their leisure time.

The functions of the Centre have already been summed up under four heads: studies and research, production of educational materials, training of students and assistance to fundamental education throughout the Arab World. The programme is being planned in such a way that the three divisions: research, production and training, will work in close co-operation. The research division will provide sound information as a basis for the activities of the production and the training division. It will collect and analyse information necessary for the field work of the trainees in the district of Menouf and in their own countries.

The director of the Centre and his staff firmly believe that a worker in fundamental education who cannot understand the way of life of the community he wishes to serve cannot expect success. Fundamental education workers cannot work without teaching material and this is very scarce in the Arab World. Books, films, filmstrips, posters, charts, radio programmes, etc., that have been made for children will not do; adults need educational materials suited to their needs. The production division will produce prototypes adapted to the culture of the community for whom they are intended, seeking guidance from continual testing and observation of the response of the people for whom the material is made. The training division will teach the students to see the tasks of fundamental education as a whole. Although each trainee will specialize in one branch (hygiene for instance, or literacy work or agriculture), he will learn to be something of an "all rounder" in the team. He will also learn the various methods of conducting fundamental education programmes and how to adapt these methods to different communities. In developing methods for education in the Arab States, the Centre must also demonstrate the practicability of these methods.

When they have completed their training, the students will return to their countries well equipped to assist in carrying out those programmes of fundamental education on which the Arab States are now embarking on an increasing scale; some of these activities are already associated with the normal programme of Unesco, some undertaken through the Technical Assistance programme of the United Nations, some started independently by governments and by national or international organizations. The Centre will co-operate with all, exchanging information and sending export help when needed. It is interesting to note that when the trainees return to their own countries they will continue to work as a team.

The establishment of the Arab States' Fundamental Education Centre has indeed created a keen interest not only in fundamental education, but also in the Unesco programme in general, among people from various walks of life. The Centre will not only generate power to improve living conditions in the Arab World, it will also foster international co-operation and the will for peace.

* *Article supplied by Unesco's Education Clearing House.*

Adult Education — An Australian Experiment

BY MARJORIE THOMSON

THE University of Sydney Tutorial Department works in conjunction with the New South Wales Municipal Library Board in Sydney to encourage adult education in country centres and in the outlying metropolitan areas of the city.

By means of a "kit" book system designed for unsupervised study by groups or individuals, people in outback centres have the opportunity of studying subjects ranging from astronomy, history and music to home decoration.

The system began as an experiment in 1946 after a tour of the outback country of New South Wales by Miss M. Godfrey, a senior staff tutor at Sydney University. She found that people in the isolated country districts wanted to gain knowledge and tackle new subjects, but did not know how to go about studying the subject or getting the material.

So a system was introduced whereby study guides for various subjects were drawn up by experts who wrote simple, clearly illustrated explanations dealing

with their specialised subjects. These pamphlets take the student step by step through the full course giving detailed information on the important points of each phase of the study subject.

The Sydney University supplies the first master kit containing the illustrated pamphlets and the Sydney Municipal Library, which is subsidised by the New South Wales State Government, supplies the books needed for the course. Up to 30 to 40 books usually comprise a course.

Thirteen different study kits are available. These include astronomy, history, music, home making and decoration, writing, reading and literature, play-reading and criticism and art. There are travel kits dealing with the United States and China and giving an outline of the countries' history, geography and economy. Another special kit has been prepared on the co-operative system which operates in some areas in Australia and there is also one on economics.

In April 1953, there were 85 study groups throughout the State of New South Wales. Seventy per cent. of these were in the country areas. The groups each had an average of 10 to 15 members who met once a week or fortnightly.

The attractively produced material is planned as a progressive study programme. Consequently, a new member may join a group at any time. Each pamphlet in a kit is designed to cover one night's study.

The Tutorial Department of Sydney University keeps in touch with members studying art and astronomy to check progress.

New Education Scheme—Pros and Cons.

THE view that the new elementary education scheme would make children realise the dignity of manual labour was expressed by Mr. C. Rajagopalachari, Chief Minister, addressing a symposium organised by the Madras Teachers' Guild on the 2nd of July.

Replying to the various criticisms levelled by speakers at the symposium which discussed the new education scheme, Rajaji put in a vigorous defence of all aspects of the scheme and appealed for all-round support in its implementation.

