

TECHNICAL EDUCATION.

MR. FENNER'S FIRST REPORT.

IMPORTANT RECOMMENDATIONS.

Mr. Charles Fenner, M.Sc., who began his duties in South Australia as Superintendent of Technical Education shortly before the Christmas holidays, has presented a report to the Minister of Education, embodying proposals for the enlargement of the scope of the present system of technical education in this State. Mr. Fenner says:—

Higher Technical Education.

Apart from the University of Adelaide, the only metropolitan technical school is the South Australian School of Mines and Industries; the latter institution combines the functions of a technical university with those of an evening vocational school. The excellence of the diploma courses at this school is widely recognised, and it is doubtful whether there is any other centre in the State where a senior technical school could be successfully established to teach all the subjects of the various diploma courses. Therefore the Adelaide school will remain the chief "higher" technical school of the State, and to the diploma courses there the whole of the other schools, with certain exceptions noted below, will act as feeders. The question of the number of students to be sent along to the senior school is a serious problem. It would be unwise to produce large numbers of diploma-holders in the various higher courses of the schools, unless there is a definite demand for them within the State. True, the State would be the richer by having a large number of skilled and efficient technical men, but if there is not a steady demand for such men, with a proper remuneration, they will become discontented, and will turn to work other than that for which their training has fitted them; this will certainly tend to discredit higher technical education. The secret of the success of both the higher technical and the trade schools depends on (1) a demand for the more skilled men, and (2) a monetary recognition of their merit. It is the absence of the second factor that is, to some extent, retarding the progress of such technical education as is at present established. As pointed out with much force by Mr. Donald Clark, in his report, it is necessary that the schools at Port Pirie and Moonta be given space, staff, and equipment for the carrying on of special higher courses. Moonta is well fitted as a training ground for general mining engineers, &c., while Port Pirie should be the natural graduating school for all the metallurgists of the State. In order to allow for the proper development of these two schools along the lines suggested, it will be necessary to have an able, full-time, technical man in charge of each school. These matters will be more fully reported on at such time as a clearer arrangement of the necessary details is found, by conferences with the councils and with the officers of the leading companies concerned.

Country Technical Schools.

These are:—1, Port Pirie; 2, Moonta; 3, Gawler; and, of less importance—4, Kapunda; and 5, Mount Gambier. Each of these schools has been established and controlled wholly by a local council receiving a Government grant. In each case the school has evolved to suit various local demands, and each has a separate syllabus, separate ideas of organisation, &c. In all cases I have found that these schools will welcome the uniformity of standard and the guidance and direction that will naturally follow from the new system. It must be admitted that there is not very much of the higher grades of the really technical work being taught. The greater number of students attending are in the lower grades and in the less valuable classes (dressmaking, domestic, shorthand, typewriting, &c.). Even here there is a very great "wastage." An earnest student might be considered to have done something worth while if he or she has completed a two-years' course; instead, we find that the majority of students attend a month or two and drift out. In such cases the school has probably done them more harm than good, and thus also the item, "number of students"—as claimed by the schools—is more or less misleading. The name of School of Mines and Industries is in most cases inappropriate and mislead-

ing. They would be better called technical colleges or senior technical schools; in some cases the title of technical classes would suffice. The governing head of each centre should be a man of administrative ability and technical knowledge, and when such men are found the office of registrar or secretary should give way to that of principal. Unproductive and dilletant classes will be discontinued.

Agricultural.

South Australia is at present mainly an agricultural State; the chief products are wheat, wine, wool, fruits, &c. The factors which govern these matters, as far as known at present, strongly suggest that this State will never be either a great mining or a great manufacturing State. Its chief development therefore must be in the direction of increased productivity of the areas at present cultivated, and in methods for opening up other areas for cultivation. The great part of the extra-metropolitan population will thus always be farmers, and special efforts must be made to extend education

among them. The Roseworthy College at present caters for the higher education in agricultural work, and the nature study branch of the primary and secondary schools also does a vast amount of good in the early training, by observation and experiment, of the young people who are to be the farmers of the future.

