

REPORT  
OF THE MISSION TO  
AFGHANISTAN

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**EDUCATIONAL MISSIONS—IV  
REPORT OF THE MISSION TO AFGHANISTAN**

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TO AFGHANISTAN

U N E S C O

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## INTRODUCTION

On 8 December 1948 an agreement was signed at Beirut between the Government of Afghanistan and the United Nations Educational, Scientific and Cultural Organization, setting out the terms under which Unesco engaged to send to Afghanistan a Mission of expert consultants, competent to study the educational problems of that country and to report upon them. The duration of the Mission was not expected to exceed four months.

By agreement with the Government of Afghanistan three advisers were selected, one each from France, the United States of America and Great Britain. On this basis, the Mission comprised:

Jean Debiesse, Inspecteur d'académie, National Ministry of Education, France, nominated leader of the Mission, and responsible particularly for the sphere of Secondary Education;

Harold Benjamin, Dean of the College of Education, University of Maryland, United States of America, responsible mainly for Elementary Education; and

William Abbot, H.M. Inspector, Ministry of Education, England, to cover the field of technical and professional education.

In addition, Unesco appointed a member of its staff, Miss J. Aillet, to act as secretary to the Mission.

The Mission met in Paris at the beginning of August 1949 and studied all available documents relating to Afghanistan and particularly to its educational system. The Mission entered Afghanistan on 20 August 1949 and left again on 28 October 1949, returning to Paris to write its report, the first draft of which was completed by the end of November, 1949.

During its stay in Afghanistan the Mission was received by Ministers of State and Governors of Provinces, and was given every possible facility to undertake its task. It received at all times the whole-hearted co-operation of the officials of the Ministry of Education.

Arrangements were made for the Mission to visit schools in most districts of Afghanistan, and on a tour extending over 30 days it visited, among other places, Djebel Saraj, Bamian, Pul-i-Khomri, Baghlan, Tolucan, Faizabad, Konduz, Mazar-i-Sherif, Shiberghan, Andkhoy, Maimanah, Murghab, Herat, Ferah, Delahram, Kandahar, Mokor, and Ghazni. Subsequently it visited Gardez and Djelalabad. The route taken by the Mission is shown on the map on the opposite page.

During the tour the Mission was accompanied by Dr. Achmed, Director of Primary Education; Mr. Aslam, Director of School Equipment; Mr. Rahim, charged with Unesco affairs in Afghanistan; and Mr. Aziz Mohammed, Inspector of Schools. During its stay in Kabul, the Mission was also in continuous touch with Mr. Hakim, Director of Secondary Education, and Dr. Yusuf, Director of Technical Education.



The Report which follows begins with a chapter giving the Mission's general impressions of the country and of its people. It is hoped that this chapter, with the accompanying photographs, will convey something of the background knowledge on which the more detailed chapters are based.

A separate chapter is devoted to the training of teachers, because of its great—indeed overwhelming—importance. Similarly, a separate chapter deals with the education of women.

Much material has been relegated to the appendixes of the Report not because it is of less importance but to prevent too great an interruption of the main themes of the Report.

On all the sections of the Report, and on all its conclusions, the views of the individual members of the Mission have been quite unanimous.









## I. AFGHANISTAN—THE COUNTRY AND ITS PEOPLE

### PURPOSE

It is not the purpose of this chapter to deal in detail with the political, physical and social structure of Afghanistan; information upon which is available in many works of reference and is certainly not required by the Government of Afghanistan, to which this Report is addressed. Rather is it the aim to record outstanding impressions received by the Mission during its sojourn in the country, particularly those having a bearing on the educational problem. The material is presented, then, in order that the Afghan Government may know what most influenced the Mission and helped to shape its report.

### THE PEOPLE

In its extended tour of the main centres of population, the members of the Mission were continually in contact with the ordinary people of the country, in the streets, the bazaars, various places of interest and in the open country of the various provinces. These ordinary folk were at all times polite and helpful. No single case of discourtesy can be recorded; curiosity there was, and eagerness to see as much of the strange visitors as was possible: but this was reciprocated.

The Mission was impressed by the bearing of the people generally. They are obviously independent in spirit, patient in adversity, and with a strong sense of humour. The Mission's approaching cars would often scatter a camel or a donkey train and cause the drivers much exertion and discomfort, but the parting gesture was always a grin and never a curse; the incident was regarded as one breaking the monotony of the day, that was all.

Similarly, in car breakdowns—which were all too frequent—much help was given cheerfully with no thought of reward: on one high pass, a camel driver spared a skin of precious water for a leaky radiator; on a desert patch, men from a passing truck lifted the car free; and so it was always. The Mission found little difference in the attitude of the people, whether Pushtu speaking or Persian speaking, whether from remote Andkhoy or from metropolitan Kandahar; the Mission felt always among men of the same race.

As regards the teachers in the schools, however, the Mission was often disconcerted by their gestures of subservience to the Afghan colleagues accompanying the Mission—who certainly discouraged the gestures. These seemed to indicate a defensive attitude on the part of many of the staff, arising perhaps from a feeling of insecurity or from the low status accorded them in the social scale. The Mission rarely met an Afghan headmaster of independent views, capable of expressing them forcefully, and willing, if necessary, to take a stand

upon them. This condition of affairs is unhealthy and cannot contribute to a substantial elevation of true educational standards.

The pupils in the schools were frank and open, and rarely showed any trace of embarrassment when questioned by the members of the Mission. The boys in the north, particularly, looked one straight in the eye and exhibited a manly bearing.

This general attitude contrasted with the universal requirement that the pupils should salute and click heels on meeting the visitors and the school staff, and even on approaching and leaving the blackboard. These salutes were never returned by the Staff, so that the essential reciprocal nature of the action was missing. In this circumstance the Mission sees little point in a continuation of this one-sided practice of saluting. It does little or nothing to inculcate the virtues of a true disciplined behaviour; it may develop quite the reverse.

The nomadic tribes of the country constitute a not unimportant percentage of the population and present a complex educational problem. Some nomads, perhaps the greater part, have a seasonal migration—to escape the rigours of winter, to secure pasturage for their herds, or to obtain employment in a particular area; others constitute the carriers of central Asia, and have unpredictable movements. The Mission saw much of these tribes, in camp or *en route*, and noted the considerable numbers of children for whom no educational provision had been made.

The authorities in Afghanistan are not unmindful of this problem and are searching for a solution. The Mission makes a suggestion as to this solution which involves giving a promising young teacher a good deal of freedom to experiment.

The Mission was allowed to see very little at first hand of women's activities, educational or industrial. Remarks on the general problem of women's education are made elsewhere; all that need be recorded here is the Mission's conviction that a great improvement in the educational standards of Afghanistan's future children would result from the provision of general education for the girls who will be the mothers of these children and who will control them during the vital early years of their lives.

#### THE COUNTRY GENERALLY

The members of the Mission came to Afghanistan reasonably well read concerning the physical geography (and also the history) of the country. But the impact of reality often surprised them. For example, the remoteness and isolation of a town such as Faizabad is not appreciated until the journey has actually been made; and this remark applies to many other towns and villages. The map distances are not excessive but the bad roads, the difficult gradients, and the hazards of broken bridges or deep river fords impose great delays.

These circumstances have a bearing upon (a) the centralized control of education; (b) the inspection of the schools, and (c) the outlook of the students. A criticism of centralized control, which this paragraph reinforces, is given later.

As to inspection, when this has to be done on horseback, taking several days, visits must be infrequent and the influence of the inspector small. Regarding the outlook of pupils, the question was repeatedly put "has any boy visited town A or town B?"—these being the towns nearest to that in which the school was situated; no single affirmative was recorded. Boys at Andkhoy, for

example, had never visited Balkh and knew nothing of its history. Until communications are improved and travel cheapened, special exertions are called for to widen the mental horizons of pupils; the use of the lantern with slides prepared locally (until electric current and projection can be made available), of informative talks and visits to local museums, are obvious ways of dispelling the present state of ignorance. The Mission points out that even in Kabul an excellent museum is little used by the schools.

Nothing strikes the visitor to Afghanistan so much as the parched earth and the absence of electric light and power, while great rivers, which could supply the much needed water and power, hasten unchecked to the sea or to the desert sands. As an example, again at Faizabad, people have to accept indifferent oil lamps and must shiver their way through winter; they have sheep and wool but no factory to produce cloth; they are miserably poor. Yet they hear continuously the mighty Kokcha river on its swift passage to the Oxus and know, or ought to know, that power is there for the taking.

Every Afghan school-boy should be as water power conscious as a school-boy in Switzerland, and a generation of youths should grow up in Afghanistan who could be relied upon to support all measures thought necessary by the Government to irrigate the country adequately and make it self-supporting in electric power.

As to agriculture, operations are traditional and often primitive. The simple wooden plough and the equally simple harrow are everywhere in evidence; oxen tread the corn and men toss the grain and chaff as they did in ancient times.

Fenced fields are very rare, and herds and crops have to be watched continuously, often by children. All this does not indicate bad husbandry; on the contrary, as is mentioned in Chapter V, it is often very good. But it does suggest a waste of man power. The use of modern equipment for tillage (of tractors for the larger fields in the north) and the gradual introduction of the simpler mechanized units, e.g. of animal-operated threshing machines, would save time and thus free labour for the bringing of new areas under cultivation. It would greatly assist Afghanistan's economy if, for example, the country were self-supporting in cotton and sugar, and a limited adoption of mechanization might go far to bring this about—we say limited because all oil products have to be imported. These are matters that can be understood and made fully operative only when the people are educated and receptive of new ideas. A great responsibility rests therefore not only on the College of Agriculture with its work of rural adult education, but on the primary schools of the country which, as suggested in Chapter III, can do much to prepare the minds of the country's future cultivators.

The Mission had no opportunity—apart from a visit to a coal mine—of viewing the mineral deposits of the country, and could only form impressions from geological evidence seen during the tour. But it received from the Minister of Mines information which made it clear that Afghanistan has much natural mineral wealth, with the possible exception of coal; it has substantial petroleum reserves, deposits of rich ores of chrome which are abundant and readily mined, and good deposits of ores of zinc, lead and iron. The exploitation of these reserves however involves the overcoming of formidable natural obstacles, as well as transportation difficulties of the first order. Although the technical personnel for such work is discussed in Chapter V, the Mission is well aware that the main considerations may be political and financial rather than technical.



Some parts of Afghanistan have great natural beauty. Bamian is perhaps outstanding in this respect. But the mountain roads also, such as that to Faizabad or over the Kashka Pass, take the traveller through scenes of grandeur, often awe inspiring, which he will long remember.

If Afghanistan is to become the Switzerland of Asia, as was often suggested to the Mission, it should aim at the development of a substantial tourist traffic. This would have the effect of helping the country's economy and lessening its isolation. To bring about this development, however, much requires to be done to improve the roads, provide good hotels and make available the facilities which the modern traveller now expects. But perhaps the more important action required is to attune the people of Afghanistan to the acceptance of so complete a change of policy. Here is a task for education in its broadest sense, not only in the schools, but amongst adults. If this can be done, and if the experiences of the Mission are a guide, the traveller will find himself not only in one of the most interesting countries of Asia but among friendly people who can be relied upon to display the traditional hospitality of their race.

#### STANDARDS OF LIVING

The Mission could make no detailed study of nutritional standards, but close observation and enquiries were made on all possible occasions into prices, wages and the well-being of school children. The table in Chapter IX gives a list of the prices of various commodities ruling in the country at the time of the Mission's visit. There is much diversity of price between one place and another for the same article. There is probably some corresponding diversity in wages, but not the same extent. The casual observer could not fail to notice the difference in living standards for the people in Kandahar and for those in several of the northern towns. But even in these latter the Mission noticed no striking effects of undernourishment, although its opportunities for this kind of observation were admittedly restricted. Nevertheless the Mission was left in no doubt concerning the continuous rise in the cost of living and the oppressive effect of this rise on all the lower income groups. The only real remedy for this situation, in a country with an increasing population, is a greater production per head, as is discussed elsewhere.

Many of the teachers in the provincial schools receive not more than 200 afghanis a month. On this income, they cannot marry or live in decent surroundings unless they have private means or can supplement their earnings, sometimes by ways which are of questionable propriety. This state of affairs leads to slack discipline in the schools. Teachers absent themselves for short periods for shopping or other business and are excused because their desperate position is understood. The solution to this problem is difficult; a possible remedy is discussed in Chapter IX.

As far as the pupils are concerned, the Mission often noticed evidence of poor living standards. In some centres the boys were dirty and ragged, and displayed a lassitude which was unnatural. Evidence was given to the Mission by many people suggesting that the pupils are being subjected to an undue strain by having to attend school for a five-hour period following an inadequate breakfast at home. This raises the whole question of the most appropriate school periods and the possibility of providing school meals, points which are fully discussed in Chapter IV. Another point, having relation to climate, is that of closing the schools during the winter months. Many of the

schools are windowless and none is heated, and the Mission realizes that to equip them for winter use would be costly. Yet the school year is a short one and the enforced break in winter comes at a time when useful outdoor work for the boys is difficult to obtain; as discussed later, it would be educationally much more profitable to have the schools open throughout the winter and to lengthen the school year correspondingly.

#### SPIRITUAL VALUES

The people of Afghanistan are devout Mohammedans adhering to the teaching of the Koran, but tolerant of the presence of foreigners in their midst—Christians, Jews, Hindus.

The Mission included no member of the Islamic faith. It would therefore be undesirable, and even impertinent, for it to comment on the impact of the tenets of the Mohammedan religion on the various educational problems confronting the country. Nevertheless, a report by any body, however constituted, ought not completely to ignore the teaching in the mullah schools, which is the only instruction that the majority of Afghan children receive. The Mission actually visited no mullah school, as it was not invited to do so; it concerned itself only with the State schools. It did however visit the State Training Colleges for mullahs—i.e., the Schools of Islamic Studies. In these schools an attempt is being made to give not only training in theology but also education in other branches of knowledge, with the aim of gradually producing religious leaders who have sympathy with the development of the secular, as well as the spiritual, aspects of education. The adjustment between these two sets of values has been made in many other countries and it is reasonable to suppose that Afghanistan will also find a compromise. The problem is one upon which a foreigner, even of the Islamic faith, would only advise with diffidence; it is one for educated Afghans themselves to resolve, and it will take time.

The visitor to Afghanistan looks with astonishment on the extent of the remains of the ancient mosque at Herat, and recalls the great importance of this centre of learning, an Islamic university of world-wide renown. The Afghan people can again show the world, if they will, that the preservation of an ancient faith and the study of modern sciences are not antipathetic but, given tolerance and vision, can flourish together.

#### CONCLUSION

These, then, are some of the impressions which have formed themselves in the minds of the members of the Mission as the result of their stay in the country. For their formulation, the Mission owes much to the many Afghans—ministers, governors of provinces, headmasters and teachers, and many people in the towns and countryside—who have contributed to the store of knowledge placed at the disposal of the Mission. Above all, it owes much to the staff of the Ministry of Education, with whom the members of the Mission have been on terms of close cordiality—even when differing from them sometimes on educational issues.

The Mission realizes that it is impossible to convey in a few pages the great amount of background knowledge on which it has drawn in preparing the sectional reports which follow, but it believes that the Government of Afghanistan will view with understanding this brief survey and the purpose behind it.

## II. THE EDUCATION OF GIRLS AND WOMEN

### THE NATIONAL SIGNIFICANCE OF WOMEN'S EDUCATION

The Mission wishes at the beginning of this report to present its views on a question which it regards as being one of transcendent importance. It believes that the education of women is a matter for first consideration in attempting to set up a truly modern school system in Afghanistan.

The Mission cannot mince words on this issue and still discharge its duty faithfully to the Royal Government of Afghanistan. Either the country must educate its girls in elementary and secondary schools, must train women teachers, must provide adult and technical education for women, and must give some of its outstanding women university education at home or abroad; or it must resign itself to a backward status economically, socially, and culturally, in relation to its near neighbours, to other countries of the Islamic world, and to modern States everywhere. There is no other solution.

Turkey made her decision in this respect more than a quarter of a century ago, and other Moslem nations have since followed her example. She decided that a country of educated men and ignorant women, no less than of free men and slave women, could never attain either true enlightenment or freedom. Egypt, Iran, Iraq, and other Moslem States are following similar paths.

### EQUALITY OF EDUCATIONAL OPPORTUNITY FOR GIRLS—A CHARACTERISTIC OF A WELL-BALANCED SYSTEM OF EDUCATION

Lay observers of educational systems often overlook the fact that the primitive societies of our ancestors, whenever they attain a reasonable balance of efficiency for their times, invariably had programmes of education for girls and women as purposeful and direct as those for boys and men. This appears to have been true of the ancient Afghans, and it seems to be true of many of the simple agricultural and pastoral communities of Afghanistan today.

In a nomad caravan, little girls may be seen leading pack animals or carrying babies on their backs, learning the ways of their community's life from its very beginnings. When the caravan makes camp for the night, the girls carry water from the river, help their mothers around the cooking fires, and in general practise under supervision, hour after hour, day by day, the work they will do for their families and their clans throughout their lives. This is their education, and for their community and their standards of life it is a good education, a significant education, and just as extensive and useful as that given to the boys of the group. The folk wisdom of a people, who had to be rugged and shrewd in order to exist in a land of harsh deserts and man-killing mountains, determined many centuries ago the essential equality of preparation for life which they would give to their boys and girls.

Of course that equality did not mean sameness. Indeed, to give an equal chance to the girl, it was necessary to give her educational experiences different from those received by her brother. This had to be done to the extent that her function in the community was different; there was equality of necessary preparation for adult life, with recognition of necessary differences.

With the beginnings of Western education and the increasing need for the modernization of the Afghan economy, the country entered a period of development in which the new schooling was supplied to boys and men only. Today there are only 3,000 girls in school in Afghanistan. This probably means less than 1 girl in 200. There are six schools for girls, two of which are called secondary—but these have most of their pupils in the first six, indeed in the first three classes. There is no institution for training women teachers in the country and no present arrangement for women to secure higher or technical education except in the secondary schools.

#### HOW CAN EDUCATION FOR WOMEN BE EXTENDED AND IMPROVED ?

The first and most crucial step in improving education for women in Afghanistan is to train women teachers for the girl's schools. In Chapter VI, the Mission proposes the establishment of four teacher training (normal) colleges, two of which will be for women, and makes suggestions for the organization and programmes of these schools. At this point in the report, the Mission wishes to emphasize the necessity of establishing the normal colleges for women in a progressive fashion. They will have to be started, and should be started, with very small staffs and student bodies, so that they can grow naturally, in relation to the increasing needs and desires for the education of girls.

The general purposes of these teacher training colleges for women will be the same as those for men. In the details of their curricula and organization, of course, they will be different in many ways from the boys' normal colleges. The freedom to experiment and innovate, as requested in Chapter VI, will necessarily make the girls' normal colleges very distinctive institutions.

The Mission sees no practicable way to educate teachers of girls' secondary schools, and headmistresses and directors of elementary and secondary education for girls, except to permit women students to enter the faculty of education proposed by the Mission for the University of Kabul. (See under "The Faculty of Education", page 55). Whether and under what circumstances the women students in the University would have to be veiled, taught in segregated groups, and instructed only by women professors, are matters which the Afghans must decide in the light of their religious convictions and social conventions. It is probably enough for the Mission to observe here that since the Afghans are undoubtedly sincere in wanting to develop education for women, they will have to educate women as teachers somewhere. The Mission believes that on the post-secondary level, it will be an impossibility, both educationally and financially, to give prospective women teachers separate university instruction.

If Afghanistan wants women ever to enter other professional fields, as, for example, medicine or scientific research, it will have to open other faculties of the university to women students. Until secondary education for women has developed much further, of course, there will be practically no women entrants available for *any* university faculty. Until the university trains women secondary

teachers, furthermore, there will be practically no secondary education for women. This circle can be broken only by utilizing to the fullest those women now teaching in the present pioneer schools for girls. Many of these women have had private schooling; a few are foreigners or Afghan women who have been educated abroad; and some of them, Afghans and non-Afghans, have taken an important part in the cultural life of the country. These are the women who must prepare the first groups of girls for university entrance, teach the classes in the first training colleges for women, and, in some degree at least, furnish professors for the Faculty of Education.

The Mission believes that even now there are some exceptional young women in Afghanistan who should be sent abroad for advanced study. In the future, this number should be increased in proportion to the needs of the country for women educators, physicians, scientists, and leaders in other walks of life as there are opened to women.