Guild Chief Explains Teachers' "Fears"

Mr. P. Doraikannu Mudaliar, President of the Guild, welcoming the Chief Minister, Education Minister and others, recalled that the Provincial Conference of the Guild was held in 1937 when Rajaji presided over not only the conference but also the Subject Committee deliberations. The conference then discussed problems relating both to elementary and secondary education. They had looked to Rajaji for sympathy and for ameliorating their lot and condition.

The symposium had been organised, he explained, so that teachers in the City might have an opportunity to listen to the Chief Minister.

Mr. Mudaliar stated that the re-oriented scheme of elementary education was no longer a matter of controversy with them. "We, the teachers, have appreciated its ideals and the ideology behind it. But, in some of our conferences and meetings, we only tried to envisage the possible difficulties in its actual implementation. We are well aware that the new scheme has certain very sound educational ideals—for instance, primary education is made less book-centred; secondly, children are not made to sit in the schools for longer hours; thirdly, children are made to recognise the dignity of work; fourthly, children are given an opportunity to learn simple manual

labour and, fifthly, children are given an opportunity to help their parents in their work wherever possible."

"These principles are," he observed, "sound and should be and can be incorporated in any scheme of primary education, new or old. In fact, given the facilities and encouragement, all these principles and ideals can be fulfilled even in the framework of the existing elementary education scheme."

Explaining why teachers' organisations were doubtful and hesitant about the scheme, Mr. Mudaliar referred to "some of the fears" in their minds. In a democratic country, he stated, no scheme of education should be introduced without careful investigation and planning. In the present instance, the confidence that people had in Rajaji and his love for the country might give the people an assurance that no harm could result from the scheme. But the hasty manner in which the scheme had been introduced created a fear of possible hasty changes in the future. Teachers, the Chief Minister had stated, were conservative and as such they naturally did not like hasty measures.

Mr. Mudaliar added that the scheme spoke of apprenticeship for children of the ages 6 to 11, if the parents could not engage them in any occupation. Teachers and parents would hesitate to accept this as sound in practice or in principle. Conditions greatly varied from village to village and there were serious difficulties. Teachers were of opinion that the question of apprenticeship needed very careful examination.

Arrangements by which children would have three continuous hours of academic teaching without any break for recreational activities might prove to be strenuous for children and teachers. It had to be carefully considered whether the teacher could work efficiently for six days with two sets of students for three continuous hours of teaching. On the other hand the teachers were aware that with the limited financial resources of the State, the spread of primary education was bound to be slow unless there were more buildings and teachers.

Mr. Mudaliar pointed out that there was fundamentally very little difference of opinion as far as the scheme was concerned. The teachers appreciated the change, but it was the manner in which the scheme had been enforced and particularly, the suggestion for apprenticeship of children that had raised protests from children and parents. Teachers and parents would like to be assured that the changes proposed were practicable and that the possible errors that might result from any action might not affect the future generation adversely. "We crave Rajaji to allay our fears. This symposium is not merely to enlighten us on the new scheme of elementary education, but it is primarily meant for us to understand how best the scheme can be implemented in the hundreds and thousands of elementary schools."

Minister Explains Need For Change

Inaugurating the symposium, Dr. M.V. Krishna Rao, Education Minister, said the proposed scheme was only the "beginning of an attempt to tackle the foremost problem that faced the country."

Educational reform was primarily a matter for teachers to implement and to develop and, therefore, he was particularly happy that the Madras Teachers' Guild had organised the symposium, he added.

Reminding the teachers of the statement he made in the summer of 1952 when he was before the Teachers' Conference in Coimbatore that they might not expect anything in the nature of a spectacular change immediately, Dr. Krishna Rao said there was a fear that several hasty measures might follow the "hasty change." All changes looked hasty at times, he added.

"But it is not contemplated on our side to be implemented in haste. This is only an attempt, nay, a beginning of an attempt to try to tackle the foremost problem that our country is faced with—the problem of providing elementary education of proper sort to every child. That problem has been before us for many decades, and it becomes urgent in the present context after the attainment of political freedom. Today, we have the privilege of having in our midst our great and esteemed Chief Minister who is a great inspiration in regard to educational reforms."

The Minister said he only wished to point out that the limitation of school attendance by children at the elementary stage to three hours was calculated to improve them educationally and help them educationally and help them in every manner for the development of their full personality. It could also further universal elementary education with their present resources. There was the broader aspect of how to utilise, to the best advantage, the time that was available during the day.

The Minister pointed out that the fundamental principle was that education should be taken to every child in the country, irrespective of his or her status and place of residence. They had also to give to the craftsmen, who had been neglected, and the skill of labour, which was still surviving, their rightful place in the process of education. They had a gap between the skill that had been inherited in the country and the educative process.

The Minister made it clear that the child would not unnecessarily be compelled in any manner to take to the same profession as the father, much against his instinct or natural aptitude. It was not also intended to discriminative between different people.

"TOO IDEALISTIC"

Prof. M. Venkatarangayya said he welcomed the new scheme as a whole, but offered "certain friendly and constructive criticisms." He welcomed the scheme but he was afraid that there was so much of idealism imported into it that, in course of time, one was bound to be disillusioned.

Explaining the reasons for his welcoming the scheme, he referred to the Directive Principle in the Constitution according to which there should be free and compulsory education for all children within a period of ten years. There was also the Five-Year Plan. It was calculated that the cost of compulsory education would be Rs. 300 crores which was 75 per cent of the income of the Central Government. In the present state of finances, it would not be possible for them to introduce and work the scheme of education which cost so much. That was a great problem which practical statesmen like the Chief Minister had to face, and they had to find some device by which it would be possible to carry out the ideals in the earliest possible time. It was merely more or less as an emergency scheme that the new plan had been produced. He wanted that more pupils should be educated. Only 40 per cent of the children between the ages of 6 and 11 were now going to schools, and only 17·6 per cent of the people were literate. As to the best way in which they could utilise their finances so that they could get the maximum amount of benefit in the matter of universal education, the new scheme was "a great step," he said.

Though the scheme had been introduced in rural areas, there would come a time when it had to be extended to urban areas, Prof. Venkatarangayya added. The scheme aimed at an increase in the number of pupils attending schools without extra teachers, extra buildings or equipment. If, by some way, it was possible for them without spending more money, to double the number of children attending the schools in the next few years, "then we should welcome that scheme, and I welcome the scheme primarily for that reason."

Referring to objections raised on the ground that the same standard might not be maintained as at present if the school hours were reduced to three in rural schools, Prof. Venkatarangayya said there was no difficulty whatever so far as the maintenance of the standard was concerned. He had some first-hand knowledge of the way in which the schools were run in villages. He complained that village teachers were dull and sleepy but the school curriculum included a large number of subjects in which teachers were not interested, much less the boys. The reduction in the school-hours to three would not result in any deterioration in the standard.

Prof. Venkatarangayya pointed out that there were certain fallacies underlying the various reasons given by the supporters of the scheme which he wished to point out. It had been pointed out by framers of the scheme and by a large number of spokesmen that the system of education in the country suffered from two serious defects; that it did not teach the dignity of labour and that all took to education in order to get Government jobs.

He wondered what connection there was between the education of children between the ages of 6 and 11 and the question of dignity of labour or Government jobs. There was also a great fallacy in saying that the children could spend two or three hours of their time in the company of craftsmen, agriculturists and so on. Due to various reasons, basic education had not made much progress.

Craft-learning was a very impracticable proposition. The present decaying condition of the village industries should also be taken into consideration, he added.

As the State had no money and resources, it could adopt the present system to increase the number of children going to schools and Government could say this was an emergency measure. From that point of view, he welcomed the scheme and wished it godspeed.

RAJAJI'S SPEECH

The Chief Minister said that he was glad and thankful for the critical observations made by the President of the Guild in his welcome speech and also for the straight criticisms offered by Prof. Venkatarangayya. Prof. Venkatarangayya, the Chief Minister felt, was needlessly believing that he would make counter-criticisms to what he was going to say on the changed routine in their elementary education. Many of the things that Prof. Venkatarangayya had said were quite correct, but everything depended upon the emphasis laid on any particular matter. Whether about the points about the new scheme of elementary education in which Prof. Venkatarangayya believed or those which he criticised, he laid the emphasis in a somewhat different manner from the way in which the Chief Minister himself would like to have it laid. Whatever it was, there was no great point in carrying on a controversy about it now. They were all today interested more in finding out how to work the scheme rather than in carrying on an academic discussion as to what was right and what was not.