Further comments on the education of adult women are made in Chapter VIII.

#### SUMMARY OF RECOMMENDATIONS

The Mission has recommended the following measures, listed here in estimated order of importance, for improving the education of women and girls:

1. The education of adult women, as recommended in Chapter VIII.
2. The establishment of two normal colleges for women (one with Pushtu and the other with Persian as the language of instruction), for the preparation of teachers for the girls' elementary schools. (This recommendation is also made in Chapter VI under the heading "The Training [Normal] Colleges", page 54.)
3. The admission of women to the University of Kabul, in the faculty of education, particularly, and in such other faculties as may be needed in the development of expanding women's roles in Afghan society.
4. The sending of highly qualified women abroad for advanced study.

### III. ELEMENTARY EDUCATION

#### ELEMENTARY EDUCATION FOR ALL—THE MARK OF A MODERN STATE

Elementary education for all children of elementary school age—that is, from 5 or 6 to 12 or 13 years of age—is the generally accepted minimum of schooling for any country which aspires to a modern standard of economic, political, and social efficiency. This proposition has been repeatedly demonstrated in a wide variety of countries during the last century and a half. The examples of Scotland, England, France, Germany, Holland, Belgium, Switzerland, Canada, Australia, New Zealand, Japan, Turkey, the various states of the United States, the Latin-American countries, the republics of the Soviet Union, and of several others have exhibited in dramatic stages, with differing tempos, and for a variety of ends, the central necessity of universal elementary education as the basis for national development.

The principles which these cases illustrate are clear and inescapable. The only effective instrument for the liquidation of national illiteracy is the universal elementary school. The only thorough and long-term measure of basic education is that given by and based upon an elementary education geared to the basic needs of a people. The foundation of adult education is in the same school. Technical education for the industrialization of a national economy, the improvement of agriculture, the raising of health standards, or the assembling and training of modern armies is founded on an effective and universal elementary school. The improvement of political machinery, the establishment of an adequate corps of civil servants, and all the other tasks incidental to utilizing the abilities and energies of a maximum number of the people in the work of a modern society are equally dependent upon a good elementary education for all the children of all the people. It is hard to think of a major activity which nations of the twentieth century regard as one of the conditions of progress that does not assume and require universal elementary education. So widespread is this belief and so firmly is it based on modern practice that probably the most acceptable single measure of a country's general progress over a particular interval of time is the extent of the improvement of its elementary school system for the same period.

#### AFGHANISTAN ACCEPTS THIS PROPOSITION AND BEGINS TO PRACTISE IT

The people of Afghanistan, in so far as they are sufficiently educated to understand the elements of their national existence, have adopted this view of the necessity of universal elementary education. For more than a generation, and increasingly since the accession to the throne of King Mohammad Nadir Shah in 1929, they have established and maintained elementary schools throughout

the country with the direct design of extending and improving them until they shall come to serve all the children of elementary school age.

Thus the Afghans have begun to march along a road from which no people in modern times has ever turned back. There will be vicissitudes and labours and difficulties on the long road ahead, and it is with these, in detail and in long vista, that the educators of the country and the Mission are now concerned.

The present beginnings of elementary education in Afghanistan are small. If, as is officially estimated, the total population of the country is 12 million, less than 10 per cent of the boys and less than one third of one per cent of the girls of elementary school age are now in elementary schools. If, on the other hand, as some observers believe, the total population is a good deal less than 12 million, the elementary educational efforts of the country are correspondingly better; but in either case the Afghan elementary school system is at best a very bare beginning of what the Afghan people want and must have if they are to achieve the status of a modern nation.

#### WHAT KIND OF ELEMENTARY EDUCATION DO AFGHAN CHILDREN NOW RECEIVE ?

Although the elementary school period is six years, it is only a three- or four-year school for most of the pupils. For each group of 15 pupils entering the first class, only one pupil completes the sixth class. The holding power of the Afghan elementary school is therefore among the lowest in the world. The explanation appears to lie in two main circumstances. The first of these is the character of the curriculum and the way in which it is presented to the pupils, as will be discussed later in this chapter. The second is the low esteem in which the school is held by a majority of the parents, as evidenced, for example, by the extremely low level of attendance. In general, the attendance record drops in the higher classes as the boys become old enough to work in the fields. This increasingly poor attendance from the fourth class onward is also related to the increasingly large number of over-age pupils in the fourth, fifth, and sixth classes. It is not unusual to find 50 boys on the roll in a fifth or sixth class, with only 10 of them present. Pupils more than 20 years of age were found in fourth, fifth, and sixth classes by Ministry of Education officials and members of the Mission on their tours of inspection. While these over-age cases are usually caused by failures to pass grades, they are also sometimes the result of one boy waiting until a brother has finished school so that there may always be available the necessary field labourer or herdsman for the family.

This three- or four-year school for most of the pupils is almost exclusively a school of reading, writing, and arithmetic. From the first class onward, most of the energy of teaching and learning is devoted to the study of three languages: Persian, Pushtu, and Arabic. Of these, only one at the most, Pushtu or Persian, and sometimes none in the cases of Uzbek or Turki peoples, is the child's native language. Although Arabic is taught primarily for religious purposes in order that the child may read the Koran in the sacred idiom, it also has some value in teaching the script which is used in the other two languages. The teaching of both Persian and Pushtu in the first grade, in a serious effort to have the child read, write, and speak both these languages from his sixth or seventh year of age, presents great linguistic difficulties for him. The result is that although the best pupils can read and write both languages on an acceptable level in the third class, the poorer students can read or write neither, the average student

has poor literacy in both languages, and most Persian (or Pushtu) speaking pupils as well as a majority of their teachers have an inadequate speaking knowledge of Pushtu (or Persian).

Of the remaining subjects in the elementary school curriculum, arithmetic is probably the best taught, but even in that subject the teaching seldom goes beyond the contents of the textbooks prescribed by the Ministry of Education. Little attention is paid to the solution of problems related to the lives of the children and their parents, while too much stress is laid on approved verbalizations which are required to accompany the computations. A great deal of work is done on small wooden blackboards with some use of the abacus.

The standards of teaching in the natural and social sciences are very low, partly owing to the poor quality of the official textbooks which teachers are expected to follow. Simple biology as related to the agricultural pursuits of the people is very little taught. Geography teaching is fragmentary and thin. History is little more than a recitation of a few facts. Art, handicrafts, and musical activities are only occasionally found, and in rudimentary forms. Health instruction is practically non-existent, and physical education is poorly adapted to the needs of the children.

The elementary schools are manned by a corps of poorly trained and badly underpaid teachers. About 60 per cent of these teachers have had nine years of schooling, including six years of elementary education and three years in the elementary teachers college or some other institution of secondary school grade. Somewhat more than 30 per cent have had only elementary or private schooling amounting to six years or less. Less than 10 per cent have been educated for some period of more than a few months in a sports school, arts and crafts school, extension teacher-training classes, or institutes of Koranic or Islamic studies, and the total schooling of most of this latter group does not exceed nine years.

The methods of teaching generally employed in the elementary schools are essentially verbalistic, memoriter, authoritarian, and dogmatic in character. The typical class exercise is for the teacher to read a paragraph first and then to have one or more pupils attempt to read the same paragraph, for the teacher to write a word or a sentence on the blackboard and then to require a pupil to copy the model, or for the teacher to perform an arithmetical computation on the board, giving the approved verbalization simultaneously, and then to try to get the same combination of figures and words in the same timing and even with the same intonation from the pupils. In spite of the common use of this general method, moreover, the professional preparation of the average teacher is so poor—and his attitude in reflection of his poor pay and lowly social status is so lackadaisical that even the few potentialities of the dogmatic-memoriter system are commonly overlooked. The children are not only taught by a poor method; they never see that method used by skilled technicians of the teaching craft.

In accord with the dogmatic type of instruction, the system of school discipline is authoritarian in purpose and manner. Perhaps the best single example of this is the practice of saluting. Throughout the elementary schools of the country, children salute on all sorts of occasions. They are often lined up in ranks at the opening of school in the morning or at the approach of visitors, and salute the principal or the visiting dignitaries at the word of command. They salute teachers as they pass them on the playground or in the halls. They salute the teacher, or the visitor as they step up to the blackboard to perform a computation. They salute as they leave the blackboard. In no single case,



amid all this saluting on the part of pupils, did the Mission ever observe a teacher or a principal returning a salute. Apparently this gesture, a direct copy of the military salute used in the Afghan Army, does not have any significance as a greeting among members of the same group or fraternity of learning, but is regarded only as a mark of subservience from pupils to teachers.

The buildings in which the elementary schools are housed are in general very simple structures. Sometimes they are in premises quite unsuited for education, in rooms without illumination or ventilation except through one door, with the pupils commonly facing that door, and often the surroundings are insanitary and depressing. This applies particularly to the older buildings. Nevertheless, the buildings are probably the best feature of the elementary school system, and come nearer to meeting the needs of the pupils than do the teachers, for example. The physical equipment is poor; two or three boys crowded on to a rude bench with an equally rude desk before them, or in some cases boys on the dirt or mud-brick floor with only a thin carpet to sit on; few maps; textbooks torn, dirty, and insufficient in number. Yet this is not the most serious matter; it is the teacher who makes the school, and even schools as poor in physical equipment as those of Afghanistan would be improved very quickly if the quality of the teaching staff were raised.

In the long and detailed travels to schools mentioned in Chapter I, for example, not a single sand-table was observed in any elementary school of Afghanistan. The materials for such a piece of equipment are available everywhere in the country. All that is lacking is a teacher well educated enough to know the uses of a sand-table and professionally alert enough to see how a sand-table could help vitalize his teaching.

Finally it must be said, however reluctantly, that the elementary school system of Afghanistan is highly centralized, with no apparent educational reason for the degree of centralization. If the centralization tended to improve the quality of teaching or were needed to enrich the curriculum, it might be defended. No such defence appears possible; it can be shown that curriculum and method could be greatly bettered by a certain measure of decentralization.

In all the elementary schools of the country, for example, as a result of a decision of the central authority, the second cycle of elementary instruction (the fourth, fifth and sixth classes) has departmental teaching. One teacher teaches Pushtu to four or five sections, another teaches arithmetic, a third geography, and so on through the various subjects. The result is that nobody knows the pupils of these classes. Some principals and local authorities would certainly develop a somewhat more efficient and satisfactory modification of this system if allowed to do so by the Ministry of Education. This improved system would then be seen or heard of by the teachers in other communities. Progress in this respect would become possible and probable. Under a highly centralized system, the supreme authority must make such a change for all the schools of the country simultaneously. It must wait until it believes the change would be advantageous to the whole country. It must therefore wait until long after the need has become widely apparent.

What kind of elementary education do Afghan children now receive? A few boys receive an inferior, highly verbalistic, poorly taught education in harsh surroundings under authoritarian disciplinary arrangements, controlled in detail by a central Ministry of Education. But more than 90 per cent of the boys and more than 99 per cent of the girls of the country receive no elementary education of any kind.

These two main facts stand out. It would be useless to attempt to hide them. It would be fatal to Afghan hopes of substantial national progress to ignore them.

There are practically no well-prepared elementary school-teachers in the country, and any other measures designed to improve elementary education in such a case can be nothing more than empty academic exercises in an atmosphere of pedagogical self-delusion.

There is practically no education of women in Afghanistan. No elementary school of modern type is possible in the long run when its entering pupils have been almost exclusively educated from birth to five or six years of age by women who have themselves lacked the barest fundamentals of education.

#### WHAT KIND OF ELEMENTARY EDUCATION DO AFGHAN CHILDREN NEED?

The Mission believes that the people of Afghanistan are right in wanting universal elementary education for all their children of elementary-school age. There are certain important features of a good modern elementary educational system which indeed cannot be given adequately except in a universal system. Conspicuous examples of such features are training in citizenship, education for personal health and community hygiene, and instruction in religion.

To educate only a few of the citizens of a nation in the activities and attitudes necessary for the safety and well-being of the state is a very dangerous venture for any people. The highway of history is lined with the wrecks of civilizations which have attempted to flout this principle by giving complete civic education only to a priesthood, a military caste, a social aristocracy, an economic class, or some other favoured group for whom high civic virtues were exclusively assumed. If any warning upon that highway stands today in letters clear and bold enough for any runner to read, it is this danger signal against a people attempting to give preparation for citizenship in favoured doses to a favoured few rather than a complete civic education to all as the right of all for the benefit of all.

The same principle of the necessity of universality holds in the teaching of health and hygiene. The micro-organisms of disease scorn all man-made classifications and move across the frontier between the educated and the uneducated with arrogant ease. To educate only a few members of a community in the practices which every member must follow to keep the community in health is like instructing only a few sentinels at a military post in measures of security against enemy infiltration.

In like manner, to teach only a certain number of those who belong to a great religious fraternity the accepted beliefs and rites of the group is to court certain disaster to the group. A Catholic Church must give all its catholic teachings to all its children if it hopes to remain Catholic. The principles of brotherhood and tolerance within the frame-work of Islam can be taught to restricted percentages of an Islamic population only at deadly peril to the community as a unit of the Islamic world.

Universal elementary education is demanded by the very nature of modern society. The partial education of a people may be more dangerous than none at all, as the ghosts of certain dictators might testify before the bar of history. No camel caravan master, however unschooled in books, would be so ignorant as to start a long and hazardous journey with only one-tenth of his drivers

having any previous knowledge and experience in the care and handling of his animals. If only 1 man of 50 in his caravan was uninformed and unskilled in handling camels, the master of the enterprise would labour from the outset to give this man the necessary training lest his ineptitude delay or even endanger the whole train on some difficult mountain pass. Again and again, in recent as well as in more distant times, chiefs of state, who have been considered great in their small contemporary circles, have demonstrated on grand scales their inferiority in this regard to any prudent caravan master by moving millions of their followers into international adventures for which not more than a few thousand had any pretence to educational qualifications.

The people of Afghanistan desire to avoid these dangers of limited education. They want education for all their children. What should that education be? What kind of education do these children need?

It seems clear, first of all, that the children of Afghanistan, as those of any other country, need an education which will give them physical strength and health and show them how to acquire and maintain vigorous and sound minds and bodies both in their present childhood years and in their later adult lives. The elementary school should therefore instruct its pupils in principles of sanitation and of personal and community hygiene and should develop a programme of appropriate individual and group activities to fix these principles in practice. It should organize body-building games and sports of a character appreciated by and interesting to children in the various elementary-school years throughout the country. It should aim at having the children live in happy health and productive strength fitted to their age, and at the same time lay a proper foundation for the health and strength needed in their adult life.

In this connexion, it should be noted that the common five-hour school day running from 8.00 a.m. to 1.00 p.m. is a very unhygienic factor of Afghan elementary education. So long a period of classroom instruction for young children, many of whom have had inadequate breakfasts, and some of whom have considerable distances to walk between school and home, has in itself a bad effect on the teaching of health habits.

It is equally imperative that the children of Afghanistan be educated for social health and strength. They need to develop an understanding of and a loyalty for the communities in which they live. They need to acquire the skills and attitudes necessary for effective membership in all the groups, large and small, of which they are or will be individual elements.

First of all, the children should be given in their elementary schooling a detailed knowledge of and affection for face-to-face, small-group and local ideals, traditions, and activities. They must learn how to do the things their families, their clans, their villages and their vocational groups need to have done. It is very necessary that this stage in social education on the elementary level should not be short-cut or by-passed in favour of seemingly larger matters. No child can properly understand and appreciate loyalty to a province, a nation, or a world community who has not been educated in loyalty to his parents, his local camp or his neighbourhood. The most effective unity on a large scale is based on many diverse unities on small scales.

Having made good beginnings in education for small groups, the elementary school should develop and provide instruction in sound bases for loyalty to the larger communities of political and cultural meaning to Afghans. The children of Bamian need to know about the remains of ancient Buddhist culture in their district and to develop a pride in being thus associated with an archaeolo-

gical centre of world importance. The children of the Province of Mazar-i-Sherif should learn of the days when Balkh was one of the great cross-roads of civilization in classical Asian antiquity and feel linked with the momentous historical currents which have swept through their land. The children of Kandahar need to have special knowledge of and appreciation for its textile factory and those of Konduz for its production of home-designed pottery with home-designed machinery. The children of all the country need to have particular education in a multitude of matters related to Afghanistan itself, from the drama of its historical development to the hydro-electric potentialities of its mountain torrents, from the quality of its horses and camels to its pressing need for better and more extended means of transportation, from the fertility of its valley fields to the backwardness of many of its agricultural practices.

For it is an axiom in modern education that the most advanced schooling in loyalty to a nation or to any other community or group is that which presents difficulties and shortcomings as well as achievements and advantages, which unsettles the learner's mind to the extent needed to make him sanely critical, and which thus protects him from the dry rot of provincial and national complacency. This is a very complex and delicate task. It is no job for a partially trained pedagogical mechanic. That is why truly modern educational systems require a standard of education for teachers which would have appeared very excessive to their simpler predecessors. The modern educational system does not dare to do otherwise. The penalty for failure to inculcate intelligent loyalties to political systems, national, local, or international, instead of unthinking, goose-stepping loyalties, is too often political death.

This qualification applies with equal force to the third great phase of social education in the elementary school. The children of Afghanistan should be given an understanding of and an attachment to the larger communities of religious, political, economic, and cultural interests in which they live, and those understandings and appreciations must be as critical and sanely balanced as the ones needed in local, provincial, and national affairs. The children in the elementary school need to acquire a special loyalty to the Moslem world accompanied by clear conceptions of what that particular world most lacks today. In the same way, they need to know about the special achievements and problems of Asian countries, of the United Nations with its Specialized Agencies, and of men everywhere with respect to certain special groupings of particular significance to Afghanistan. In such circumstances, with teachers who understand and accept these educational needs, geography can hardly remain a mere memorization of a few national capitals or a casual tracing of national boundaries. It will become instead, a study, for example, of the great wheat-growing regions of the world with children asking and answering questions about what makes a good wheat-growing country and whether Afghanistan could become a better wheat-producing area and what would be needed to achieve that end. It will pass from wheat to rice, cattle, sheep, maize, fruit, forests, and minerals in ever-widening circles of questioning and search, re-questioning and research, until geography becomes not just a subject to be learned in the elementary school but one of a collection of precise, well-polished instruments whereby children can learn to be intelligent, strong, and daring members of all their communities from the family to the great groupings of world affairs.

As members of all these groups, the children of Afghanistan need to acquire knowledge and basic techniques to enable them to understand, control, and adjust themselves to their environments. These abilities will necessarily be

simple on the elementary level, but they should be definitely recognized and taught. Afghan children will need to learn the principles of plant growth and the application of those principles in agriculture and horticulture. They will need to explore these principles with special reference to the types of agricultural and forest products raised or needed in their local communities, their provinces, and their nation. The instruction in natural sciences will therefore overlap or merge with that in the social studies already discussed. This is not an error, logical or otherwise; it is rather the mark of a vitalized, modern curriculum. Loyalty to a community and understanding of its problems cannot be developed in a vacuum of mere goodwill and flag-waving. It must be clothed in knowledge of facts and armed with skill in handling things needed by the community.

The elementary schools of Afghanistan should therefore also give the children information on the care and uses of domestic animals, with emphasis on the stock raised in the particular locality. They should include training about the institutions, methods, and problems of commerce, industry, and transportation, actual and potential, of the local community, the province, the nation, and various international groupings.

The children of Afghanistan need to learn a number of individual skills for their own self-development. They need to acquire ability to work with their hands at a variety of socially useful and creative tasks. They need to learn to make and enjoy beauty in line, form, colour, and sound. The elementary school should give them musical experience, with special attention to Afghan folk songs and Afghan instruments. It should give them an opportunity for creative work in at least one representational art and experience in appreciating several such arts. Every elementary school should provide as wide a variety of art experiences with as much free choice among them as its physical resources and—what is more difficult to secure—its vision will permit. Drawing, painting, weaving, modelling, wood-working, metal-working, or at least most of such arts should be available in some form for every elementary school. Elementary school children should also learn to take part in and appreciate the literary arts. They should read and tell stories. They should memorize, recite, and compose poetry. They should dramatize stories and present plays of their own making.

In a Moslem country, furthermore, the children need to acquire knowledge of and respect for Islamic traditions and culture. The elementary school therefore needs to give its pupils acquaintance with and respect for the Koran, not only through reading the Arabic original, but also through familiarity with Persian and Pushtu translations. It should give the children at the same time a familiarity with the history of Islam, an opportunity to practise the rites of that religion, and a clear understanding of its tenets.