Rajaji said: "Doubt springs eternal in human breast, said somebody who parodied an older phrase which said: 'Hope springs eternal in human breast.' But someone parodied it probably cynically in this manner and I think Prof. Venkatarangayya is proving that proposition to a large extent. We are all full of doubts and we will never be satisfied till after the event. That seems to be the fate of all human endeavour; whether a thing attempted will turn out one way or the other, we have to wait till the whole thing is done before we can say correctly. Nothing has been done in this world where one could have said: 'This will produce that result.' After everything is done, the story can be summarised. Let this change that has been introduced in the elementary school

routine share that general fate of things. Let things be done and we will then see what has been done and what has followed.

"Prof. Venkatarangayya himself had referred to the several previous schemes on secondary education, the previous Matriculation scheme and the University scheme itself and all that was said by Lord Macaulay and others in favour of these schemes. All these things follow the same law that we must wait in human life to find out what exactly followed from what we did. It was very much like our weather forecast whereby we all knew the weather only after the weather was on us. I shall not dally longer on this philosophical proposition; I only said all this to show that I am not displeased or disturbed by doubts expressed. It may very well be said we anticipated all these doubts."

The Chief Minister said he was glad to be reminded of the conference of teachers held in Tanjore some 17 years ago, the discussions they had then, the emphasis that had to be laid on education in the secondary stage and the like and the fervent manner in which Fr. D'Souza appealed that they should not neglect humanities in their craze for science. As a matter of fact, in the Subjects Committee discussions at the conference, they all thought that they should have more emphasis laid on science than on other subjects. "If then, 17 years ago, I dabbled in educational matters, I may say that I am not quite so hasty as I was called by your President," added the Chief Minisser.

"Well, I want to carry the battle a little more vigorously against Prof. Venkatarangayya. Fifty years ago, there was an educational conference in Salem when I was only a gentleman at the Bar. Somebody will tell me exactly the year because it was the time when Mr. Khershaw was in the Educational Service. I was asked by the Headmaster of the London Mission High School in Salem to read a paper. I was then not a politician, only a young lawyer and, in spite of my saying that I did not know anything about this matter, he insisted. He perhaps over-appraised me and said that I could speak on educational matters. I chose then "Leisure Hours" as the title of my paper. It was a short paper and I should hardly call it a paper in these days.

THE CHILD'S PROBLEM

"It was a short talk that I gave. I said that boys should be taken to excursions and I also laid stress on a negative thing. I said: 'Do not give home exercises to be done when the boys get out of the clutches for some little time.' Everybody thought that it was a mere amusement, but it was very serious. I had seen and felt the bad effects on the child's mind when loaded with these problems of how to discharge the debts, so to say. So far as the young children are concerned, they deal with this problem of home exercises in much the same manner as older people about the debts they owe. I had no doubt in my mind that the child burdened with home exercises is as miserable as a man burdened with debts in life, and it is wrong to bring up the child in that psychology. I laid stress on that negative fact and I repeat it here for this reason: that one of the important things that should be remembered in the implementation of this scheme, right or wrong, is not to give home-sums or home exercises. If you do that, you ruin my plan and the Education Minister's plan! You cannot send away the child with a burden of work to be done during the period when the children are out of your clutches. If you do that, you commit treason against the present scheme!"

The Chief Minister recalled that one enthusiastic supporter of the new scheme had even gone to the length of suggesting that teachers, who burdened children with home exercises to be done during their leisure hours, should be dismissed straightaway. He might not agree with

this, but he was convinced that the harm done to the child was great and the harm done to the scheme was also complete sabotage. Therefore, it should not be done. The Chief Minister was sure that Prof. Venkatarangayya would agree with him at least here. (laughter).

Rajaji said: "This is not a matter for laughter, my friends! I have seen private teachers being engaged by ambitious parents to worry the child as soon as he returns home from school and I have also seen the private teachers in their turn leaving sums behind. Where is the second home for the child to go to for doing these sums? The whole thing is ridiculous. It only shows how our brains have been blurred temporarily by the competitive system of education. You see now suicides being committed; you see murders being committed, thefts being committed, boys telling lies to the examiners that they know and have taken part in games like football and cricket when they actually do not even know how many go to make a football team! This competition begins at the earliest stage in our system, competition in the worst sense.