This, briefly, is a sketch of the kind of elementary education the Afghan school system should give to Afghan children. It is a sketch of the outcomes in behaviour desired for the school. We next pass to an even more difficult question—the means, methods, and tools required for giving the desired kind of education.

## WHAT ARE THE CHIEF INSTRUMENTS FOR GIVING THIS KIND OF EDUCATION TO CHILDREN ?

The first instruments or subjects for giving this kind of education are those of the communicative arts and skills. Reading, writing, and speaking the mother tongue should therefore be taught through all six years of the elementary school. Reading, writing, and speaking the second national language—that is, Persian in the Pushtu-speaking districts and Pushtu in the Persian-speaking areas—should be taught in the fourth, fifth, and sixth years only. The reading of Arabic, in connexion with religious instruction, should be reduced to a minimum in the second and third grades and not taught in the first grade at all. One language, and that one the native tongue, should be the only language the beginning pupils in the elementary school have to face for the first year. This does not mean that religious teaching should be left out of the first grade or reduced in the second and third grades. It might indeed very well be increased, by employing time thus released from learning to read Arabic, to a study of Islamic history, and learning Islamic precepts and stories in the native language.

Number and simple geometrical concepts and combinations, as related directly to problems studied in elementary school, should be taught in all six years. Sketching, drawing, diagramming, simple mapping, the construction and utilization of sand-tables and similar graphic means of communication should be used in connexion with elementary school activities of all kinds. This means, of course, that such instruments must be acquired by the teachers in the course of their professional training as integral elements of the school activities and not as separate items to be taught at a particular hour in a timetable.

A second group of instruments for elementary education are those involved in manual and construction activities. Handicrafts and manual arts should be used throughout all six years of the elementary school. Weaving, leather-working, wood-working, metal-working, arcraft, and other activities requiring manual skills should be employed in every available place in the elementary programme. In Afghanistan as in many other countries, a prime difficulty to overcome in the national attitude toward education is the attitude of scorn for manual labour. The dignity of manual arts and skills, their intimate relationship to the higher intellectual processes, and their central place in the culture of an advanced people should be taught by precept and example in all elementary classes.

In this connexion, agriculture should be taught in all village and rural schools and in city schools where land can be secured, by means of school gardens and individual pupils' projects in home gardens and fields. According to the particular local community and the vocations of its people, every effort should be made by the elementary schools to relate the handwork in the school to the kind of labour the child is engaged in after school hours and the kind of work he is likely to do after his elementary schooling is ended. In this matter, the elementary schools of Afghanistan have a chance to move the people of the country a long step forward in the direction of serving the cause of national progress.

A third group of instruments are those related to scientific knowledge and activities. Children should be taught throughout the elementary school those simple scientific concepts and practices which are appropriate to their ages, to

the common experiences of their families and villages, and to the material welfare of their country. Science in the Afghan elementary school should be organized around basic local and national problems, such as those of irrigation, afforestation, erosion, conservation of natural resources, mining, agriculture, animal husbandry, industry, commerce, transportation, sanitation, and public health.

A fourth group of instruments are involved particularly in the teaching of the social studies. The elementary school should teach geography from the first through the sixth year, beginning with detailed study of the land immediately surrounding the school building, and proceeding to the local, the provincial, the national, the regional and the continental analysis of terrain, climate, landscape, resources, population, and other factors relating to Man on his land—both with cross references and in direct application to Afghanistan and the course of its development as a nation.

The elementary schools should teach history in close connexion with geography throughout the six years, with emphasis in the two first classes on the simple, local stories and legends, in the intermediate classes on Afghanistan and Asia, and in the last two classes on Islamic and world history as related to Afghanistan and Central Asia.

As a suggestion concerning the way in which such instruments of elementary education could be applied experimentally to an educationally neglected segment of the country's population, the Mission has a specific suggestion to offer. It recommends that a promising young teacher be given the assignment of making arrangements for the education of the children in one of the larger nomad groups. He should be provided with the necessary school equipment and pack animals to transport his school and his personal belongings, so that he can move with the band and identify himself with it. He would need a free hand to try various methods in an attempt to reach a reasonable solution of the many difficulties facing an undertaking of this kind. This proposal is developed further in Chapter VIII, in connexion with adult education among the nomads.

The Mission wishes at this point to emphasize a fact which may be overlooked. The above suggestions concerning the kind of education needed in Afghanistan and the instruments which might well be used to achieve that kind of education are only suggestions. They are designed merely to indicate an approach to the elementary educational problems of the country. The Mission is well aware that the only people who can finally determine the kind of education Afghanistan needs are Afghans. If the Afghans fail to accomplish this task, nobody else will or can do it for them. It is for this reason that the Mission passes now to a question upon which the performance of this peculiarly Afghan task depends.

#### HOW CAN THE AFGHANS DETERMINE THEIR ELEMENTARY EDUCATION NEEDS?

The educational needs of any people are determined by:

1. What they do now:
  - (a) To make a living for themselves and their people.
  - (b) To enjoy their lives.
  - (c) To attain significance in the eyes of God and their fellow-men.
2. What they want to do in order:

(a) To make a better living for themselves and their people.

(b) To lead happier lives.

(c) To attain greater significance in the eyes of God and their fellow-men.

This is a nearly universal formula among peoples who are sufficiently advanced in culture to be conscious of a need for education. That these peoples differ greatly in what they decide their educational needs to be is merely a function of their varying skill in analysing their needs and recognizing their wants, of their various concepts of what constitutes improvement in their standards of living or happiness of their lives, and above all of their diverse judgments of what God and their fellow-men will regard as significant. Afghanistan must come down to this bedrock of thinking and determine its needs in education, including the elementary level, in terms of the Afghans themselves and in no other terms whatsoever. What the elementary schools of France, England, the United States, Germany, Turkey, or any other country does or attempts to do is only of secondary importance in this process of determining the elementary educational needs of Afghanistan. These needs must be determined first by what Afghanistan wants to do in relation to what she does now. When that decision is made, she can turn to any other part of the world for ideas of methods and means of implementing the decision.

The Afghans have to decide what they want their children ideally to be and to do. They have to look at their present beginning of elementary education to see whether it turns their children effectively in the desired directions. They have to change their present schools and build new ones which show promise of coming closer to producing the desired behaviour.

#### CAN THE AFGHAN PROVIDE AND SUPPORT THE ELEMENTARY EDUCATION THEY NEED?

The question which seems to the layman to be a primary one about an educational system but which is actually a subsidiary one is that of financial support. What can a particular country afford in the way of education? It can afford all the education it has the courage to desire and the intelligence to devise and operate, for the education which a country needs always increases the national income far beyond the level of the cost of the education. This is just as true of artistic or religious education as it is of trade and technical instruction. Any education that is needed more than pays for itself. It may not, often does not, pay in money, but it always pays in advantages which are either as good as money or better than money for the people of a country. If it does not so pay and if the people do not recognize that it so pays, then it is an education not needed by that people. This is a hard doctrine, but it is the beginning of national educational wisdom. It means that a country which desires to advance in the modern world, indeed to survive on a competitive basis in that world, cannot afford to be without an extensive national system of popular education, with at least the elementary level on a universal basis.

This doctrine means, furthermore, that an educational system which a people does not want, does not understand, or does not support is for the time being at least not needed by that people. An education for a particular people has to be of that people. It must be firmly based on popular understanding and support.

It is for this reason that the Mission believes that each elementary school in



Afghanistan should have a local committee or council of parents and other citizens, to advise and assist the teachers and inspectors concerning the particular needs and interests in education of that community. It believes further that each elementary school should be a community centre for adult activities, educational, civic and recreational. It is of the opinion that local co-operation among adults in connexion with the elementary school can well be begun among the elementary school pupils themselves by organizing school co-operatives in each class of the larger schools, or in each two classes of smaller schools.

The Mission also wishes here to emphasize particularly what it has intimated at various places earlier in this report. *The teachers are the key to the successful operation of the elementary school as of any other part of the educational system.* No amount of financial support, no system of inspection and supervision however elaborate and logical, no combination of fine buildings and expensive instructional supplies and equipment, no ornate and precise curricula, and no explanations of plans and programme will ever make a good educational system if the teachers are untrained, ill-paid, and held in low esteem.

The programme of teacher-selection and teacher-education as discussed in Chapter VI below must therefore take high precedence in the task of building the elementary school system. When teachers are selected and educated as well as possible, they must be given the greatest possible freedom in matters of curriculum and method. If an inspector, a principal, or a Ministry of Education official is ever in doubt as to how much freedom a teacher should be allowed in making professional decisions, the final judgment should always be made in the direction of more freedom for the teacher. If the teacher is well-trained, he can do more in a week with the curriculum and methods of his class and his school than any outside agency. If he is ill-trained and has ability, he will teach himself by making his own decisions. If he is ill-trained and has no ability, the best way to discover the lack is to give him responsibility for decisions and then remove him from teaching; the school is better off without him, no matter how much he is supervised.

To build and maintain a good elementary educational system is one of the hardest kinds of tasks for any nation. It involves a host of difficult, detailed problems. It is as complex and varied as the children for whom it is designed. It is as temperamental and unpredictable as human nature in teacher and parent, in public official and private citizen. It is also the great starting place for a nation which is determined to lead to a modern existence. Peoples who are convinced that they are on the move culturally, economically, socially will of necessity also have an advancing school system, and they will have a universal programme of elementary education moving at the heart of that system.

#### RECOMMENDATIONS

To move effectively towards the national goal of universal elementary education, the people of Afghanistan need to take the following steps:

1. Improve the teaching and practice of health by:
  - (a) Developing a programme of games suited to children of elementary school age.
  - (b) Giving more instruction in the principles of sanitation and personal and community hygiene.

- (c) Dividing the school day into morning and afternoon periods with a break of at least one hour at noon, with a possible arrangement for a simple mid-day meal provided at the school, where this is necessary.
2. Improve the teaching of social skills and understandings by:
    - (a) Having the children study the occupations, history, geography, and traditions of families, clans, villages, and other local groupings of their people.
    - (b) Giving specially detailed instruction on the industries, history, geography, and traditions of the cities and provinces in which the children live.
    - (c) Developing loyalty to and understanding of the larger communities of which the children are members by study of the national, international, religious, and cultural needs and activities of Afghanistan, Asia, the Islamic world, and the United Nations.
  3. Improving the teaching of the natural sciences by developing a better programme of instruction in simple biology as applied to agriculture, animal husbandry and forestry.
  4. Giving more opportunity for manual crafts and arts for the development of skills and attitudes needed for socially useful and creative work.
  5. Improving the teaching of communicative arts and skills by:
    - (a) Teaching the native language (Pushtu or Persian) in all six years of the elementary school.
    - (b) Beginning instruction in the second national language (Persian or Pushtu) in the fourth class and continuing in the fifth and sixth classes.
    - (c) Teaching the reading and writing of Arabic in the second class instead of the first, with instruction in religion and Islamic culture being given in the first class in the native tongue only.
  6. Providing an experimental teacher for at least one nomad group.

## IV. SECONDARY EDUCATION

### PRESENT SITUATION

Secondary education, introduced some 30 years ago, is now of six years duration; it is provided in schools called *lycees*. In each province there is also at least one institution which is mainly a primary school, but which in addition provides a three year secondary course. The level of secondary education in these schools is below that in the *lycees*.

Although some 13,000 young persons receive secondary education in 20 institutions (including the primary schools with attached classes), very few of them have access to really sound training.

At a cost of 14 million afghanis, representing 21 per cent of the total expenditure on education, the secondary schools provide the country with a hundred or so matriculants (secondary school graduates) of very unequal ability per annum.

### BUILDINGS—EQUIPMENT

The *lycees* at Kabul and Kandahar, which stand in extensive and well situated sites, have their own recreation areas and sports grounds.

Three *lycees* in the capital are being rebuilt. In the existing schools, the classrooms are generally small, with no electric light, heat, gas or water supplies.

With one exception, the *lycees* lack laboratories for the physical and natural sciences. The teaching aids are quite inadequate. As there are no glass-blowers in Kabul, costly apparatus is left discarded in cupboards, when a very simple repair would restore it to working order. Hygienic and sanitary arrangements are of a very low standard. Neither the boys' nor the girls' *lycees* have a first-aid room, wash place, or shower-baths. Lavatories are primitive. Panes are missing from the windows of some classrooms.

The other secondary schools are divided into two groups: five of them, called commercial preparatory schools, admit boarders; the rest do not.

These boarding-schools are equipped in a very rudimentary way. Dormitories are much too small; pupils have no special room in which to play games or hold assemblies; there is no electric light; sanitary arrangements are primitive and kitchens are ill-equipped.

The day-schools, built of flimsy materials, are in urgent need of repair.

In all the secondary schools, classrooms are bare, and are generally devoid of any kind of decoration or even of paint on the wood-work; window panes are missing, blackboards are very small; the school furniture as a whole is crude and ill-adapted to its purpose; teaching equipment is generally inadequate. Sanitary arrangements are poor.

There is usually no shortage of vacant sites suitable for recreation or sports grounds.

All teaching aids are kept in padlocked cupboards. The keys are held by the *tahwildars* (official store-keepers) whose frequent absence from the premises stifles any inclination to make use of these aids.

The aids themselves are frequently of an exceptionally low standard. Thus, imported maps of the world were seen to be grossly inaccurate. To mention only errors concerning the geography of France, Strasbourg was situated on the Meuse, the Rhine frontier was completely false, Marseilles was 50 kilometres from the sea, and the Channel islands were French possessions.

In brief, the Mission is of the opinion, first, that the teaching aids at the disposal of secondary establishments are inadequate both in quality and in quantity; and, secondly, that the buildings are small, badly equipped and unsuited for their purpose. There is, for example, not one lecture room large enough to accommodate all the pupils in a school.

#### STAFF

*Foreign Male Teachers.* The Government has recruited a number of teachers from Austria, Great Britain, the United States, France, Pakistan, Egypt and India. Some of them are excellent; they know their work; their teaching, given in their own tongue, is usually of a high standard. Nevertheless, in future the Afghan Government should only call upon foreigners who have obtained degrees allowing them to teach in their own country.

*Afghan Male Teachers.* For convenience, four groups will be considered:

- (a) Afghan teachers who have followed University studies abroad and have returned to Afghanistan after graduating or taking a higher degree. Such teachers generally give a high standard of performance.
- (b) Young graduates of Kabul University, beginning their career and teaching in either Persian or Pushtu. They have had no proper pedagogic training; nevertheless, with proper guidance, some of them could rapidly become very good teachers.
- (c) Young teachers who have completed 12 years of studies at a special training school. They lack experience and general education. It is hard to believe that they are suitable as teachers for grade 9 as soon as they leave the training college.
- (d) Teachers with no degree, but with some educational background. Such recruits are largely second rate. Some of them have been observed to remain rivetted to their seats for over half an hour; during that time they never stopped talking to question the pupils, or to write a single word on the blackboard.

Most teachers arrive at school with their lesson unprepared, with no notes of any kind and with no teaching aids. The Mission never saw a teacher from groups (b), (c) or (d) bring his own aids (e.g. collections of postcards or specimens of rocks) in order to make the lesson more personal. Many among them cannot free themselves from the traditional teaching methods of the mosques: there, a pupil covering the same ground for a second year acts as monitor, and the class repeats what the monitor reads, so that the teacher takes only a minor part in the general activity. These teachers are unskilled at drawing on the

blackboard and very seldom perform experiments; rarely do they endeavour to awaken a critical attitude of mind in their pupils.

In short, the Mission stresses its belief that the Afghan teachers in categories (b), (c) and (d) lack proper training for their work.

*Women Teachers.* Of these there are two groups:

(a) A few foreign lecturers who teach in their own tongue.

(b) A number of Afghan women teachers with no diplomas or pedagogic qualifications, whose instruction is apparently rather poor.

The Mission urges that the Afghan Government should make a considerable effort to train good primary and secondary school women teachers (see Chapter VI).

*Inspectors.* The Ministry of Education does not seem to have formed a body of Inspectors who are specialists in the various branches of secondary education. Inspectors are employed on many different tasks; few of them have a clear notion of the part to be played by a secondary school inspector in a modern State. Inspection reports lack interest and have no pedagogic significance.

*General Observations concerning the Staff.* The scarcity of qualified teachers, and the need to hold several posts at once to keep themselves alive, means that competent Afghan teachers and administrators are overwhelmed with work. In the capital, they race from one establishment to another, hurrying through their lectures or even neglecting them entirely.

For want of properly qualified laboratory assistants, even first class teachers in the *lycées* of Kabul give science lectures unsupported by experiments.

## STUDENTS

The students seen during the tour were bright, intelligent, hard-working and disciplined. They had the will to learn. Uzbek pupils appeared particularly brilliant.

The recruiting system is democratic: children of the people sit side by side in the same forms with children of rich townspeople and cabinet ministers. Education is entirely free: school books, exercise books and pencils are supplied by the State; the State also provides a school uniform, shoes and pocket money for boarders.

The *lycées* provide preparatory training by means of attached elementary classes.

The only secondary establishments which admit pupils directly from primary school are: the five commercial preparatory schools, the training colleges for teachers, the military school, the schools for Islamic Studies, and the schools for accountancy and commerce. It would appear that one out of every three grade 6 pupils, may pursue his studies as a boarder. The main problem is to rearrange both primary and secondary education so as to make provision for technical training. How are the technicians, so necessary to the life of the provinces, to be trained, if there is no boarding accommodation in the schools feeding the technical colleges?

Because the general standard of primary education is poor, pupils find it difficult to follow a true secondary school course in the *lycées*, or even in grades

7 to 9 of complementary courses in the provinces. A great number of pupils drop out during their schooling. On average, only 1 pupil in 10 completes his secondary education.

No measures have been taken to provide alternative careers for the pupils who abandon their secondary studies.

A town may possess several classes of grade 12, each a mere skeleton with 8 to 12 pupils, thus increasing its expenditure on education out of all proportion to the returns.

The average age of secondary school students is fairly high. Estimates for the ages of the various grades are as follows: grade 12, 21 years; 11, 20; 10, 19; 9, 18; 8, 17; 7, 16.

Students of Uzbek origin are in general two years older than the average. (Their apparent academic superiority is perhaps due to this.) Language difficulties must explain the backwardness in otherwise intelligent students who have, however, never been taught in their own tongue.

*Life in the Lycées and other Secondary Establishments.* These establishments possess sports associations, choral and dramatic groups. There are regular meetings at which students are invited to express themselves in public upon a chosen subject. There are no school co-operatives; nor are there any clubs, where students could prepare themselves for social life, as they do in the schools of many other countries.

Efforts ought to be made to prepare the children more adequately for social life.

*Girl Students.* Secondary teaching for girls is only available in two *lycées* in Kabul. Together with the elementary forms annexed to them, these establishments hold approximately 3,000 pupils, of whom a few hundred receive what is considered to be secondary education.

From what the Mission could judge (in very difficult conditions, since it was not allowed to inspect the *lycées* while the pupils were present), the education offered in them is of hardly more than primary level. According to the teachers, the girls are clever, industrious and persevering, and would appear to give much more satisfaction than do the boys. The *lycée*, which offers the first glimpses of freedom, is particularly appreciated by these young ladies.

#### CURRICULA FOR SECONDARY EDUCATION

Secondary school curricula are remarkable for:

Their ambition. They are in truth particularly extensive (16 pages of syllabus for the history courses). Apparently these syllabuses were compiled by assembling all that could be found in the curricula of several foreign countries. They are of so wide a range that it is impossible to complete them.

Their confused arrangement and lack of structure. Neither in the syllabuses nor in the instructions accompanying them, is it possible to discern any coherent line of thought.

Their evasiveness and their abstract content. Neither in syllabuses nor in instructions is a single reference to be found to the necessity of teaching on a wide experimental basis, or of moving from facts accessible to the senses towards the abstract forms of reasoning.

In conclusion, it would appear highly advisable that the syllabuses should be remodelled on a more modest scale, in such a way as both to provide for the needs of each area, and offer the children a real secondary education.

#### CONCLUSIONS DRAWN BY THE MISSION

Two distinct types of establishment are to be found: the *lycées* of Kabul, with their foreign professors and their foreign-taught Afghan professors, and the other secondary schools.

*The Lycées of Kabul.* In these institutions, results in certain subjects, such as mathematics, are quite remarkable. Where the professors are competent, classes are lively and attractive and resemble those of similar schools in large modern states. Unfortunately, even in these establishments, the teaching of certain subjects by less skilled lecturers has had distressing results. For example, the same plaster cubes and cylinders are drawn all the year round, from different angles, by the same class. A lesson on 'capillarity' is delivered without the aid of a single experiment.

*Other Secondary Schools.* As a rule, boredom reigns in these establishments. The classroom is impersonal and lacks decoration; aids are left unused, and the teaching is dull. The teacher merely talks; he is often content to have the lesson repeated by a few pupils.

The Mission seldom witnessed pupils laughing in Afghan classes. Everything is dispiriting; either the teacher gives the impression of being bored himself, or he will be talking with insipid and tiring verbosity.

The teachers rarely draw on the blackboard. They never look for critical observations from their pupils. Yet the pupils are not devoid of a critical faculty as shown by their acting an excellent short play written by themselves, which laid emphasis on the defects which they witness daily (see Chapter VI).

The Mission has the impression that, as now practised, secondary teaching bears down upon and destroys personality; this is, of course, the exact opposite of the intentions of sound secondary education.

Literary instruction, whether in Pushtu or in Persian, seems to be incredibly poorly expressed and to lack texts for reference. Few poems or texts are learned by heart. Pupils are not trained in the use of their voices, and therefore do not employ them effectively.

The mathematics lecturer teaches mechanically by mere repetition. There is no desire for discovery. There is no sparkle in such teaching.

Pupils of grade 9 have never handled Latin figures. It seems essential that, from grade 7 onwards, all pupils should be trained, not only to use the latin notation, but also to practise handling both the metric and the British systems of mensuration.

The pupils are very poor at mental arithmetic.

In provincial secondary schools, it has been impossible to get the pupils to draw the simplest graph, or to carry out the simplest experimental measurement.

In the experimental teaching of science, everything has yet to be done. In only one provincial secondary establishment did the Mission see an Afghan teacher carry out a chemical experiment. There are no collections made by the pupils, no group experiments and no dissections.

The pupils are entirely lacking in a knowledge of electricity. No scientific study is made of local activities or conditions.

Long and uninteresting texts on scientific subjects are learnt by rote.

To sum up, descriptive lessons conducted without the aid of examples of the objects described and science classes without the help of experiments give poor results.

Indeed, the general level of grade 9 pupils is very low. In geography, most of them are ignorant of their own country, do not know the names of the neighbouring states and are incapable of drawing a map.

In history, apart from the names of a few great conquerors, the pupils know nothing about the history of civilization.

Thus the *level* in these establishments is nearer to that of primary rather than to that of secondary school pupils.

The processes used for developing intelligence are unsatisfactory. The pupils' only instruments of learning are mechanical recitation and the quotation of ready-made sentences from books; they do not learn to criticize, to discuss or to pass judgment.

#### GENERAL COMMENTS

There are several reasons for these poor results, obtained with pupils who are already rather old for their class:

The considerable changes to which primary teaching has been subject during the last 12 years have had adverse effects on those pupils who are now in Grade 12.

Teaching was first carried on in Persian, then solely in Pushtu. It was only three years ago that the present bilingual system was adopted.

The war of 1939-45 isolated Afghanistan, thus depriving the country of books and foreign teachers, and forcing it to rely on its own limited resources.

Pushtu and Persian books now in use in secondary establishments are far below standard. Each year the Afghan Government distributes selected textbooks to the pupils without charge; in consequence manuals are cheaply printed, lack illustrations, contain but few diagrams and have little pedagogic value.

Many of these books are more like a directory or a cookery book than a work divided into lessons, written around a few fundamental ideas. It appears very necessary to make at least some effort to obtain specialists to write good textbooks with appropriate illustrations.

It must be added that very often the lack of books compels the teacher to dictate the lesson, and so to revert to the worst traditions of the profession.

The local teacher, isolated in his province, too poor to order books from the capital, has little opportunity to improve his general culture and methods. This mental isolation is most harmful to the quality of teaching.

Finally, the Mission must, in all fairness, draw attention to the difficulty of translating foreign books into Pushtu or Persian. These languages, which have not yet been stabilized by an Academy or by an abundance of books, lack precision, so that a foreign text translated into Pushtu and then retranslated into the initial foreign language is almost unrecognizable. The two great linguistic needs are the acquisition of a scientific terminology and the precise determination of the meaning of words in both languages used in Afghanistan.

Afghan pupils work in bad conditions. First, the school year contains too



many holidays. Thus one year only yielded 172 school days. Secondly, the method of fixing class hours from 8 a.m. to 1 p.m. cannot give good results. The class often starts late; the pupils become restless after midday and they often leave before time. Class hours amount to no more than 700 per year, a figure much below that in most modern States.

The food allowance is small. Pupils are sparingly fed in the morning, so that they quickly become tired and apathetic. The boarding school menus are not properly worked out, nor are they changed as frequently as they should be.

#### EXAMINATIONS

Far too great a percentage of pupils succeeds in passing the Afghan secondary leaving examination.

The considerable difference in the standards of the various establishments makes it unreasonable that their students should receive the same award.

Students who obtain a leaving certificate without any real secondary background are severely handicapped and are indeed quite unable to absorb a University education.

It seems to the Mission essential that the authorities should consider the inauguration of serious group examinations, to be held away from the schools under the supervision of an independent board of examiners.

#### COMPLETION OF SECONDARY EDUCATION

The following figures show the distribution of the number of students by grade during a recent school year. Passing final examination, 104; grade 12, 141; 11, 125; 10, 175; 9, 610; 8, 936; 7, 1416.

#### *Students Abandoning their Studies*

After grade 9 about half the total number continue their studies in special schools, such as the military school, the schools for mullahs, or the school for accountants.

Very few enter the technical schools and training colleges for teachers. The remainder go to swell the ranks of moderately efficient clerks, without much benefit to the State.

It would be worth while to take special steps to making better use of those students who abandon their secondary studies.

#### *Students obtaining the Leaving Certificate*

Some 60 students—often among the less brilliant, since many of the more capable go abroad—enter Kabul University each year. This is a ridiculously small number to support four faculties, and immediate measures should be taken to raise the annual intake. If they are not to become practising physicians, the majority of university students should be future secondary school teachers.

University students now receive a general education, but no professional training. Possible remedies for this situation are suggested in Chapter VI.

Students sitting for the leaving examinations have received their education

in English, German or French. At the University, while some lectures are given in these languages, the majority are in Pushtu or Persian. Books and periodicals are therefore required in five languages; this entails very great expense and it is moreover almost impossible to obtain satisfactory supplies.

It is therefore clear that secondary teaching in Pushtu or in Persian would greatly facilitate subsequent university training.

Certain secondary school leavers are granted scholarships for study abroad.

At present there are 107 students in foreign countries, the period of study being from 7 to 10 years.

Students abroad are now distributed as under:

| <i>Country</i> | <i>Number of students</i> | <i>Annual value of scholarship</i>      | <i>Equivalent<sup>1</sup> in afghanis</i> |
|----------------|---------------------------|---|---|
| United States  | 34                        | \$3,250<br>+ \$884 for travel           | 81,250<br>22,100                          |
| Switzerland    | 33                        | 7,440 Swiss francs<br>+ £135 for travel | 53,142<br>9,642                           |
| Great Britain  | 8                         | £480<br>+ £135 for travel               | 34,281<br>8,571                           |
| France         | 24                        | £360<br>+ £75 for travel                | 25,714<br>5,357                           |
| Pakistan       | 6                         |   |   |
| Iran           | 2                         |   |   |

*Observation 1.* It appears from this table that the cost per student varies considerably from country to country. It would seem reasonable for the Afghan Cultural Relations Department to arrange to send the smallest possible number of students to countries where the rate of exchange is unfavourable.

A study of the distribution of scholarship holders by country in relation to the nature of their studies reveals an even more urgent need for co-ordination.

<sup>1</sup> Approximations only, due to fluctuations in the exchange rate.

|                                     | Great Britain | United States | Switzerland | France | Pakistan | Iran | Total | %   |
|-------------------------------------|---------------|---------------|-------------|--------|----------|------|-------|-----|
| Telephone and Telegraph Engineering | 4             | 1             |             | 1      |          |      | 6     | 5   |
| Finance and Political Economy       | 1             | 6             | 18          | 10     |          | 2    | 37    | 34  |
| Agriculture                         |               | 3             |             | 5      | 6        |      | 14    | 13  |
| Mining                              |               | 7             |             | 2      |          |      | 9     | 8   |
| Teaching                            |               | 3             | 3           |        |          |      | 6     | 5   |
| Engineering: textiles               |               |               |             |        |          |      |       |     |
| motor vehicles                      | 3             | 12            | 12          | 2      |          |      | 29    | 27  |
| building                            |               |               |             |        |          |      |       |     |
| Journalism                          |               | 2             |             | 3      |          |      | 5     | 4   |
| Pharmacy                            |               |               |             | 1      |          |      | 1     | 0.9 |

*Observation 2.* Afghanistan being essentially an agricultural country, the proportion of agricultural experts (13 per cent) seems very low, while that of political economists and financiers (34 per cent) is unduly large.

*Observation 3.* Intending teachers who study abroad take B.A.'s or M.A.'s and neither of these are specific qualifications for teaching. None of the scholarship holders is specializing in pedagogic method.

*Observation 4.* Students in the same field (e.g. Telephone and Telegraph Engineering) are sent to a number of different countries. It would seem advisable to send abroad *homogeneous teams* containing not only future engineers, but also foremen and specialized workers.

The country of study should be chosen by the Afghan Government.

During their stay abroad these teams should be supervised and assisted by the Afghan Cultural Attaché.

Some such arrangement would: first, avoid the differences of opinion which now arise between Afghan technicians trained in different countries, and secondly, overcome the shortage of skilled labour which now brings to nought many schemes prepared by Afghan engineers.

#### SUMMARY OF RECOMMENDATIONS

*Aim.* To provide a secondary education of real worth in either Persian or Pushtu, so that the number of secondary school leavers may be multiplied by 10 in the near future, and by 80 or 90 at a later date.

*Means.* It will be seen (Chapter IX) that the Afghan Government is devoting more than 18 per cent of government revenue to education.

Disregarding the possibility both of rapid economic development within Afghanistan and of the advent of external financial aid, we shall consider certain methods which would be feasible with the present allocations to education.

### *Method I*

1. First class teaching.
2. Rapid extension of secondary schools—only possible through the training of many new Afghan teachers.

By this method the aim outlined above could be attained in three stages:

*1st Stage.* From March 1950 for a period of four or five years. Regrouping existing secondary schools would enable the State: (a) to make substantial savings, which could be used to finance new schemes, including the immediate opening of well-equipped boarding schools at Kabul for students from the provinces in grades 7 to 12; (b) to eliminate mediocre teachers too old for re-training.

The *lycees* of the capital could be reduced to four: "A" one residential *lycée* with British and American teachers for grades 7 to 12; "B" one residential *lycée* with French and Austrian teachers for grades 7 to 12; "C" one non-residential *lycée* at New Kabul for grades 7 to 9.

*Lycée "A"* would absorb all the British and American teachers at present in Afghanistan. It would thus be easy to offer those pupils who had started to learn English in grade 4 in 1948, a good and thorough education in that tongue.

*Lycée "B"* would employ all the French, Austrian and German teachers now in Afghanistan; by making use of French teachers who speak German it would offer education in French and in German to those pupils who had begun studying these languages in grade 4 in 1948.

*Lycée "C"* would use the best available Afghan teachers.

General education would be given in Persian, with some hours of Pushtu each week. In particular this *Lycée* would take over the pupils from the school at Nahari.

"D" one residential *lycée* for girls would be maintained.

Outside the capital, secondary institutions would be reduced to one school for grades 7 to 9 in each of the provincial capitals.

General education would be in Pushtu or Persian, according to the area.

These reforms would make for a great reduction in expenditure (closing of secondary schools at Nahari, Holm, etc.), amounting perhaps to several million afghanis.

The money thus saved, building of new establishments would be distributed, as would the building fund (afghanis 3.8 million), between elementary, secondary and technical education.

The *lycée* and technical schools in Kabul should be improved by:

- (1) The establishment of physical and natural science laboratories.
- (2) The introduction of lantern projectors and later of cinematographic equipment.
- (3) Completion of repairs and painting.
- (4) The erection of modern boarding premises (provision of individual cubicles, porcelain washstands, shower-baths, electric lighting, common rooms, light and heat).

The provincial secondary establishment should in due course be re-equipped to the same standard. A separate heading should be provided in the budget for school repair and maintenance.

The period of re-equipment and preparation would give time for the training of new Afghan teachers.

For one year after graduation, the new teachers would work as assistants to good foreign teachers in grade 7. Thereafter they would be appointed to teach in a provincial school.

Under this arrangement, the foreign teacher would give his course, let us say, in geography. The Afghan assistant would take note in his own tongue, whether Pushtu or Persian, not only of the course but also *all* activities during the lesson: pupils interrogated, questions asked by pupils, time spent on questions, work done with maps, the blackboard or the sand-box, home-work; and the other methods or aids employed.

Having recorded all this, the young Afghan teacher would give the same lesson, but in his mother tongue, to a class of grade 7, which would have been opened in March 1950—the foreign teacher being present to guide him if necessary.

In addition, the young assistant would follow special training lessons in a Faculty of Education, attached to the University, as suggested in Chapter VI.

Thus, at the end of the year, the benefits would be threefold: (a) recording of a good course for grade 7 pupils in Pushtu or Persian; (b) adequate training of new Afghan teachers; (c) beginning of general secondary education in Pushtu and Persian in the *lycees* of Kabul.

It is clear that one of the *lycees* "A" and "B" would rely on Pushtu as the main language of instruction, the other relying on Persian.

Over a three-year period it would thus be possible to introduce new pedagogic methods to Afghan teachers both in Kabul and in the provinces.

Pupils beginning in grade 5 in March 1950 would follow their studies up to grade 12 in a foreign tongue, but this experiment would not be renewed.

The new *lycees* would start from grade 7, and pupils from grades 1 to 4 would be redistributed among the primary schools of the town.

In every *lycée*, pupils in grade 7 would do four or five hours of Pushtu or Persian per week, as well as four or five hours of a foreign language under a foreign teacher.

Teachers from *lycée* "A" should give classes in *lycée* "B", and vice versa.

In the provinces, the teachers would attend model lessons at monthly meetings in the provincial capital under the supervision of an Afghan inspector or of a foreign professor from the Faculty of Education.

Every teacher should receive a weekly educational journal free of charge.

During this first period, programmes would be reconsidered, simplified and adapted by the Faculty of Education.

*2nd Stage.* A period of four to five years.

Efforts should be directed toward building modern provincial boarding schools, comparable to those in the capital.

Afghan teachers who had been in charge of grade 12, could then open complete secondary schools.

At the end of this period, Afghanistan would have 12 good *lycees* for boys and five or six for girls. Grades 11 and 12 would no longer be mere skeleton classes but would turn out hundreds of qualified students every year.

The higher standard of studies should bring to light pupils whose very educational achievements would rally the provinces to the cause of Education.

*3rd Stage.* It would then be time to demand further allocations for new buildings and higher salaries, and so to enter boldly on a new phase in secondary education.

## *Method II*

Afghanistan could spend more on education. In this case, the first stage could be covered in three or four years, and it would then be possible to proceed directly to the third stage.

In addition to this general overhaul, the Mission believes that reforms of lesser importance ought to be carried out as under:

1. The hours of study should be better distributed throughout the day.
2. The long vacation should be standardized and should take place in the summer (this seems only reasonable in an agricultural country, where crops are gathered in summer).
3. Rigid adherence to 45-minute periods should be abandoned.
4. Time spent at secondary school should be transformed into a true educational experience; the level of studies should be raised, object teaching and experiments extended; and verbalism fought with all possible vigour.
5. The regulations for the university entrance examination should be amended so as to make it a real test. This examination should be held at some *place other than* the school premises.

## V. TECHNICAL EDUCATION

### SCOPE OF THE REVIEW

This chapter deals primarily with technical education or education for industry, but education for commerce, the arts and agriculture will also be discussed. In considering technical education, it has been assumed that industrial personnel can be divided into three main groups: the operatives or craftsmen, who require vocational training and a knowledge of practical skills; the technicians or supervisors, who require technical education as well as a knowledge of craft skills; and the professional or directive group, who require a higher standard of scientific and technical education.

The aim of technical education, and to some extent of craft training also, is to enable man to understand and master natural phenomena so that he may acquire the ability to use the forces of nature for the benefit of the community. With this understanding, he can provide himself more effectively with food, clothing, shelter, transport, means of defence, and leisure. In Afghanistan all these benefits are now secured in a primitive way without much provision for technical education. If the country is to develop its resources, raise its living standards, and extend among more of its people the elements of culture, a great expansion of technical, commercial, artistic and adult education will be necessary.

But these developments and the economic development of the country must advance together. It would obviously be futile to produce large numbers of technicians and scientific experts for whom a static national economy could provide little or no employment. Furthermore, as economic development would involve highly important political and financial issues on which the Mission is not competent to advise, it can only suggest the kind of educational provision which will be necessary if the Government of Afghanistan decides to develop the resources of the country. Again, the priority accorded to the various development schemes may have a vital bearing on the provision for technical education, and on these priorities the Mission is largely without guidance.

This chapter deals then, first, with the existing industries and the educational provision necessary for their maintenance; and, secondly, with the educational requirements which would be entailed by any substantial development of Afghanistan's material resources.

### THE EXISTING INDUSTRIAL POSITION

In the course of its tour, the Mission visited all the major industrial undertakings in the country. These included hydro-electric power stations, textile mills, cotton baling plants, beet sugar factories, a coal mine, marble work-

shops, furniture works, potteries and soap factories. Lists of the various establishments, together with notes on their output and personnel, are given in Appendix 1. Some of the smaller establishments, e.g. a match factory, were not visited.

It will be seen that the country's present total industrial labour force lies somewhere between 5,000 and 10,000, a very small total indeed for a population exceeding 10 million. The measure of industrialization may perhaps be effectively illustrated by the output of electric power. The installed capacity of the existing plant is 7,800 kW; and output is in practice really insignificant, and herein lies an effective deterrent to any further industrialization.

In addition to the industrial workers, there are of course many people engaged in building operations and in small home industries, such as carpet-making.

Of the 10,000 industrial workers, the greater number are semi-skilled operatives, engaged in spinning and weaving for example, who require only the minimum of instruction for the manual processes involved. The numbers in the supervisory grades are small and those of the directing staffs are very few indeed.

#### EXISTING TECHNICAL EDUCATION

The following schools provide technical education: School for Mechanical Crafts (Kabul), 132 students; School for Carpentry and Tailoring (Kabul), 156 students; School for Building and Carpentry (Kandahar), 60 students. Statistical and other details of these schools are given in Appendix 2.

The School for Mechanical Crafts, founded in 1937, was equipped largely upon German advice. The school aims at giving instruction in the mechanical skills of fitting and machining, forging, welding, casting, etc. The school is non-residential so that it can recruit only from the Kabul area. The course extends over four years, following the primary school stage; half the total time of 36 hours per week is devoted to practical work, half to theory. Recruitment to the school is not good, and numbers fall off badly in successive years (61 in first year to 12 in the fourth year). The school is very well equipped with a variety of machine tools, but an acute shortage of practice material, together with a lack of accessories and small tools, diminishes the effectiveness of the institution. Unless this shortage can be overcome, the workshops will become museums. The teaching staff is largely Austrian and the use of interpreters is necessary. This is not a very satisfactory arrangement; it ought eventually to be possible to appoint Afghans sufficiently competent to give the craft instruction—which is not at a very advanced level.

The School for Carpentry and Tailoring in Kabul, also non-residential, is organized on the same lines as the School for Mechanical Crafts. It exhibits the same malady of a falling off in numbers, from 96 in the first year to 11 in the fourth.

The School for Carpentry and Building at Kandahar, only in its second year, is largely experimental. It is hoped to secure an annual entry of 40 boys for a four-year course.