"I may tell you a number of stories from my own experience. The first day that I went to the school—because I skipped over all the first five years of education that are now the subject matter of dispute—I went straight to what was called the First Class which was the second class below the First Form. On that day, a question was put to the boys and, although some of the other boys were grown-up ones and I only a toddler, they did not answer and I answered. I was then asked to go up in the class and the others to go down, just to demonstrate the disgrace. Then, in clear Telugu (which I still remember) those boys roundly abused me on the first day I went. That is the direct result of the system of educational competition. Prof. Venkatarangayya will not tell me that these boys were innocent boys who had no ideas at all about securing Government jobs. From the earliest stage onwards, there is that job-seeking idea at least in the minds of the parents who put children under the modern system of education. It works itself like that into the child's mind also", added Mr. Rajagopalachari.

Even in the speech delivered nearly 50 years ago, continued Mr. Rajagopalachari, he had advocated that boys should be taken out by the teacher in groups to the village potter, the village blacksmith, the barber and the dhobi, so that they could watch how these artisans worked. The Chief Minister confessed that he himself, during his boyhood, had spent innumerable hours watching the potter making his wares. There were a number of educationists at that conference and the news about his speech went abroad.

Rajaji said that later on Mr. Nelson Frazer, who was the Principal of the Training College at Bombay, requested him to contribute some articles for his journal on education. He wrote one or two articles, in all of which he espoused his theme that it was of great advantage to education to take children to places where the artisans worked so that they might be encouraged to observe and take part in those works. "Whatever may be the defects of this scheme, this is not a matter of haste. That is one thing that I should like to clear first," he said.

THINKING & WISDOM

Rajaji continued: "But it is not for me alone to have thought about it for a long time. The point is that every body else must have thought about it and teachers should be given notice; they must discuss. I agree all these things could be done. But there is no time in these days of hurry. In those days, we walked slowly; I collected subscriptions on foot for khadi in those days. Nowadays, even for collecting money for the local school, you need a motor car. They have got much less time now and things

have to be done. There are certain things which we have to attend to under the Constitution. Further, much thinking does not necessarily result in much wisdom. What I mean is—speaking in a mathematical way—the amount of wisdom is not in direct proportion to the time spent on thinking. The two things are totally different. Therefore, I do not know if we would have got much wisdom or more and more of doubts."

Continuing, the Chief Minister pointed out that, while the new scheme of elementary education was being described as a very good and extraordinary scheme in some circles, there were many teachers who reiterated that this was not a new scheme at all, that it was a very old scheme and that it was the teachers' scheme and not Rajaji's scheme. More than one teacher had raised this question and he had retorted in this manner. It was not as if this was new; teachers had already suffered under the existing scheme; only, they (the teachers) took things for settled once and for all. They also said that they could not agree to the reduction in the number of school hours because they felt that these were some of the things that, they thought, could never be changed. Everybody felt that the existing system of long school hours was unnecessary, but, as a matter of fact, they did not hesitate to point out that children between the ages of six and eleven were too tender, and everybody, therefore, claimed that they could not learn very much by way of manual labour.

Rajaji said people felt that the children were not tender to learn abstract mathematical propositions, arithmetical tables and such other generalised methods without any figures. It was the Greeks who thought that mathematics trained the intellect and they also followed it.

"We are told that these children are good enough for that. Let me tell Prof. Venkatarangayya that between the ages of six and eleven, I worked out sums by which I could say when the minute-hand and the hour-hand of the clock coincide or are at right angles to each other or are in a straight line between any two hours. I was able to do that and now you understand why I have come up so high! But many of my colleagues in my class also answered this correctly. But, it is wrong to think that generalised brain-work is more easy than manual work. The natural instinct of the child from the age of two is to handle things, break the toy or repair the toy. Therefore, the point that I wish to bring before you is that the emphasis today is on the wrong thing. What is the result? The human brain is an extraordinary thing and it adjusts itself; but, to the extent to which it succeeds in this adjustment, there is deterioration in another direction. You cannot get this unnatural advantage without creating deterioration in other fields.