It will be seen that the craft schools in Kabul and Kandahar aim at providing young skilled workers for two main industries. The actual output of the engineering school is very small and the nominal output is probably as much as could be absorbed by the few Kabul factories. But if the school were made residential—as is recommended—it could attract boys from the provinces, to which they could return after training. It would thus operate on a sounder basis and would serve the country better. At Konduz, for example, the Mission saw a very good general-purpose workshop with manufacturing facilities that were being well exploited. Afghanistan needs this kind of establishment in many of its towns, and these works should look naturally to the College for the initial training of its young operatives.

A notable omission from the curriculum is the absence of courses on automobile maintenance and electrical installation work. In view of the dependence of the country upon road transport, a flow of well-trained youths able to diagnose and rectify faults in motor vehicles would seem to be a most urgent requirement. The automobile repair factory in Kabul should be able regularly to absorb a number of such trained youths, while larger towns of the country should have substantial requirements—which it will only be possible to meet effectively if the college at Kabul is made residential. The provision of a supply of youths trained in electrical installation work is perhaps less urgent; these will only be required for the extension of electrical undertakings generally when power becomes available. Nevertheless, the provision of instruction in this important branch of technology should be no longer delayed. Suggested syllabuses for each of the two branches discussed in this paragraph are given in Appendixes 3 and 4.

Similar remarks could be made concerning telephonic and radio communications, which must develop considerably before long. Preparations should therefore be made for the inauguration of courses for communications operatives, in which sufficient theory is included to enable the craftsmen to understand their work.

This kind of pre-industrial training in craft skills, given necessarily in a school atmosphere, has been criticized in some countries as providing an unsatisfactory approach to the problem, particularly in mechanical engineering. It has been argued that the role of a school should be mainly to give instruction in the sciences underlying practice and in the essential techniques; and that the craft skills should be acquired in industry under industrial conditions. This, of course, presupposes the existence of well organized industries into which youths can be received and properly trained. This is hardly the position in Afghanistan. It would therefore seem that for some time to come the extension of craft schools on the existing pattern in the mechanical and electrical technologies should be energetically pursued. Nevertheless, where an efficient works exists, the possibility of the works and the college sharing in the education and training of the youths ought to be considered. At the automobile repair factory, for example, youths could be released to attend the college on a part-time basis for the acquisition of the necessary technical knowledge, the youths receiving their practical training in the factory.

As far as building is concerned, the crafts of bricklaying, carpentry and plumbing as practised in Afghanistan call for very little science or technical knowledge. The shortage of timber, the absence of cement factories, the

impossibility of using steel, the neglect of sanitation and the prevalence of earthquake shocks have led to a traditional and non-scientific approach to the various problems, resulting in a poor standard of domestic architecture. An improvement can come, however, only through the better education of young operatives; the inauguration of building craft technical schools in many of the principal towns should therefore be encouraged, with the proviso that the instruction should not be limited to practice but should include much building science. There is no reason why the instruction should not be given on a part-time basis.

The improvement of the craft schools will however do nothing immediate to help overcome the existing shortage of technicians. At one end of the scale, Afghanistan has an extremely small number of native engineers assisted by well-qualified foreign specialists; at the other end of the scale, the country receives the small annual output of potential craftsmen from the schools mentioned above; in the centre there is nobody.

In industrialized countries, the middle stratum is filled by men who have received a sound secondary education with a scientific or technical bias. On this basis all else is built; and it is the basis which is almost completely lacking in Afghanistan. No improvement in training at the craft level, or in education at university standards, will bring anything like as much advantage to Afghanistan as the creation of a number of technical secondary schools in which the best youth of the nation would receive a sound general and scientific education coupled with instruction in the manual arts. There need be no lowering of accepted secondary school standards in these schools; what they should offer is a less academic approach and a less literary curriculum. The output from these schools ought to be scientifically-minded young people with an aptitude for constructional work, who would gradually infiltrate into every walk of life and prepare the way for the next step forward—the creation of technical colleges and possibly of a faculty of technology at the university. The education given in these schools should not be unduly specialized, but should fit a youth to enter any of a number of vocations. Without going into details here, it is suggested that the curriculum should, *inter alia*, make provision for mathematics (including algebra, trigonometry and geometry), science (including chemistry, properties of matter, heat, light, sound, electricity and magnetism, mechanics), elementary technical drawing and practical geometry, and workshop practice in metal and wood. The operation of machine tools would be an essential element in this workshop training, which should not be mere handicraft work.

It must be emphasized that these suggested Secondary Technical Schools would be doomed to failure if full provision were not made for experimental and practical work; the students should *do*, should *make*, and should *experiment*, rather than listen and write. The recruitment of suitably trained staff for such schools is a problem which probably transcends all others in difficulty. As far as Kabul is concerned, the building for the new technical college (referred to on page 49) now about half finished, could be used for the first of the residential technical schools. It might be expanded later for use also by the technical college until this institution needs larger and separate premises.

#### EXISTING COMMERCIAL EDUCATION

There are only two schools to meet the requirements of commerce, both at Kabul. Statistical and other details are given in Appendix 2.

The School for Secretaries is residential; the course extends over three years, and is taken on completion of an elementary school course. More than half the students come from Kabul, the remainder from the provinces. The aim of the School is to provide accountants and secretaries for government departments, and the curriculum has been drawn up with this in view. The output is limited to 100 a year. The School of Commerce receives its recruits from five preparatory commercial schools, two of which are in Kabul (one residential) and three in the provinces (all residential). Reference to these preparatory commercial schools is made in Chapter IV.

The School of Commerce offers a six year post-elementary course, the first three years covering the same ground as the preparatory schools. Eventually this preparatory stage in the School of Commerce will disappear. The programme of study in the last three years covers Economics, Commerce, Accounting, Banking, Theology, Statistics, Economic Geography and History, History of Trade and Commerce, and Correspondence. As the school has been in existence for only six years, there has so far been no output. Many foreign teachers are employed, with interpreters. The remarks regarding staff made on page 43 also apply here, but to a lesser degree.

The premises, and particularly that of the School of Commerce, leave much to be desired. Amenities are few, and features usually considered essential, such as a good library, are absent. The work done in both schools is however creditable, and could with advantage be considerably extended. Similar schools should be provided in Kandahar and Herat, and perhaps elsewhere, as commercial undertakings develop.

It would appear that in the whole of Afghanistan there are no classes in the office arts of shorthand and typewriting. There are very few people in the country who practise either of these arts. The complete prohibition of the use of female labour in offices, the small scale of business operations involving correspondence, the absence of large stores and trading organizations, and the language difficulty, combine to prolong the existence of the present long-hand copying arrangements. Economic development will, however, bring commercial expansion in its wake, and plans should be made for the introduction of shorthand and typewriting operations and for the teaching of these subjects in some of the schools.

#### THE INDUSTRIAL EXPLOITATION OF AFGHAN RESOURCES AND THE RELATED TECHNICAL EDUCATION REQUIREMENTS

Some remarks upon the country's resources and their exploitation have already been given in Chapter I. While the Mission was able to secure useful information in the possible future development of the country from various Ministers of State, it was not able to piece together a firm and comprehensive programme on which sound educational proposals could be based. The Mission fully appreciates that political and financial considerations may preclude the publicizing at this stage of long-term plans of the kind it had hoped to study, but in the absence of this detailed information its recommendations must be less definite than they might otherwise have been.

The following notes give the Mission's views on developments in various fields and provide the basis for the subsequent educational recommendations:

### *Transport*

Taking the new road from Kandahar to the Pakistan frontier as evidence, it would appear that the Government of Afghanistan has decided in favour of road rather than rail transport. If this is so, both the surface and gradients of the country's roads will require much attention before motor transport can give reasonable service. Many steel bridges will be required to replace unsafe timber structures.

The organization necessary for this essential development would be similar to that now run by the American construction firm at Kandahar, and if Afghanistan is eventually to undertake this work without foreign aid, civil engineers, surveyors, and technicians will be required in numbers comparable to those employed by the Americans. Similarly, heavy equipment for excavation and road-making will be required on at least the present scale. As a corollary, railway engineers, civil, mechanical or electrical, will not be required.

### *Oil Drilling, Coal Mining, Ore Extraction*

From information provided by the Minister for Mines, Afghanistan has good oil reserves, abundant and easily worked deposits of rich chrome ore, and substantial quantities of zinc, lead, and iron ores; there are good evidences of deposits of magnesium, manganese and copper. Gold and beryllium also appear to be available. None of these potential sources of wealth has yet been tapped. There is a scheme to install a metallurgical plant to deal with the ore deposits of the Kandahar area.

The few coal mines in Afghanistan are not being fully exploited. The coal from the mine visited by the Mission was very friable and had to be used either as dust or in briquet form. The output of the mine was small; if other mines are similar, the country's coal resources may prove to be only a minor economic factor.

The Mission was informed that the Government proposes to give priority to the exploitation of petroleum reserves, not only in order that Afghanistan's imports of petrol and oil—now costing three million dollars annually—may be reduced, but also that much needed supplies of bitumen may be made available for road surfacing. The development of metallurgical industries must await the erection of the projected barrages at Kandahar, which would supply the necessary electric power. The full exploitation of the country's mineral reserves will mean that formidable natural obstacles and serious transport difficulties have to be overcome.

It is probable that for some time to come Afghanistan will have to rely upon foreign capital and expert technical advice for the development of its various mining industries. The country should eventually have its own surveyors, mining engineers, and geologists, but these will have to receive their training abroad for some time to come. Afghanistan could itself, however, meet the requirements for technicians and skilled craftsmen, if steps were taken now to provide the necessary educational establishments.

### *Hydro-Electric Schemes*

Afghanistan's desperate need for more electric power, together with the availability of unused water power in such vast quantities, indicates that hydro-electric undertakings must be high on the list of priorities.

Electric power plants will usually be linked with the water conservation and irrigation schemes, discussed later.

Afghanistan's contribution to hydro-electric undertakings is unlikely to extend to the design of equipment, but it should certainly cover the provision of technicians and craftsmen for the operation and maintenance of the installations. The local production of cement, for use in dams and reinforced concrete work generally, would seem to be a most desirable development.

### *Communications and Power Transmission*

Afghanistan's telephone and radio networks are at present inadequate; great extensions will be required, and their urgency will become increasingly apparent. Similarly, the transmission of electricity to factories and houses will prove to be a major development. The planning and direction of these services will require highly trained engineers, whom Afghanistan will hardly be able to produce at home for many years. Reliance must therefore be placed either on Afghans trained abroad or upon foreign specialists. The technicians and craftsmen, on the other hand, could be wholly Afghan, if suitable provision were made for their technical education; the number required may prove to be large.

### *Aviation*

The location and surveying of airfields, their construction and servicing, all call for high grade professional and technical skills. Similarly, the servicing of aircraft requires first-class mechanics. Trained Afghan personnel should be able to undertake a substantial part of this work.

### *Extension of Existing Factories*

In textiles, beet sugar, etc., and the establishment of new factories, e.g. for cement.

These developments seem to be overdue if the country is to approach a measure of self sufficiency. The design, and perhaps the installation, of new plants will, it is assumed, have to be a foreign responsibility for many years, the Afghan share being inevitably restricted to maintenance and operation. Even the fulfilment of these latter tasks will demand first-rate technicians, the absence of whom is already being felt in more than one of the existing factories.

### *Proposed College of Technology*

If the foregoing analyses are reasonably accurate, the educational implications are clear. Afghanistan needs a central College of Technology offering post-secondary school courses in a variety of branches of engineering, metallurgy, chemical engineering, applied physics and similar subjects; with such a syllabus it would aim to produce well educated technicians rather than uni-

versity graduates of high academic competence. For many years, Afghanistan will not have the resources to design or to manufacture complete machinery. This plant will almost certainly have to be of foreign origin, and hence Afghanistan will not yet require the research-designer type of engineer. What the country does require, however, are numbers of competent men, qualified practically and theoretically, able to direct repair and maintenance work, and possessing the knowledge and initiative enabling them to improvise and adapt. The presence of even a few of these men now would greatly benefit the country.

The establishment of a Technical College—models for which may be found in many countries—ought to await the upgrading of secondary school standards, particularly in science, and the inauguration of some good technical secondary schools. It would be useless to try to superimpose what is required on the altogether inadequate scientific and technical bases of most of the present secondary school products. It would probably be time enough if the suggested college were planned to come into full operation in about 10 years. Nevertheless, as is suggested in page 45, there is no reason why some departments of this college should not have modest beginnings on an experimental basis as soon as the half-completed college in Kabul is ready; it has been suggested earlier that this college might become, in the main, a technical secondary school. Eventually, of course, the technical college would require separate and perhaps extensive premises. There is much to be said, however, for small beginnings and a natural growth.

The implication of the foregoing suggestions is that the establishment of a faculty of technology in the University of Kabul at the present time would be premature. As a long-term policy this development should of course be envisaged, but it should follow and not precede the measures recommended above. The Central College of Technology might well become the Faculty of Technology of the University.

#### THE DEVELOPMENT OF AGRICULTURE AND HORTICULTURE, AND THE RELATED EDUCATIONAL REQUIREMENTS

The overwhelming majority of the Afghan population works on the land, even though the cultivated area does not amount to more than 20 per cent of the total. From this area Afghanistan produces almost enough food to maintain its people, although not very adequately. It is estimated that the area under cultivation could be increased by at least one half; this increase, together with a better selection of seed and the use of fertilizers, would certainly enable a much larger population to be adequately maintained.

Both agriculture and pasture require an extensive irrigation system because of the long period of absolute drought in the summer and autumn; when water is available, the fertile soil in the plains yields good harvests and crops. The many rivers in Afghanistan have very great irrigation possibilities, and the planning and execution of water conservation and irrigation projects, such as those at Kandahar, would seem to be the country's most urgent need. The civil engineering side of these schemes would normally be linked with the hydro-electric schemes mentioned on page 48, but advice on their best use will be required from well trained experts in soil technology possessing a most intimate knowledge of the local soils and conditions. Similarly, for the

improvement of crop and animal husbandry, continuous scientific study is necessary over a long period.

A college of agriculture was established in Kabul in 1943, and some 100 students are now taking a three years course. The numbers in each year are: 46 first, 33 second, 21 third. Recruitment is from the whole country and entrants must have had nine years schooling. The staff is partly Afghan, and the services of foreign experts undertaking research for the Ministry of Agriculture are available on a consultative basis. The curriculum includes botany, zoology, physics, chemistry, agriculture, fruits, entymology, meteorology, dairy technology, animal husbandry and diseases, plant diseases, machinery and economics. The almost complete absence of laboratory equipment and the lack of textbooks and experienced staff have, however, made it impossible to adhere to the syllabus. The foreign consultants are not lecturing on a planned basis but are very fully occupied with research.

The college buildings are poor and provide little more than a series of classrooms and sleeping accommodation. There is no experimental farm.

Clearly, the college has a potential value that cannot be rated too highly. Its students, if suitably employed (and if the farmers and cultivators of Afghanistan will take advice) can greatly improve the standards of husbandry and increase the yields and the quality of crops, fruit and livestock. If this desirable end is to be attained, the college must be properly equipped and more adequately staffed. In existing conditions, it cannot produce the qualified men required. Further, an experimental farm is not a desirable adjunct but a necessity.

It is recommended that the subjects of soil conservation and afforestation be studied by a section of the students. Careful husbandry appears to have prevented the worst evils of soil erosion in certain regions; but the danger is an ever-present one requiring vigilance on the part of cultivators inspired by sound and timely advice given by graduates from the college. Afforestation is a matter that Afghanistan can hardly afford to neglect any longer. The constant inroads by humans on the small remaining forest areas, together with the savage destructive powers of herds of goats, render this issue not merely one of tree planting but of the close control of people and animals, a much more difficult problem. The country needs trees in very large numbers, not only to provide timber and fuel but to humidify the extreme dryness of the air in many areas.

The establishment of a parallel college at Kandahar, specializing in horticulture, is a matter for careful consideration. The abundant fruit crops of Kandahar are an important element in the economy of the country. It is probable that much can still be done to improve varieties and to increase yields; it is certain that drying, canning, and storing methods are susceptible of improvement. The possibilities of the "deep freezing" of fruit for the Indian market would be a matter for investigation by such a college. It is understood that there are no apiaries in Afghanistan. The potentialities of commercial bee-keeping in the Kandahar and Djelalabad areas would seem to be very great and worthy of close study. The Mission was puzzled to notice that many crops of great value, which are grown in other comparable parts of the world, are not cultivated in Afghanistan despite the seemingly favourable conditions. Olives, esparto grass and asparagus, for example, are crops of high export value; the raising and growth of which the College of Agriculture will, among other things, doubtless study.

## ARCHITECTURE AND THE ARTS

These two branches of learning are taught in no single institution in Afghanistan. The buildings and products of the country reflect this lack. Apart from the larger mosques, Government buildings and the mansions of wealthy men, the buildings of Afghanistan have only slight architectural significance. Similarly, the designs of carpets, rugs, furniture and marble work are traditional to a degree. The bazaar jewelry is usually crude and of a poor style. Printing is limited to a few newspapers and Government publications and, of course, the Koran; there are almost no illustrated journals and books in the homes of the people, and this has an impact of the greatest possible importance upon education. The arts of painting and sculpture languish.

In these circumstances, to establish a college of architecture and art on any substantial scale might be to court failure. The architect from such a college, the designer of furnishings or jewelry, the illustrator, the artist and the sculptor would probably remain unemployed. Yet the present situation is intolerable in a country with a population so numerous and vigorous as that of Afghanistan. The suggestion is therefore made that, in spite of the difficulties, the step should be taken of establishing a small central college of arts and crafts, which would at first operate on a part-time basis and serve the design staffs of the Kabul factories. The next step would be to attract students from other towns, notably Herat, who would remain full-time for short block periods. The future of the college would depend, as is usually the case, on the vitality and quality of its first principal who should, if possible, be an Afghan—perhaps educated in a foreign country.

## THE EDUCATION OF NURSES

The small school for Nurses at the Kabul Hospital has a total of 69 students. The course covers three years and the numbers in the various stages are: first year, 41; second year, 21; third year, 7. The programme of theoretical studies occupies 18 hours per week and includes Hygiene, Physiology, some Pharmacology, the elements of Gynaecology, Hospital Administration, Persian and French.

This school could not be inspected by the members of the Mission but was visited by its secretary. From her report it is clear that the products of the school are destined to be of the greatest possible value to their country. A very substantial increase in the numbers of trained nurses (by a better co-ordination with the girls' secondary schools) would seem to be a prerequisite for any great advance in hygiene and curative medicine.

## SUMMARY OF RECOMMENDATIONS

1. An improvement in secondary school standards, with an emphasis on science teaching and experiments. See page 45.
2. The establishment of a number of *Technical Secondary Schools* beginning with a residential school in Kabul. The premises of the half-completed technical school are recommended as suitable for this first residential technical school. See page 45.



3. The establishment, some time in the future, of a Central College of Technology, the nucleus of which might at first be housed in the proposed Kabul residential technical secondary school. This Central College of Technology might become the Faculty of Technology of the University, the establishment of which ought to be postponed for some years. See page 49.
4. The establishment of a Central College of Arts and Crafts operating at first on a part-time basis. See page 51.
5. For the College of Agriculture:
  - (a) Much better accommodation, equipment and staffing.
  - (b) The provision of an experimental farm.
  - (c) The introduction of studies in soil conservation and afforestation.
  - (d) Research into the growing of additional crops.
  - (e) The establishment of a college of horticulture at Kandahar. See page 50.
6. The School for Mechanical Crafts:
  - (a) The opening of a boarding school.
  - (b) A better supply of practice material and small tools.
  - (c) The introduction of courses for motor vehicle mechanics and electrical installation mechanics.
  - (d) The introduction, later, of courses for radio mechanics.
  - (e) The introduction of part-time courses. See page 44.
7. For the School for Building:
  - (a) The introduction of part-time courses.
  - (b) The introduction of studies in building science.
  - (c) The establishment of Schools of Building in other towns. See page 45.
8. For the Secretarial and Commercial Schools:
  - (a) Establishment of similar schools at Kandahar and Herat, and perhaps elsewhere.
  - (b) The introduction of courses in shorthand and typewriting. See page 46.
9. For the School for Nurses:  
A considerable increase in the number of pupils. See page 51.

## VI. THE EDUCATION OF TEACHERS

### TEACHER EDUCATION IS A PRIMARY NEED IN AFGHANISTAN

Among the several possible ways of improving Afghan schools, the most important is the training of good teachers. This is the most crucial, powerful and immediately effective means of raising the standards of education in any country. It is, furthermore, the key to educational progress; without it improvements in curriculum-making, administrative, and even financial practice will be difficult if not impossible. The primary task for Afghanistan today, tomorrow, and for many years to come is to produce more and better educated teachers.

### PRESENT TEACHER TRAINING METHODS

At present, there are at Kabul, situated in adjoining buildings, two teacher-training colleges (normal schools) for men. One of these institutions, a three-year school of Grades 7 to 9, prepares teachers for the elementary schools. The other, a six-year school (Grades 7 to 12) furnishes teachers for the first stage of secondary education. These colleges are boarding schools accommodating young men from all parts of the country. The students are given board, lodging, clothing, tuition, and even pocket money at state expense.

The curricula of these two schools are much the same as those of the ordinary secondary schools for the corresponding years, described in Chapter IV. In addition, the students receive some instruction in pedagogic theory and a very short period of practice teaching. In the three-year Elementary Training School, practice teaching is given in the ninth class; in the Secondary Training School, in the twelfth class. In fact, these student-teachers have a practice period of only 20 days in all. Since the teachers in the practice classes are sometimes students from the training school who have graduated one year earlier, it is evident that the practical preparation of the student-teachers is entirely inadequate.

The language of instruction is Persian, with some classes in Pushtu. English is taught as a foreign language in all classes of the Secondary Training School.

Buildings, equipment, library, and laboratory facilities are more extensive and better organized than in the average Afghan secondary school.

The teaching staffs of the two training schools are also generally superior in training and experience to those in most secondary schools.

Student activities are fostered more successfully in these training schools than in the average secondary school. The Mission observed a lively and interesting play, written and presented by training school students, with musical and interpretative accompaniments also given by students.

The Elementary Training School has a total of 463 students enrolled, with 191 in Grade 7, 134 in Grade 8, and 138 in Grade 9.

The Secondary Training School has 426 students distributed as follows: 124 in Grade 7, 69 in Grade 8, 65 in Grade 9, 63 in Grade 10, 53 in Grade 11, and 52 in Grade 12. The total output of teachers from these two schools is therefore less than 200 per annum, which is not enough to furnish more than a small fraction of the total number of new teachers needed in Afghanistan.

#### SUGGESTED CHANGES

The Mission suggests a considerable reorganization of the programme of teacher-training along the following lines:

1. The two training colleges in Kabul should be combined into a single three-year school with instruction in the Grades 10 to 12 only, for the training of elementary teachers. The language of instruction should be Persian.
2. A parallel training college for elementary teachers, with instruction in Grades 10 to 12, should be established at Kandahar. The language of instruction should be Pushtu.
3. Two similar colleges should be established immediately for girls, one with Pushtu and the other with Persian as the main language of instruction.
4. A faculty of education should be established in the University of Kabul. This faculty should provide a one-year course for the training of secondary school teachers. A further course of study should be organized by this faculty for the training of directors, headmasters, school administrators and inspectors.

#### THE TRAINING (NORMAL) COLLEGES

The training college for men at Kabul could accommodate 800 boarding students and 200 day students with its present facilities. It is assumed that the college for men at Kandahar would be at least as large. The two colleges for women would have to grow from small beginnings but would need to be in time as big as those for the men. The four colleges would thus eventually produce about 1,200 new elementary teachers annually.

The training colleges would recruit their students from classes of Grade 9 after scrutiny of school records and examination of the candidates' physical and personal aptitudes for teaching.

The Mission recommends that the curricula of the training colleges should be at once simpler and more pointed than those of the present secondary school Grades 10 to 12. Pushtu, Persian, philosophy (with Arabic religious readings), and the work of literary and dramatic clubs would comprise one main block of activities. Natural sciences and mathematics, emphasizing such subjects as agriculture, horticulture, forestry, and animal husbandry, and garden clubs and field excursions would be the kind of activity needed in another main area. Social sciences, with emphasis on the history and geography of Afghanistan and her neighbours, and discussion activities would make up a third block. Health and physical education, with sports and games, would make up the fourth main field. Arts, crafts, and music, with great opportunities for the development of individual and small-group interest and differentiation between

boys and girls, would constitute the fifth chief area. The final block of study would centre around observation and practice in the elementary schools, with discussions of curricula and methods.

All these activities should be directed by experienced and well-trained teachers. The subjects should be taught with constant reference to their counterparts in the elementary schools. The students should acquire their professional orientation not from having educational theory preached to them but rather by taking part in a daily process of artistic and competent teaching and learning; their subjects should be made professional by being presented as the instruments of skilled teachers instead of remote disciplines to be studied for their own sakes, while their observation and practice should take place in elementary schools with the best available teachers and supervisors to criticize them.

The two Pushtu-speaking training colleges, one for men and the other for women, should not only have Pushtu as the language of instruction but should also be given freedom to work out certain special problems peculiar to their region, people, and language. They will have to work with a colloquial language for which literature, scientific vocabulary, and textbooks are lacking. They may have a more homogeneous group of students than the normal colleges in the Persian-speaking areas. They will have a somewhat different body of history, geography, art, music, recreation, and society to consider in their educational programmes.

Freedom for these training colleges to display initiative, originality, and creativeness in the preparation of teachers is desirable for a reason even more important than any connected with the differences between the Persian-speaking and Pushtu-speaking areas of Afghanistan. The four schools should be given freedom, encouraged to exercise freedom, and rewarded for displaying freedom, even if they were preparing teachers for exactly the same kinds of schools with people who were all alike and living in completely standardized communities. True educational progress in any country is likely to start in schools for the education of teachers. Nothing stimulates teacher-training institutions more than the possibility of one school doing something different and better than its fellow school. If these schools are given some freedom, it may be predicted confidently that each of them will be borrowing ideas from the others within a matter of months.

#### THE FACULTY OF EDUCATION

The Faculty of Education at Kabul will have as its goal the preparation of secondary school-teachers, headmasters, inspectors and administrators. It will receive students from two main sources: first, students who have completed their studies in the faculty of science or the faculty of letters. For one year after graduating they will receive instruction in educational theory and practice in the best secondary schools of the Kabul area. Secondly, graduates of the training schools and persons who have completed the year's work outlined above. These students will attend the Faculty of Education for training as administrators, inspectors, and directors of schools.

The Faculty of Education would have to start on a small scale, but should number at least 200 students early in its existence. It would serve not only as a training school for administrators but also as a pilot institution for the development of education in Afghanistan. Seminars, conferences, lectures, psychological

and educational research would make the faculty a living force, in perpetual ferment, working for better education throughout Afghanistan.

The Mission recommends that a foreign expert, a specialist in teacher education and in national education systems, should be invited to inaugurate the Faculty of Education. He should spend from two to four years in Kabul and be replaced by an Afghan who had worked in the faculty from its inception.

The remarks previously made concerning the necessity of giving freedom to the new training schools apply with even greater force to the Faculty of Education. The dean of the faculty and his colleagues must be given not merely permission but active encouragement to innovate, investigate, try, and discard all sorts of educational research and instructional projects. With reasonable success in picking the dean and staff, this policy of maximum freedom will pay handsome dividends. The new faculty may thus become a steady source of highly skilled teachers, principals, and inspectors. Some of the third year graduates of the faculty could go on to advanced work for a doctorate in education or in subject fields in foreign universities and so contribute to the science of education not only in the Faculty but also in Afghanistan as a whole.

#### THE TRAINING OF AFGHAN TEACHERS ABROAD

There are, during the current academic year, 107 Afghan students studying abroad with grants from the Government. (See Chapter IV.) According to the best advice available to the Mission, none of these students is primarily engaged in the study of education as a profession, and few are even preparing to teach.

The Mission believes that there should be some Afghan teachers studying education as a career in foreign countries, and that certain other teachers (e.g. lecturers and instructors in engineering, metallurgy, agriculture and other technical subjects), should be specifically prepared in foreign institutions for their career. The first group would be particularly valuable as professors in the training colleges and the faculty of education, while the second could be used to replace the temporary foreign teachers and to act as staff members in the new technical secondary schools. (See Chapter V.)

#### SUMMARY OF RECOMMENDATIONS

The Mission recommends the following measures, listed here in order of priority, for the improvement of teacher education in Afghanistan.

1. The establishment of four teacher-training colleges for the preparation of elementary teachers—two for men and two for women. The two existing training colleges at Kabul would be merged into one. (One college for men and one for women should be in each of the two main language areas.)
2. The establishment of a faculty of education at the University of Kabul, open to both men and women (see Chapters II, IV, and VI) for the training both of secondary school-teachers, and of directors, inspectors, and administrators of elementary and secondary schools. A foreign expert should be employed to set up this faculty and administer it for a period of from two to four years.
3. Some Afghan teachers should be sent abroad to study education as a career or to prepare for teaching a particular subject.

## VII. ORGANIZATION OF EDUCATION—INSPECTION, ADMINISTRATIVE AND OTHER SERVICES

### ORGANIZATION OF SCHOOLS

In addition to its teaching staff, the smallest school invariably has a very large supernumerary tail. The Mission has been supplied with the following figures, which it regards as typical:

|                          | <i>Pupils</i> | <i>Teachers or<br/>lecturers</i> | <i>Other employees</i>  |
|--------------------------|---------------|----------------------------------|---|
| Primary School           | 379           | 9                                | 9 { <i>shaperassis</i> : 6<br><i>secretaries</i> : 2<br><i>tahwildars</i> : 1   |
| Secondary School         | 188           | 8                                | 15 { <i>shaperassis</i> : 8<br><i>secretaries</i> : 6<br><i>tahwildars</i> : 1  |
| Teacher Training College | 406           | 31                               | 52 { <i>shaperassis</i> : 40<br><i>secretaries</i> : 9<br><i>tahwildars</i> : 3 |

The Mission has already commented on the *tahwildars* (see Chapter IV). The existence of this sort of functionary is extremely harmful. The teacher, like the artist, must have as much freedom as possible at all times. The only comment that can be made is that the teacher training college listed above has three *tahwildars*, and that its life is more or less paralysed as a result.

There are of course far too many *shaperassis*. They are poorly paid and do little work; a great saving could be made by reducing their numbers considerably and by paying reasonable salaries to those retained.

With regard to secretaries, it seems hard to believe that a school with less than 200 day pupils should really require six office employees.

The following simple rules would put this matter in better order:

1. The director of a school should assume complete responsibility for the school, the staff, the buildings and the teaching equipment.
2. In boarding schools, a bursar should be given certain responsibilities by the director of the establishment.
3. In schools with day pupils, there should never be more than one *shaperassi* for every 100 pupils; in boarding schools there should be not more than four *shaperassis* for every 100 pupils.

4. In the school offices, a director should have one clerk or office employee for every 200 pupils or fraction of 200.

The measures enumerated above would require that the director would reside in the school for which he is responsible. As the schools stand in large grounds, there should be no difficulty whatsoever in rapidly constructing modern living quarters for every school director.

Furthermore, the directors should have much greater financial responsibilities. For example, it is difficult to understand why potato purchases for the teachers' training college should have to be approved by the Director for Technical Education. The present organization would be greatly improved if school directors were given more financial autonomy. Special inspectors would, of course, supervise their activities and their accounts would be periodically submitted to the central authorities.

#### CENTRAL ADMINISTRATION

With national education suffering from excessive centralization, the directing organism appears to be both awkward and ineffective. It has, moreover, a very large staff. There are more than 70 employees to do the administrative work connected with less than 3,000 teachers. Every action requires individual decision so that each director of education signs from 20,000 to 25,000 letters a year. It would seem very necessary to change this system and to establish the practice of dealing with all routine questions by means of general circulars or printed leaflets.

#### INSPECTION SERVICES

The inspection of scholastic establishments is rendered difficult by the distances between schools and by the bad condition of the roads. It is sometimes necessary to travel for five days each way on horseback to inspect a primary school. Making full allowance for these difficulties, however, the provision of one inspector for five or six schools seems to be excessive. It would certainly be more profitable to have a much smaller staff of highly qualified inspectors, each equipped with an official car.

#### CONCLUSIONS

In conclusion, then, the administration and the services of the Ministry of National Education appear to be too centralized, too awkward, and not very effective. The present situation could be greatly improved by measures of decentralization, e.g. by granting much more independence to school principals and regional directors, and by the elimination of all useless staff so that better pay may be given to those who remain (see Chapter IX).

## VIII. ADULT EDUCATION

### SOME CONCEPTS OF ADULT EDUCATION

There are as many definitions of adult education as there are approaches to its problems. Sometimes it is regarded primarily as a process whereby persons beyond the usual school age are taught what their society thinks they should have learned as children. In such a case, there is a national tendency to confuse adult education with fundamental education. Thus a country may embark upon a programme of illiteracy-eradication among adults on a grand scale and call it fundamental education. The "fundamentals" may be conceived as being merely the ability to read and write at the level of a nine- or ten-year old child, or they may be regarded as including also those basic skills and the knowledge of arithmetic, hygiene, history, geography and civics which every person is supposed to need for intelligent participation in the life of a modern community.

The Mission believes that neither this nor similar current notions of fundamental education are sufficiently precise to be applied to the study of adult education in Afghanistan. It holds that each nation, like each national system of education, is a cultural entity; that each element in the country's life is tied to all the others and that a programme of education developed in one country cannot be safely applied to another country without first carefully determining how the two countries differ from each other.

In presenting the following statement, the Mission emphasizes the idea that, to be wholly effective, adult education in Afghanistan must be truly an Afghan product. In Djelalabad, for example, it will take its theme from the rice fields in an attempt to show adults how to improve their lives and simplify human labour. The very orange groves will serve as a theme for adult learning, while the fiery Northern horses will help the men of Mazar-i-Sherif to better themselves by improving their methods of care, cure, breeding, selection, and sale of these admirable beasts. The mighty Helmand river will perhaps afford the men of Kandahar the opportunity of constructing the first boats in the country and thus of learning what the people of a maritime land already know. According to the place and the objective, different beginnings will be made in learning to draw, to calculate, to understand biology, and finally to read special works on, for example, drying fruit or setting up a refrigeration unit.

This is to say that there is no general adult education formula by which men in Kabul, any more than men in Paris, London, or Washington, can determine whether that particular shepherd in Badakshan, that cotton-mill worker in Djebel Saraj, or that housewife in Herat needs to learn to read and write, listen to radio programmes, or attend the cinema. All education is both individual and social, and the schooling which should be given to any Afghan adult must be determined by his particular present and future needs viewed in the light of the community's needs.



Truly effective adult education must therefore be directed by a teacher or a leader of adult groups who knows the shepherd of Badakshan, the worker from Djebel Saraj or the housewife of Herat, who can study each adult learner minutely and sympathetically, who can comprehend and appreciate the needs of the community in which and for which he teaches, and who has a command of the different activities and instruments for adult learning.

#### ADULT EDUCATION AGENCIES AND INSTRUMENTS IN AFGHANISTAN

The chief media of mass communication in Afghanistan are under the control of the Ministry of Information, which therefore supervises the use of these media in adult education. A number of very firm and effective beginnings in this field have been taken by the Ministry.

##### *The Radio*

Kabul radio, which is relatively high-powered, has a variety of recreational programmes (music, news and plays) of some educational value. It also gives systematic lessons in Pushtu and Persian. There are several thousand receiving sets in use in the country, some working from electric light plants in cities and others from storage batteries. These sets belong, of course, almost entirely to members of the more prosperous classes.

To reach the great majority of the people who cannot afford receiving sets, the Government has installed 12 public rediffusion units, each powered by a small hydro-electric generator; the wireless receivers are equipped with an amplifier strong enough to drive five or six loud-speakers located at strategic places in the main thoroughfares of the town. In the evening, after the day's work, the men of the community are beginning to acquire the habit of coming to listen to the programmes, and presumably in some cases to discuss them later.

The Government intends to install 10 other units in the near future.

##### *The Cinema and other Visual Aids*

Kabul has a cinema which shows films from every part of the world. Kandahar also has a cinema, and others are under construction or planned for the near future in various provincial towns. It would be useful to supplement these few by mobile cinemas which could be sent throughout the country. Arrangements might well be made for lecturers to show slides and filmstrips in places which lack electricity.

Films on maternal and child hygiene could be shown to feminine audiences, as is at present done on a very limited scale by certain foreign embassies. A very great effort needs to be made in this field. The health and sanitation approaches ought to be especially useful in the education of women (see Chapter II).

##### *The Press*

There is relatively little literature published in Pushtu. A few hundred books in this language have appeared in recent years, written by authors of varying

talents. Persian literature is much more extensive. Public libraries are few. Books are very expensive relative to the average income, the normal price being from 20 to 50 afghanis (or roughly U.S. \$1 to \$2.50).

Although a newspaper is published in each province, the weekly printing is often only a few hundred copies. These newspapers are frequently of very limited educational value and news interest, describing at length the movements and activities of important national personages, but containing almost no practical information, local news, or long interesting articles.

It can fairly be said that the Afghan press has much the same faults as Afghan education. It offers little that is concrete, useful, or of local interest. It has few readers, even among the literate.

It seems to the Mission highly desirable that provincial newspapers, carefully adapted to the capacities and interests of the people, should be distributed free of charge under the supervision of the schools, for several years, to everyone who can read. Apart from the attraction of the paper itself (paper is very scarce in Afghanistan), which would make the distribution popular, the people of the country would thus be kept from losing the ability to read after leaving school, as now often happens. At a cost of two or three million afghanis annually (a perfectly reasonable outlay), it would be possible to distribute newspapers to all literate persons, both children and adults. The Mission believes that this expenditure would be profitable to the country.

#### *The Abolition of Adult Illiteracy*

Two special books have been published by the Ministry of Information to teach adults how to read. On the basis of experiments conducted in Kabul but not under the supervision of the Mission, it is estimated that an average adult can learn to read his native language, Pushtu or Persian, in six months, with one hour of study per day.

Adult courses have been organized for factory workers, minor officials, and government employees who are required to attend them. These courses have a yearly attendance of more than 5,000.

Adult education for men only is also given in the mosques.

Finally, the army is making a great effort to abolish illiteracy among its recruits. Authoritative sources state that more than 10,000 soldiers attend reading classes each year.

These attempts obviously need to be supplemented.

#### THE ROLE OF THE ELEMENTARY TEACHER IN ADULT EDUCATION

The Mission believes that the role of greatest importance in the future development of adult education in Afghanistan will be that of the elementary school-teacher and particularly of the elementary teacher in rural communities. It proposes, therefore, that all elementary schools in the smaller villages and many elementary schools in the towns should become centres of adult education.

The first learning activities to be carried on under the direction of one of these adult education centres would be determined by the most pressing individual and social needs of the community. Let us consider the case of a community in which the teacher finds that malaria is a grave problem, reducing the strength of the people and impairing their ability to work. The teacher might

decide that the first adult education project should be the attack on malaria—not so much study about it as action against it.

The teacher will begin by interesting some of the older elementary school students in the project—perhaps even attracting one or two adults into the work from the first—and arranging for a survey of an experimental area of the community to discover all the stagnant pools in which mosquito larvae are growing. The learners, still mostly children but now perhaps including three or four adults, proceed to treat some pools with oil, to drain others, and to put larvae-destroying fish in still others. Next, the school-children, aided now by five or six adults, will study the incidence of malaria in the experimental area and in other comparable areas of the community, the number of work days lost through sickness, the distances apparently travelled by mosquitos from their breeding places, the possibility of using mosquito nets over beds or on bedroom windows and many other related problems.

The manner in which adults will participate in such a project, the rapidity with which they can be interested, and the way in which they should be handled by the teacher will vary from community to community and from individual to individual. Here, if ever, the idea of uniform practice imposed on the teacher from outside is fatal.

The teacher must feel the pulse of his community and sometimes work very slowly. A year or even more will perhaps be needed in some communities before even the first project can be mentioned to adults. In other communities, it may be possible to start the first project in a week, and have several in operation in three months. It is always necessary to wait until the first project is sufficiently under way to move forward under its own power before a second is started. It is indeed one of the principles of modern adult education—even more than of the education of children or young people—that a successful learning project is one over which the learners take more and more control as the project grows.

It should be emphasized that not all adult education projects need to be as large and far-reaching in effect as that described above. An example of a smaller project would be an attempt to raise better maize in the school garden by seed selection. If only a single adult in the community helps with this project, it is the beginning of an adult education enterprise.

To use the common educational terminology, hygiene, public health, agriculture, horticulture, animal husbandry, afforestation, and civics are some of the subjects whose problems and methods, applied to rural communities, may provide the core of the adult education programme for many years to come.