"Some one else advances the argument that the things that are now taught in the elementary classes are simple literary instructions, whereas the other things could be undertaken by the children only when their muscles are developed. But, how are muscles developed? They are developed only by exercise. If you continually stand erect, you also learn to walk erect. That is what happens."

Aptitude For Manual Labour

After pointing out how modern educated young men failed miserably even in such ordinary work such as tying up a bed; the Chief Minister reiterated that his main point was that between the ages of six to eleven considerable amount of the aptitude for manual labour could be attained and was being attained even to-day. In support of this, he pointed out how boys of the age of six and seven in villages were able to drive a single bullock-cart by themselves and do such other odd jobs.

Then again, there was the criticism that this scheme was introduced in a hurry, continued the Chief Minister. He

had asked the President of the Guild as to what exactly was being taught during those first five years between the ages of six and eleven. He could give only a summary of it, but, even from that the Chief Minister could see that it was precious little. Yet, it took them nearly five years to teach these things. He was almost tempted to echo the remark of Cicero that the fault for this state of affairs was not "that of the horse but of the rider"; that is to say, the teachers had not done their work properly or had not been allowed to do it properly. The Chief Minister said that he was personally convinced that even between the ages of eight and eleven they could do all these things. It might be that even two years were quite sufficient to those boys who had been allowed to do what they would like to do.

"But, if you compress him, tie up his feet and continually keep him under your clutch, then, of course, he cannot learn all these things unless you give five years," declared the Chief Minister.

In support of his contention, the Chief Minister pointed out that this was exactly what Gandhiji had also been insisting continually. Gandhiji had been telling him that the education of the hand should precede the teaching of the three R's. He was convinced that the present method of teaching the boy the alphabet first was wrong. It was not right to imagine that the teaching of the three R's could not be postponed and that it was all important.

The other point made out against the new scheme, continued Mr. Rajagapalachari, was that the proposed session of three hours a day was too much at a stretch. Personally, he would not at all mind the teacher giving a five-minute or even a ten-minute interval between two hours and asking the boys to go out. He said he would give complete autonomy to the teacher in this matter as far he was concerned.

(To be continued)

Editorial

Some Lucknow Suggestions

IN view of the bitter controversy and political agitation that are going on in our state over the new scheme for Elementary Education, it is interesting to read the following from an abstract published in the interesting 'Field Work and Research Special' issue of *Education*, of a Ph.D. dissertation submitted to the Lucknow University in 1951 by Dr. L. Mukherji, now one of the honorary special editors of our contemporary.

"The organisation of primary education", writes Dr. Mukherji, "should be such as to be feasible. Too much time is spent in our schools, most of which is wasted. If instead of a forty minute period, 25 minute periods be provided, the shortenning will not reduce academic efficiency, for young children cannot concentrate longer. With this arrangement, we can run the school in two shifts of three and a half hours each and yet provide seven periods instruction. As teachers, in order to run two shifts, will have six hours work, it is possible to work both the shifts with one teacher, and thus reduce the number of teachers. Study of census reports shows that roughly one-sixth of the total population consists of children between 7 and 14, and it is possible that for 60 million pupils schools can be organised within the next 10 years."

Writing of secondary education, Dr. Mukherji observes: Secondary Education, complete in itself, will be vocational; it must be connected with industries or agricultural farms, so that the artificial atmosphere of the modern technical colleges will be absent. The organisation of these institutions should follow the Gary model type as advocated by John Dewey and E. Dewey in their book *School for Tomorrow*. Students should spend half the time in the institutions and half the time in agricultural farms or industrial concerns: the batches so alternating that while one batch works in schools another works in the field conditions. This will mean that the institutions can be run with the half the number of teachers"

It is unfortunate that in the controversy over the Educational Scheme, educational principles are being ignored and all kinds of political considerations brought in.