Under such a scheme of adult education, it is obvious that sooner or later, a bulletin of the School of Agriculture in Kabul, a bulletin of the National Ministry of Public Health, or a pamphlet of the Ministry of Information will be needed in connexion with an adult education project. Some of the illiterate adults will then both wish and need to read. It is at this point that the alert teacher will begin to teach one, two, or 20 to read and write—not because he is trying to abolish illiteracy, but rather because he is trying to better the lives of the people in his community by the use of every educational instrument at his command.

## SECONDARY, TECHNICAL AND HIGHER SCHOOLS IN ADULT EDUCATION

What has just been said about the role of the elementary teacher in adult education can also be applied to the secondary teacher, taking into account the much larger communities served by secondary schools and the specialization of the instructors. The use of the radio, visual aids, information bulletins, demonstration teams, discussion groups, experiments and other aids adapted to secondary education, will make the contribution of the secondary teacher much more complex than that of the elementary teacher. Nevertheless, the essential process of starting with a school activity, interesting a few adults, and moving more and more into the whole adult community, will be the same on the secondary as on the elementary level.

In technical, secondary and higher schools, adult education should follow the same general principles. Certain modifications, to take full advantage of the narrower specialization and higher abilities of the staff, will be necessary. The adult education programmes of the departments of horticulture or forestry, the faculties of medicine or education, or of one of the schools of commerce, for example, would necessarily be directed to adults working in related fields.

## FUNDAMENTAL EDUCATION

The Mission considers that the kind of co-operation described above between elementary, secondary, technical, and higher education on the one hand, and the individual education of adults on the other, is the only kind of fundamental education that any country needs.

Fundamental education, so conceived, is that which meets the most pressing needs of the people. Its success demands the co-operation of all parts of the national education system.

To teach a seven-year-old child to read or his 70-year-old grandfather to raise better goats are both acts of fundamental education if they are related to the individual needs of the two learners and the social needs of their communities.

Teaching the seven-year-old child to read and then giving him nothing to read for the rest of his life or persuading the 70-year-old man to raise goats when he should raise sheep would be not acts of fundamental education but *fundamental errors*.

## A SUGGESTED EXPERIMENT IN ADULT EDUCATION

The proposal, already made in connexion with elementary education in Chapter III, that at least one teacher be assigned to travel with a nomad group, is here repeated as being a desirable experiment in adult education.

The conditions of nomad life would make this experiment of special significance and very probably of great utility. The teacher would be in close contact with his people hourly and daily. The relationship between childhood and adult activities would necessarily be close, and the passage from youthful to adult learning would therefore be correspondingly easy.

The qualifications of a teacher for such an experiment would need to be

very great. He would need to know the language and the life of the nomads from childhood himself. He should have completed at least a normal school course and in addition have acquired some technical education. He should have a general interest in agriculture, animal husbandry, hygiene and local geography. It would be very desirable if he were also a mullah so that he would have the added prestige and knowledge which that status would afford.

In view of the great need to make the education of adult women an integral part of this experiment, it would also be well for the selected teacher to have a wife trained in teaching and in related technical skills, such as nursing and midwifery; the couple would then form an educational unit for this programme.

#### SUMMARY OF RECOMMENDATIONS

The following measures for improving adult education, listed here in their order of importance, have been mentioned or implied in this chapter:

1. The establishment of adult education centres and services in connexion with many elementary, secondary, technical, and higher schools.
2. The distribution of weekly newspapers free of charge for several years to all persons able to read.
3. The provision of travelling cinemas and other visual aids.
4. The employment of two experimental travelling teachers, a man and wife, with a nomad group (see also Chapter III).

## IX. FINANCE

### THE STATE BUDGET

In spite of the war and the accompanying world-wide inflation, the expansion of the Afghan budget has been quite slow. It amounted to 247 million afghanis<sup>1</sup> in 1939 and 320 million in 1948.

Assuming that the same trend continues in future years, the budget is likely to amount to 367 million afghanis in 1959 and 442 million afghanis in 1969.

Government revenue for the year 1948 may be analysed as follows:

|                                   | <i>Million afghanis</i> | <i>As a percentage<br/>of total revenue</i> |
|-----------------------------------|-------------------------|---|
| Taxes on land . . . . .           | 57                      | 15  |
| Taxes on livestock . . . . .      | 26                      | 6   |
| Income taxes . . . . .            | 50                      | 12  |
| Miscellaneous taxes . . . . .     | 18                      | 4   |
| Custom duties . . . . .           | 128                     | 32  |
| Postage and tax stamps . . . . .  | 6.5                     |   |
| Mines . . . . .                   | 1.6                     |   |
| State forests and lands . . . . . | 2.8                     |   |
| Monopolies . . . . .              | 8.9                     |   |
| Postal services . . . . .         | 0.9                     |   |
| Radio . . . . .                   | 1.6                     |   |
| State factories . . . . .         | 9                       |   |

This indicates that taxes accounted for 37 per cent and customs duties for 32 per cent of government revenue.

In reality income tax is largely dependent upon exports, so that in all some 40 per cent of government revenue is determined by the value of exports. The main export commodities are karakul skins (totalling about \$14 million a year), fruit and wool.

These markets for these goods being overseas, they have to pass through adjacent countries *en route*. At present, more than 90 per cent of Afghanistan's export trade passes through Pakistan.

This means that 40 per cent of the state revenue depends in the last resort on the goodwill of Pakistan.

<sup>1</sup> The official rate of exchange in August 1949 was \$1 = 28 afghanis.

The economy of Afghanistan would thus seem to be very dependent on the outside world, and hence vulnerable.

This probably explains why it has been difficult for the Afghan Government to make any definite plan for long-term economic development.

In the present situation, the sources of revenue seem to be exploited almost to the full. Nevertheless, the land tax might perhaps be improved and so adjusted as to yield higher revenue.

It may also be remarked that the provinces have practically no income of their own. The Government's policy has been to eliminate tolls and internal duties, and the state normally finances the local administration.

It does not therefore seem possible at present to ask the communities and provinces to make their own contributions to education, as the entire financial structure of the country would have to be modified to enable them to do so.

#### EXPENDITURE ON EDUCATION

In 1948, expenditure on education amounted to 66 million afghanis, of which eight million were provided by a special contribution from the large industrial concerns—textiles, sugar refineries, etc.

The State devoted 58 million afghanis (or 18 per cent of total government revenue) to education. The Ministry of Education thus obtained a very large share of government expenditure; only the War Ministry had a higher percentage (31 per cent). Taking into account both the educational efforts of the Ministry of War in teaching 10,000 soldiers to read each year, and those of the Ministry of Information, it may be estimated that about 25 per cent of government expenditure was devoted to instruction and education.

These figures indicate that the Afghan Government is making a great effort, to which the Mission wishes here formally to pay tribute.

Expenditure on education may be analysed as follows:

|   | <i>Million afghanis</i> | <i>Percentage</i> |
|---|-------------------------|-------------------|
| Primary education   | 14                      | 21.0              |
| Secondary education (of which 7.5 million from industrial concerns) | 14                      | 21.0              |
| Technical education (of which 0.5 million from industrial concerns) | 9                       | 13.5              |
| Higher education  | 18                      | 27.6              |
| Central administration  | 4                       | 6.0               |
| Sports  | 0.5                     |                   |
| Construction of schools   | 3.8                     |                   |
| Purchases of cereals  | 2                       |                   |
| Central bookshop  | 0.1                     |                   |

At first sight, the credits allotted to primary education are rather small. In reality it is necessary to bear in mind that (a) the cost of schooling 10,000 children attending the elementary classes of the secondary schools is included

in the budget for secondary education, and that (b) the credits for the running of teacher training colleges are included in the budget for technical education.

If these adjustments are made, the allocations work out at approximately 33 per cent for primary education, 7 per cent for secondary education, 12 per cent for technical education and 27 per cent for higher education.

The Mission also comments upon the fact that the credits granted for the construction of schools are not under the direct control of the Ministry of Education. The Mission is of the opinion that this Ministry should itself be responsible for the construction which it considers necessary, and not subject to control by another Department.

The Ministry of Education devotes relatively high sums to the upkeep of training schools (1.81 million afghanis). The cost of training a student-teacher is about 3,600 afghanis per year. Nevertheless, as will be suggested later, even greater credits will be required in the coming years to convert the training colleges into model establishments.

The expenditure devoted to 10 primary schools in Kabul (4,000 pupils), excluding teacher's salaries, amounted to 207,000 afghanis, divided as follows: books 77,000, notebooks 51,000, medical control 23,000, furniture 36,000, miscellaneous paper 9,000, classroom maintenance 2,000, electricity 630.

Hence the cost of maintaining a child at primary school is about 50 afghanis per year. If the teacher's salaries are taken into account, the cost amounts to about 150 afghanis per year.

#### STAFF SALARIES

Although staff salaries have tripled since 1938, they are, comparatively speaking, still very low.

A comparative study of prices in 1938 and 1949 shows that the cost of living in Kabul, for example, had risen by about 500 per cent.

|                         | 1938<br>afghanis | 1949<br>afghanis |
|-------------------------|------------------|------------------|
| Rice . . . . .          | 4.5              | 22-23            |
| Flour . . . . .         | 5                | 14               |
| Sugar . . . . .         | 10               | 40               |
| Meat . . . . .          | 7                | 42-45            |
| Shoes . . . . .         | 25               | 125              |
| Cloth (metre) . . . . . | 1.5              | 15               |
| Fat . . . . .           | 28               | 135              |
| Potatoes . . . . .      | 0.5              | 6                |
| Tomatoes . . . . .      | 0.5              | 4                |
| Egg plant . . . . .     | 0.15             | 3                |

It seems clear from our study that in 1938 a family of four could live reasonably well on 300 afghanis per month. At present the same family would need about 1,600 afghanis per month.



Teaching salaries vary between 150 and 712 afghanis per month, the higher figure being the salary of a university professor.

In the course of its tour of inspection in the Provinces, the Mission met teachers whose clothes were in a lamentable condition: worn and thread-bare trousers, down-at-heel shoes, ragged jackets. Although there are great differences in the cost of living between the various provinces, it is materially impossible for a young teacher in any of them to live decently on a few hundred afghanis per month. A number of teachers admitted that they could not afford to get married because their salaries would not allow them to support a wife and to bring up children. Others are unable to pay a monthly rent of 50 afghanis. They live with their families, often very far from school. Among the teachers interviewed, very few could afford to buy a bicycle, and not one owned a wireless set. The personal library of these provincial teachers is usually restricted to school texts, since books cost between 20 and 50 afghanis each, which to them is a prohibitive price. As their teaching salary alone does not provide them with a decent living, many teachers have to undertake other work during the afternoons. As for the situation in the capital, it is enough to say that a university professor earns 700 afghanis per month and that the rent of a modern four or five room house is between 1,200 and 2,000 afghanis per month. In Kabul, as in the other large towns, teachers are obliged to work a great many extra hours in order to earn a reasonable salary. It is perhaps worth remarking that the teaching profession in Afghanistan has no extra-official sources of income, whereas other state employees benefit from considerable semi-official privileges, in addition to their salaries.

The deplorable situation of the members of the teaching profession has its impact on the quality of the instruction. The teachers and professors have neither the time nor the means to add to their own knowledge. Courses which are repeated parrot fashion are of little value.

The Mission is of the opinion that the tragic financial situation of the teaching profession is one of the principal reasons for the poor results achieved by Afghanistan in the sphere of education.

The Mission feels that it would be a good if drastic policy, to dismiss those teachers who do their work badly and are incapable of improvement, and to use the credits thus saved to make a notable increase in the salaries of the remaining staff.

#### CONCLUSION

A very substantial increase in the salaries of the whole teaching profession would seem to be indicated. Education prepares the way for the future, and it is the standard of the teaching profession which will determine the speed with which Afghanistan evolves from its present condition to that of a modern State.

## X. CONCLUSIONS

### INTRODUCTION

This chapter is not intended as a summary of the Mission's recommendations; these are given in order of priority at the end of each chapter. The purpose here is briefly to set down in general terms an outline of action for the future.

The Mission believes that Afghan education needs to be completely remoulded in order to make it less complicated and academic, and so more experimental, attractive, effective and useful.

### A LESS COMPLICATED EDUCATION

First stage primary teaching should be in the vernacular only; the additional language—whether Pushtu or Persian—should only be introduced at the second stage.

Within a period of a few years, secondary, technical and higher education should be carried on entirely in Pushtu and Persian.

The syllabuses for the various subjects require to be reviewed, correlated and simplified.

### CONCRETE AND EXPERIMENTAL

The present pedagogic concepts should be revised: in the future teaching should be concrete and experimental.

The Mission feels that the accomplishment of this reform will demand the re-education of the present staff and a very special training for new teachers.

### ATTRACTIVE

Teaching will only become attractive, and hence successful, after the re-education of the present teaching staff and the success of special efforts with regard to the training of new teachers.

### EFFECTIVE

A tremendous effort should be made in the next four or five years in the field of *education for women*. This is a matter of crucial importance. The Mission is of

the opinion that the education of men only is not enough to raise a country to the rank of a modern State.

#### USEFUL

The Mission is of the opinion that the Ministry of Education should be decentralized. Schools must not only be adapted to local conditions; they must also provide education for adults.

An effort must be made to develop the technical training of pupils from the primary school onward. In addition, institutions for advanced education in technology, commerce and the arts should be established.

#### THE FUNDAMENTAL REFORMS IN AFGHAN EDUCATION OUTLINED ABOVE WILL ONLY BE SUCCESSFUL IF CERTAIN RECOMMENDATIONS ARE FIRST PUT INTO EFFECT

A Faculty of Education should be set up to supervise and co-ordinate teaching in Afghanistan. In collaboration with the faculties of science and arts, this faculty would also have the task of training men and women, secondary school teachers, inspectors, administrators and heads of teaching establishments.

The teacher training schools should be reorganized in such a way that teachers would not only pass through grades 10 to 12, but would also acquire a sound professional training.

Training courses should be organized in such a way as to bring the pedagogic methods of the existing teaching staff up to date.

Finally, an attempt should be made to give some instruction to the nomads, who are an important part of the population.

This programme could be carried out in a period of from four to five years, at the present rate of expenditure on education. While acknowledging that the Afghan Government is already devoting considerable sums to education, the Mission believes that the credits could be used to much greater advantage.

Only when these recommendations have been put into effect, will the Afghan schools attain the high standard necessary to recommend them to the country, and to make an expansion of both juvenile and adult education worth while.

## APPENDIX 1

### POWER STATIONS, INDUSTRIES AND FACTORIES VISITED BY THE MISSION

| <i>Location</i>   | <i>Description</i>   | <i>Remarks</i>   |
|---|--|--|
| <b>POWER STATIONS</b>   |  |  |
| <p><i>Note:</i> Even with a third power station with an output of 1,500 kW., total hydro-electric power for the whole of Afghanistan cannot exceed 8,800 kW and is in fact less. Small motor-driven units are available in some centres, but the additional power from these is very small.</p> |  |  |
| Djebel Saraj  | Small hydro-electric power station. Three units (German) of 500 kW each, one unit (U.S.A.) of 960 kW. Total possible output 2,500 kW.              | The power is mostly used in cotton mill, the remainder supplied to Kabul.  |
| Pul-i-Khomri  | Hydro-electric power station. Three units (German) of 1,600 kW each. Total possible output 4,800 kW. Plant is in excellent condition; new in 1941. | The power is used in cotton mill. During the winter, the flow of the river Konduz is only sufficient to drive two units. |
| <b>TEXTILES</b>   |  |  |
| <p><i>Note:</i> These are the only two cotton mills in the country. The output is far from sufficient to meet the needs of the people of Afghanistan.</p>   |  |  |
| Djebel Saraj  | <i>Cotton mill.</i> Only 53 looms in use, some German, some British. Some hand looms. The power supply is the limiting factor.                     | Employs 400 men in two shifts. Difficulties experienced because of the lack of humidifying plant in the dry atmosphere.  |
| Pul-i-Khomri  | <i>Cotton mill.</i> Modern and spacious. Equipment 15,000 spindles, 550 looms, all British. Humidifying plant, German. Many amenities.             | Employs 1,800 men in two shifts. Output per day 20,000 metres one metre wide.  |

| <i>Location</i> | <i>Description</i>  | <i>Remarks</i>  |
|-----------------|---|---|
| Kandahar        | <i>Woollen mill.</i> Excellently equipped with modern German machinery comprising four carders, six spinning machines and 20 looms. There is an efficient dyeing section. | Employs 200 men, and up to 100 women for wool-sorting. Manufactures woollens in considerable variety. |
| Kabul           | <i>Woollen mill.</i> An old and obsolete factory equipped with German and British machinery much of which is 40 years old. There are 30 power looms and 40 hand looms.    | Employs up to 400 men (no women). Much of the output is coarse blanket material.                      |

#### RAW COTTON

*Note:* The production of raw cotton in Afghanistan totals about 14,000,000 kgs. per annum. Of this 9,000,000 kgs. are processed at Konduz, 3,500,000 at Balkh, and the remainder at two smaller factories.

|        |   |   |
|--------|---|---|
| Konduz | Cotton cleaning, baling and pressing plant. Modern and spacious. Processes cotton grown in the province of Badakhshan. The plant is of British, Russian and German manufacture. | Employs up to 600 men during the peak period of about six months. |
|--------|---|---|

#### COTTON SEED OIL

|        |  |
|--------|--|
| Konduz | Cotton seed oil press, attached to the cotton baling plant. The equipment is of Russian manufacture. |
|--------|--|

#### SOAP

|        |  |                                 |
|--------|--|---------------------------------|
| Konduz | Soap factory. A small subsidiary of the oil press. | Output 2,000,000 pieces a year. |
|--------|--|---------------------------------|

#### POTTERY

|        |   |                 |
|--------|---|-----------------|
| Konduz | Small pottery using kaolin mined in the province. Home produced equipment of good design. | Employs 50 men. |
|--------|---|-----------------|

| <i>Location</i>   | <i>Description</i>   | <i>Remarks</i>  |
|---|--|---|
| <b>STONEMWORK, WOODWORK</b>   |  |   |
| Kabul   | Stonework (marble) and woodwork (furniture) factory; also automobile repair centre. Marble factory equipped with modern Italian machinery produces excellent work in limited quantity. Woodwork factory has obsolete German equipment and is not very efficient. | Employs in all about 300 men. Output could be considerably increased.   |
| <b>BEET SUGAR</b>   |  |   |
| Baghlan   | Beet sugar plant, of Czechoslovak manufacture. Installed in 1940 and in excellent condition. Operates for only three months in the year, and deals with the local harvest.   | Employs 500 men in the operating period. Produces not more than 4,000 tons of sugar per year; i.e. less than one half of the country's needs. |
| <b>COAL</b>   |  |   |
| <i>Note:</i> Coal of better quality is mined near Konduz, where the factories have access to small quantities of good coke. Friable coal is also mined near Baghlan, but coke for the sugar beet factory is imported from U.S.A. Coal for the woollen mill at Kandahar is imported from Pakistan. |  |   |
| Between Dhosi and Duab-i-Mechsarín  | Coal Mine. Shallow shafts driven into the hillside. Seams 3 feet to 4 feet thick but coal extremely friable requiring briquetting before use. Primitive operation. Mechanization nil.  | Only a few men employed. Output not more than a few truck loads a day.  |
| <b>KARAKUL SKINS</b>  |  |   |
| Northwest Afghanistan   | A widespread village industry. The skins are sun dried on the hot desert sand.   | Prewar export: 3,000,000 skins worth from \$13 to \$15 each. Export in 1950 expected to be 2,000,000 skins at \$6.50 to \$6.75 each.          |

APPENDIX 2

STATISTICS FOR SCHOOLS FOR MECHANICAL CRAFTS,  
CARPENTRY AND TAILORING, TRADE AND COMMERCE,  
SECRETARIES, AND AGRICULTURE, KABUL

|   | <i>Mechanical<br/>crafts</i> | <i>Carpentry<br/>and<br/>tailoring</i> | <i>Trade<br/>and<br/>commerce</i> | <i>Secretaries</i> | <i>Agriculture</i> |
|---|------------------------------|--|-----------------------------------|--------------------|--------------------|
| <i>Number of students</i>                         | 132                          | 156                                    | 158                               | 230                | 100                |
| <i>Number in each year</i>                        |                              |  |                                   |                    |                    |
| First   | 61                           | 48 <sup>1</sup> 38 <sup>2</sup>        | —                                 | 107                | 46                 |
| Second  | 40                           | 23 <sup>1</sup> 25 <sup>2</sup>        | 35                                | 58                 | 33                 |
| Third   | 19                           | 7 <sup>1</sup> 4 <sup>2</sup>          | 26                                | 65                 | 21                 |
| Fourth  | 12                           | 11                                     | 44                                | —                  | —                  |
| Fifth   | —                            | —                                      | 32                                | —                  | —                  |
| Sixth   | —                            | —                                      | 21                                | —                  | —                  |
| <i>Mother tongue</i>                              |                              |  |                                   |                    |                    |
| Pushtu  | —                            | —                                      | 15                                | 50                 | 49                 |
| Persian   | 132                          | 156                                    | 143                               | 180                | 51                 |
| Other   | —                            | —                                      | —                                 | —                  | —                  |
| <i>Occupations of fathers</i>                     |                              |  |                                   |                    |                    |
| Local official                                    | 17                           | 45                                     | 100                               | 31                 | 20                 |
| Trader  | —                            | 12                                     | 17                                | —                  | —                  |
| Agriculturist                                     | 12                           | 29                                     | 20                                | 150                | 50                 |
| Others  | 103                          | 70                                     | 21                                | 49                 | 30                 |
| <i>Division between day students and boarders</i> |                              |  |                                   |                    |                    |
| Day students                                      | 132                          | 156                                    | 158                               | 24<br>(from Kabul) | —                  |
| Boarders  | —                            | —                                      | —                                 | 206                | 100                |

<sup>1</sup> Carpentry.

<sup>2</sup> Tailoring.

|                                       | <i>Mechanical<br/>crafts</i> | <i>Carpentry<br/>and<br/>tailoring</i> | <i>Trade<br/>and<br/>commerce</i> | <i>Secretaries</i> | <i>Agriculture</i> |
|---------------------------------------|------------------------------|--|-----------------------------------|--------------------|--------------------|
| <i>Distribution between Provinces</i> |                              |  |                                   |                    |                    |
| Kabul                                 | 132                          | 156                                    | 158                               | 120                | 33                 |
| Kandahar                              | —                            | —                                      | —                                 | —                  | —                  |
| Herat                                 | —                            | —                                      | —                                 | 7                  | —                  |
| Qataghan                              | —                            | —                                      | —                                 | 25                 | —                  |
| Ferah                                 | —                            | —                                      | —                                 | 5                  | 2                  |
| Junoby                                | —                            | —                                      | —                                 | 19                 | —                  |
| Mushriqy                              | —                            | —                                      | —                                 | 17                 | 49                 |
| Badakhshan                            | —                            | —                                      | —                                 | 12                 | —                  |
| Maimanah                              | —                            | —                                      | —                                 | 11                 | 5                  |
| Mazar-i-Sherif                        | —                            | —                                      | —                                 | 14                 | 11                 |



## APPENDIX 3

### MOTOR VEHICLE MECHANICS' WORK

#### MOTOR VEHICLE TECHNOLOGY

The general layout of a motor vehicle of conventional type with the functions of the main components and assemblies.

*The Engine Unit.* The four-stroke cycle, sequence of valve operation, the simple two-stroke cycle in single cylinder construction. Reasons for use of multi-cylinder engines, popular arrangements. Cylinder arrangement and construction, fixed and detachable heads, dry and wet cylinder liners, pressure and water joints, combustion chamber shape. Valves and valve operation, springs, tappets, cams and camshafts. Piston materials and construction, clearances, ring fitting. Procedure in decarbonizing and valve maintenance including determination of cylinder wear, valve guide wear, spring strength. Construction of connecting rods including big and little end bearings. Location and fit of gudgeon pins in piston and rod. Crankshaft construction, crank positions in relation to firing order. Alignment of rods and crankshafts and methods of testing.

*Lubrication Systems.* Forced and splash lubrication, oil pumps. Cylinder lubrication and carbon deposit. Crank-case dilution. Service procedure for lubrication systems.

*Cooling Systems.* Air and water: path of cooling water. Radiators—construction, maintenance and cleaning. Thermo-syphon and pump circulation. Water pumps and fans. Thermostats.

*Compression Ignition Engines.* Special features, related to items in the foregoing paragraphs.

*Fuels and Fuel Supply.* Typical fuels and characteristics for spark ignition and compression ignition engines. Fuel supply systems, tanks, gauges, pumps, filters, air cleaners, air cleaning and silencing. Carburation, essential features of a carburettor. Types in common use. Function of jets, chokes, float and float chamber. Starting, slow running, acceleration with simple adjustments. Injection pumps and nozzles for compression ignition engines, methods of motoring fuel.

*Silencers.* Essential features of arrangement, construction and mounting. Procedure for cleaning and reassembly.

*Electrical Equipment.* Magneto and coil. Ignition timing, advance and retard by manual and automatic control. Contact breaker cleaning and adjustment.

**Coil ignition details.** Construction of coil and distributor, sparking plugs, special features in relation to engine performance, cleaning and testing. Location of ignition faults. Simple routine servicing of electrical equipment, cleaning and adjustment of contacts and other connexions. Battery maintenance. Replacement of fuses, cleaning and replacement of dynamo and starter brushes, lubrication of electrical equipment.

**Transmission.** Purpose of clutch, gear-box, universal joints, propeller shaft and rear axle drives. Types of clutch, clutch adjustments. Fluid flywheels, gear boxes (including easy-change, synchromesh); lubrication, adjustment of controls. Metal and fabric types of universal joints, assembly details; methods of lubrication. Final drive, types and arrangement in common use; lubrication, construction details. Differential and rear axle drive arrangements.

**Front Axle and Steering Gear.** Steering gear layout, stub axles and pivot pin assembly, toe-in, camber and castor angle, pivot pin inclination, measurement and adjustment. Causes of steering faults and vibration; remedies. Dismantling, adjustment and reassembly of steering gear.

**Wheels, Tyres and Brakes.** Construction of wheels and rims. Rim and tyre sizes, tyre fitting, cover and inner tube repairs, inflation pressures. Wheel alignment, testing for correct assembly of wheel and tyre in relation to chassis. Brake mountings. Types of brakes and braking systems; operation by cable, rod or hydraulic systems. Servo control, effect on brake action and operating pressure. Construction and adjustment of brakes and operating systems, balancing of brakes, relining, causes of noise in operation. Location and cure of faults, use of special tools.

**Chassis Frames.** Loads to be carried by chassis frame, distortion under normal and abnormal road conditions, effects of steering and braking. Constructional details, including methods of ensuring strength and rigidity, testing of frame alignment. Mounting of body and controls on chassis. Typical methods of construction for separate and integral body-chassis combinations. Jacks and jacking systems.

**Suspension.** Springs, their attachment to chassis and axles, independent wheel suspension. Shock absorbers, fitting, servicing and adjusting.

**General Servicing and Road Testing.** Typical service station equipment for routine servicing, including cylinder reboring, fitting of liners and use of the line bearing borer. Lubrication. Assembly of components after routine overhaul. Importance of cleanliness in chassis details and body fittings. Road testing after routine servicing and overhaul, location and detection of faults, simple fuel consumption tests. Care and use of tools, equipment and measuring instruments associated with garage repair work.

*Science*

Temperature scales. The melting points of the materials used in motor vehicle construction: iron, steel; aluminium and its alloys, copper and its alloys. Temperature of soldering, brazing, and welding operations. Heat. The measurement of temperature and heat; effect on the physical properties of metals; expansion, hardening, tempering, annealing. Physical properties of cast iron, mild steel, carbon steels, alloy steels, light alloys, brass and bronze, white metal, solders and fluxes. Effect of heat treatment on these properties and application to typical chassis components. Importance of precise control of heat treatment on highly stressed parts, danger of cold working. Properties of water and lubricants in relation to heat. Viscosity, change of viscosity with temperature; importance of this change in relation to selection of lubricants for various purposes. Fuels, specification details, calorific values and air-fuel ratios for typical fuels, anti-knock values.

Properties of gases, compression and expansion of gases. Compression ratio in an engine. Force. Effect on materials in such applications as extending, bending, twisting, shearing. Calculations of simple direct stresses. Leverage. Moment of a force. Examples such as arise in the use of spanners, control levers, brake operation and brake mountings; distribution of loads between wheels. Torque and its relation to forces on engine mountings, steering gear, transmission.

Measurement of work. Calculations of work done by force on piston, torque on shafts. Power in relation to engine output and road performance. Friction, its effect on motion. Coefficient of friction. Braking. Work lost in bearings and slides. Lubrication, ball and roller bearings. Velocity ratio applied to gear trains, control mechanisms, back axle reduction. Work output and input. Horsepower. Mechanical efficiency. Fuel consumption per unit of b.h.p./hour. Brake Mean Effective Pressure.

*Mathematics*

Arithmetic. Fractions and decimals with special reference to (a) degrees of accuracy required; (b) rough checks. Application of vernier micrometer, dial indicator and other measuring instruments. The metric system and conversion of lengths. Averages and percentages with reference to alloy compositions, fuel and exhaust gas compositions, performance calculations and efficiency. Multiplication and division and the evaluation of formulae involving simple powers and roots. Mensuration. Linear measurements: surface, volumes and weights of regular solids. Calculation of piston and bearing loads, cylinder volumes and compression ratios from experimental data. Simple graphs representing experimental data. Geometry, the right-angled triangle; relation between lengths of sides.

Angles and their measurement. Use of tables of sines, cosines and tangents. Simple applications of these ratios to problems such as setting out and measuring tapers and templates, and to alignment problems.

## *Drawing*

Free-hand dimensional sketches of simple components and fittings. Sketches and drawings of simple assemblies. Use of drawing instruments in making simple workshop drawings, including orthographic projection. Detail drawings of machine parts and simple related component parts properly dimensioned. Demonstration of machine finishes for typical components. Allowances for various grades of fit. Use and care of measuring instruments. Methods of measuring wear and clearances in bearings and fittings. Detail drawings of simple brackets, tools and plate fittings that would be used in a repair shop. Construction of common geometrical plane figures. Practice in the interpretation and preparation of simple lubrication systems and wiring diagrams.

### SCHEME OF PRACTICAL WORK

The scheme of practical work is intended to form a foundation for the normal dismantling and assembly work of a garage and for the use of special machine tools used in major overhauls.

Manufacture of a plate fitting demanding the use of scribing block, dividers, rule and square for marking out and involving filing, bending and drilling to definite dimensions.

The fitting of two steel mating parts—requiring the use of chisels, files, scrapers, drills, reamers, hand taps, stocks and dies—to tolerances recognized in good-class practice.

The soldering of a simple lap or butt joint with tinned steel plate, the soldering of a nipple to a bowden cable and the soldering of a union nipple to a copper pipe (or of a terminal to heavy copper cable).

The brazing of a simple lap or butt joint with steel plate and the welding of a simple joint in steel.

Forging exercise involving upsetting, drawing down square, and bending.

Manufacture of a small tool involving forging, filing or grinding, hardening and tempering (e.g., centre punch, chisel or scraper).

Centre lathe, turning and boring, including setting up with four jaw chucks—e.g. manufacture of bushes.

Dismantling, decarbonizing, reassembling a single cylinder side valve engine or a multi-cylinder engine with detachable head.

Grinding valves and valve seats; reassembly and tappet adjustment.

Brake dismantling, relining, reassembly and adjustment.

Dismantling clutch and operating mechanism. Reassembly to secure uniform smooth engagement, with maximum adjustment left for routine attention.

Dismantling, cleaning and reassembling dynamo or starter, including bedding of brushes and necessary attention to commutator.

Assembling electrical components forming complete equipment of modern car on a dummy frame, making connexions in accordance with typical wiring diagram, with fuses inserted and wiring tested.

Assembly of front axle and steering connexions with adjustment of bearings and correct alignment of wheels.

An example of bronze welding of cast iron.

Replacement of broken spring leaf.

## APPENDIX 4

### ELECTRICAL INSTALLATION WORK

#### STAGE I

What the electrical installation provides. The necessity for regulations—safety of life and property.

Consumer's terminals—voltage across them.

Similarities and differences of a.c. and d.c. The sine wave. The heating effect of direct and alternating currents. Addition of voltages in d.c. circuits and in a.c. circuits.

Electrostatic forces—effect on insulation. Conductivity of the human body. Potential difference between mains and earth. How the human body may become part of an electrical circuit.

Definitions of cables.

Protection; fuses.

Meaning of supply at constant pressure.

Building up a lighting circuit. Candle-power; the lumen; lumens per watt; rating of lamps; efficiency of lamps, including discharge lamps. Lamps in series and in parallel. The fundamentals of the design of a lighting circuit. Distribution point; protection of fuses; control of lamps; sizes of cables; voltage drop; the fittings used.

Wiring systems (only the two-wire supply need be dealt with in detail).

Simple testing for continuity and insulation. Labelling circuits.

Various types of electric bell. Bell indicators. Bell circuits.

Power load. Reasons for separate supply and sliding scales. What may be supplied from power mains. Basic points of construction and rating of the usual domestic heating units.

#### STAGE II

Installing and fixing conductors and cables. Bare conductors; V.I.R. cables; metal-sheathed cables, including paper-lead cables; armoured cables; tough rubber protected cables; multiple and coaxial cables; flexible cords and cables.

Metallic conduits, including the installation of conduits in concrete floors. Duct systems.

Distribution systems having a common return. Rules for two-wire and three-wire distribution. Lighting and power on these systems.

Continuity and earthing—methods.

Testing of installations. Tests for insulation, continuity and polarity of conductors. Tracing out circuits; testing for location and remedy of faults.

Arc lamps and resistors.

Explanation of difference between a.c. and d.c. voltages. General idea of a.c. transformation; fundamental principles of high tension distribution with low tension for consumers. Phase difference.

### STAGE III

#### *Motors and Generators*

Installation. Maintenance. Causes of faults. Testing for faults in machines and switch-gear. Rules for installing and earthing motors for small appliances.

Protection of machines by fuses and circuit breakers, and the more detailed consideration of protection and earthing devices for power circuits.

#### *Alternating Current*

The effect of inductance and capacitance upon current and power. Power factor. Effect of low power factor on the size of cables. Why a.c. plant is rated in kVA. Simple calculations on a.c. circuits.

Three-phase supply. The general theory of three-phase alternating E.M.F.s.

Three-wire and four-wire three-phase supply.

Simple description of the action of induction motors. Methods of starting single-phase and three-phase motors, auxiliary phase capacitor, star-delta, auto-transformer, and rotor resistance.

Simple description of the methods of converting a.c. to d.c.

Electric signs and discharge tubes—general principles of installation. Installation of discharge lamps.

#### *Telephones*

Fundamental principles of telephone and microphone. House telephone circuits.

### SCHEME OF PRACTICAL WORK

Connexion of ordinary accessories.

Preparing ends of wires for connexions.

*Systems of wiring.* Steel conduit, tough rubber-sheathed, metal-sheathed, coaxial, copper conduit, and cleat work. (The practical work under this heading to include the handling of the various materials used, and instruction in the special points to watch in each system, the use of different types of boxes for surface systems, correct methods of running conduit to suit various conditions, with special attention to continuity in metal-sheathed systems and conduit.)

*Jointing.* Married and T-joints on 7- and 19-strand cables.

The use of fluxes.

Sweating sockets and cable lugs.

Watertight junction boxes for paper insulated cable.

*Switchgear.* Dismantling and assembling simple starter motors for d.c. and a.c., to familiarize the student with the actual working parts.

*Use of instruments.* Ammeter, voltmeter, wattmeter, insulation and earth continuity testers.

Connexions in simple telephone circuits.

#### OTHER SUBJECTS FOR STUDY

##### *Electro-Technology*

Elementary magnetism. The magnetic field.

Heating, chemical and magnetic effects of electric current.

Necessity for continuous conducting path. Conductors. Insulators.

Cause of current, potential difference.

Necessity for potential difference—resistance.

Ohm's Law, with simple calculations. Series and parallel circuits.

Relation of resistance to dimensions.

How potential difference is caused by primary cells, secondary cells and electro-magnetic induction.

Methods of measuring current, potential difference and resistance, use of ammeters and voltmeters.

Electrical work and power—the joule; the watt.

Quantitative discussion of heating effect. Effect of temperature on resistance of conductors and insulators.

Relationship between the various units; watt and h.p.

*Generators.* Principal parts and functions of different types of d.c. generators. Switch and control gear. Voltage regulation.

*D.C. motors.* Principal parts and functions of different types; special purposes for which they are suited. Speed regulation. Starter motors, connexions and safety devices.

*Chemical effect of electric current.* Distinction between primary and secondary cells. Care and maintenance of secondary cells, both lead-acid and alkaline. Layout of battery equipment with charging arrangements.

##### *General Science*

*Mechanics.* Force; work; power; lifting machines; triangle of forces.

*Heat.* Use of thermometer. Transmission of heat by conduction, convection and radiation, with reference to electrical heating and to the cooling of machines. The heat conducting property of insulating materials with consequent temperature rise and danger to insulation.

##### *Mathematics*

*Arithmetic.* The elementary rules of arithmetic; addition, subtraction; multiplication and division of fractions and decimals; approximations and contracted methods; ratio and proportion; percentages; square roots.

*Algebra.* Algebraic laws; brackets; factors, and substitution of numerical values in formulæ. Problems leading to simple equations.

Indices; the practical use of logarithms. Use of squared paper; graphs.

*Geometry.* The practical construction of plane figures to given dimensions—e.g., the layout of a floor of an irregularly shaped room.

*Mensuration.* Methods of obtaining areas of rectangle, triangle and circle, and of plane figures which can be sub-divided into these forms.

Methods of obtaining volumes of prisms of various shapes, spheres and cylinders.

*Trigonometry.* Definition and use of *sine*, *cosine*, and *tangent*. Use of tables for solving simple problems.

### *Drawing and Sketching*

Diagrams of connexions for lighting circuits.

Motor and starter motor diagrams.

Making up wiring diagrams from theoretical wiring diagrams and actual apparatus.

Principles of orthographic projection.

Simple building plans and wiring diagrams.

The reading of drawings (plans, sections, elevations).

Making dimensioned free-hand sketches of items such as switches, starters, fuses, distribution boards; sketching on squared paper.

Foundation plans of machines; mounting and lining up.

Methods of drawing complex plant.

Students must provide their own drawing boards and instruments at examinations.



## MONOGRAPHS ON FUNDAMENTAL EDUCATION

*The books quoted below are obtainable through bookshops or directly from the National Distributors.*



### I. FUNDAMENTAL EDUCATION. Description and Programme. Illustrations by Mrs. CAMILLE BERG.

A short theoretical treatment of the subject.

85 pp.

\$ .25    1/6    75 fr.

### II. CO-OPERATIVES AND FUNDAMENTAL EDUCATION. By MAURICE COLOMBAIN.

The author is a well-known authority on the co-operative movement. He writes here for educators, and describes some forty experiments and institutions which have made significant contributions to raising living standards. Co-operation itself has an educational value, and offers many fruitful possibilities to the fundamental educator.

186 pp.

\$ .60    3/6    160 fr.

### III. THE MEXICAN CULTURAL MISSION PROGRAMME. By LLOYD H. HUGHES.

Based on a study carried out on the spot, this publication outlines the organization of the Missions and describes their various activities. The author gives both a history of the initial stages of the programme and an analysis of the present position—a revealing picture of the results achieved and the problems involved.

83 pp. Illustrations

\$ .45    2/6    125 fr.

### IV. THE HAITI PILOT PROJECT. First Phase, 1947-1949.

At the request of the Government, a pilot project in fundamental education was set up by Unesco for the estimated 28,000 inhabitants of the Marbial Valley. This booklet traces the development of the project from an exhaustive preliminary survey to the first signs of real progress in education, agriculture, hygiene and the development of rural industries. Of interest to educators working in underprivileged areas throughout the world.

79 pp. Illustrations

\$ .35    2/-    100 fr.

### V. THE HEALTHY VILLAGE. An Experiment in Visual Education in West China.

A report on a one-year experiment carried out in 1949 by Unesco with the co-operation of the Chinese National Association of the Mass Education Movement. The goal was to make audio-visual aids which could be used in health teaching with a partly illiterate rural population; the theme chosen was "The Healthy Village". The Director's report on the background, administration, finance and other phases of the project is followed by detailed accounts of the work of the Field, Health and Art Departments.

119 pp. Illustrations

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