Battle of Languages

Important questions connected with the battle of languages now going on in our schools and colleges were considered by distinguished educationists at a recent conference held under the auspices of the University of Poona. It was inaugurated by Dr. M. R. Jayakar and presided over by Mahamahopadhyaya P. V. Kane. The conference recommended that the regional language should be the medium of instruction upto and including the University stage. Hindi, it was felt, should not be used for this purpose, while every encouragement should be given to it as the official language of the Union. In order to facilitate inter-university contacts, the conference made some recommendations about the technical terms to be used in various languages. These urge that all technical terms for all sciences should be drawn as far as possible from Sanskrit sources, that all international symbols, signs and formulae should be retained for use, that international scientific terms should be retained if suitable Indian equivalents could not be framed, and that scientific and technical terms should be uniform throughout the India. The conclusion reached regarding English was that it should be neither the official language nor the medium of instruction at any stage. Provision however should be made for its study in the post-intermediate stage.

Some of these recommendations are revolutionary. The view that Hindi could not function as the common medium of instruction throughout all Indian Universities will have many supporters in the non-Hindi-speaking states. But the place assigned to English runs counter to the decisions reached by the South Indian Vice-Chancellors to continue English as the medium of instruction. There are practical difficulties in using regional languages as the media of instruction at the University level. The recommendations about evolving a uniform set of scientific terms for the whole of India and about using international symbols and formulae as far as possible are to be unreservedly welcomed. In other matters, it is to be feared that the conference has not given a lead which can be easily followed. It seems as though the battle of languages will continue for some more years to come.

Drill In Weights And Measures

Guy M. Wilson and Mabel Cassell have conducted an interesting investigation on the teaching of weights and measures in arithmetic classes in schools. In their report which appears in the April issue of the *Journal of Educational Research,* they write: "The question as to what should be taught in weights and measures can now be answered on the basis of research data. In general we know that there is no justifiable drill programme in weights and measures: that weights and measures facts commit-

ted to memory in anticipation of probable use will be forgotton: and that therefore teaching should be on the basis of general information, appreciation and the extension of experience."

The present survey relies mainly on a nation-wide study of pupils' familarity with and usage of weights and measures made by Dr. Mabel Cassel in 1941 in the U. S. A. She then issued a questionnaire consisting of three parts. Part I asked how each of the following is sold: farm land, potatoes, cotton lint, eggs, coal, nails and wood. Part II asked questions about the number of inches in a foot, of seconds in a minute, of cups of milk in a pint, of cubic inches in a cubic foot, of pecks in a bushel and so on. It also asked about the averags yields of wheat and cotton per acre. Part III asked for information about the height of the dining room table, the height of the ceiling of the living room, the distance between the rails on the railway track the glove size of the average man and the width of the ordinary bed. After each answer pupils were asked to indicate whether they learnt it in schools or from experience or whether they guessed it.

The conclusion reached, after getting replies from over 6500 pupils in 380 cities scattered over 40 states, is that drill in weights and measures as such is of little or no use. They are effectively learnt only through experience. It is recommended therefore that the teacher should not go beyond the experiences of the child in teaching weights and measures. He will do well, however, to try to extend that experience. It is also recommended that the child should be trained to have clear objective concepts of simple measuring units. The authors conclude: "Beyond the development of experience and the building of clear concepts for practical use, our teaching should follow the appreciation technique. The committing of tables is unprofitable. Reductions are unprofitable. Addition, subtraction, multiplication and division of compound numbers should be omitted from course requirements and from all tests."

This investigation should prove to be of interest to our teachers of arithemetic.

A School of the Air:

The *Education Quarterly* of the Government of India reports the inauguration of a school of the air at Alice Springs, Australia on June 8 last by Mr. A. R. Driver, the Administrator of the Northern Territory. It is a Radio school with pupils scattered over thousands of miles. A two-way wireless arrangement makes it possible for both teachers and pupils to communicate with each other. At the inauguration, a roll-call was taken of listening pupils from different stations. "The school of the air sweeps its scattered pupils into a great class room, even though one not made with hands. The vital inter-play of teacher with child and child with others is atleast present in feelings as well as as in imagination".

One of the most regrettable features of educational set-up at present in India is the failure to utilise the Radio effectively. Insistence on all kinds of formalities are standing in the way of a spectacular expansion of our education.

REGD. NO. M 272

Printed By Sri C. Krishnamurthi, at the Sri Ramakrishna Printing Works, 19-B, Woods Road, and Published by M. R. Sampatkumaran M. A., 14/A, Sunkuwar St., Triplicane, Madras.
Hon. Editor : Sri A. N. Parasuram.