Since there is a large number of purely agricultural centres in this State, it appears to offer excellent opportunities to what should be a very successful experiment, namely, a travelling technical school. This would be open to lads who had completed their primary education (13-14 years of age), who intend to follow farming pursuits, and who will agree to attend the school regularly for two years. The two-year course might include the following subjects:—1. English and commercial correspondence, grade I. and II. 2. Arithmetic and book-keeping, grades I. and II. 3. Farm blacksmithing, grades I. and II. 4. Farm carpentry and building construction, grade I. and II. 5. Agricultural botany, grade

I. and II. 6. Agricultural chemistry grades I. and II. 7. Physics or other selected subject. On the basis of population and location, the following six centres could be selected for the experiment:—Kapunda, Mount Gambier, Narra-coorte, Murray Bridge, Petersburg, and Burra or Brinkworth. There would need to be at each centre a teacher-in-charge who would keep all records, control attendance, &c., and throughout the year teach the subjects of English, commercial correspondence, and such drawing and dimension sketching as is necessary. For each of the other six subjects mentioned above, there would be a specially selected teacher, who would teach his own subject in each centre, in rotation. This would give some six weeks for each special subject at each centre. In the first year only grade I. of the various subjects would be taken, but in the second year of the school's existence both grades of all subjects would of course be in operation. This arrangement would allow those who take the course to complete same by the age of 16, a factor that

is very important in agricultural communities. In two of the centres named the necessary accommodation is probably already in existence, and it would not be very costly to arrange for in the others. I would strongly advise the establishment of such a circle of schools. It would reach a large number of students at a comparatively low cost; it would provide education of the kind most valuable in the country districts, and should form the basis for a more widely-extended system in the future. If the department approves of this proposal I shall conduct further enquiries as to staff, buildings, and equipment, and the probable number of lads available at the various centres.

Junior Technical Schools.

The establishment of junior technical schools ("preparatory trade schools" or "pre-vocational schools") is one of the fundamental necessities of whatever system of technical education is adopted here. Quite definite knowledge is held of the functions and value of such schools, and there is nothing of an experimental nature in their establishment. Any one of the names above suggested implies the function of these schools. They are "junior technical," in so far as they take the boys

who have received the qualifying certificate (age, 12½-13½ years) and give to them two (or three) years of somewhat specialised work, tending to bend the minds of the boys towards the workshops and the industrial world. The work covered is also such as will best prepare the lads to at once enter the established senior technical schools (the Schools of Mines). They are "preparatory trade" schools, since it is expected that the majority of the boys will pass from them directly to the various trades. The second year of the school work specialises along certain lines, and by the end of the second year the teacher has a good idea of the fitness of each lad for some particular trade. It will also be part of the function of the headmaster of these schools to keep an employment bureau, to be in close touch with all employers of his locality, and to keep a record of the future trade career of each student as far as is possible. The half-dozen most brilliant students of each year should receive scholarships to enable them to take up selected diploma courses in some School of Mines or senior technical school. Similarly, the schools are "pre-vocational" in their function. There will be a certain amount of vocational guidance exercised by the teachers in directing the lads towards fitting occupations. No student will be accepted in these schools who does not intend to enter the industrial world.

Staff.

Mr. Clark had suggested that if necessary there should be an exchange of teachers between South Australia and Victoria. This suggestion will probably be acted on, but every effort will be made to obtain all the necessary teachers in South Australia. The headmaster should be a technically-trained man, young—a man who is prepared to keep in close touch with the industries of the locality, and with the local primary schools from which the students will come. The teachers also must have some knowledge of and sympathy with the necessities of the workshop, and should preferably be tradesmen or men with some technical training as well as being teachers. In New South Wales this difficulty was very well solved by selecting a number of young journey-men tradesmen, submitting them to a literary and practical examination, and then giving the successful ones a six months' special course in the Teachers' College. I met several of these men and saw them at their work; they were very successful indeed. It is probable that each junior technical school established will develop into an evening trade school; this is a separate problem, and may be dealt with when it arises.

Buildings and Location.

It would be giving the junior technical school system no more than a fair start if four schools were established, two large ones in the city and two smaller ones in the country. In view of the present circumstances, however, the absolute minimum is suggested for a beginning, viz., one junior technical school for the city and one for the country. The city school should be situated among the north-western suburbs of Adelaide, conveniently close to the larger industrial concerns, and also to the large primary schools. The best locality for the first country school is undoubtedly at Port Pirie. The city school should be built to accommodate 300 students, and the country school, say, 150. New buildings are necessary; the nature of the work is quite special, and adapted buildings are always to my personal knowledge a source of continual dissatisfaction and inconvenience to staff and students. Moreover, it is desirable that the boy who elects to enter the industrial world should be made to feel that he is doing a proper and desirable thing, and nothing is more valuable for this purpose than to give him a well-lighted and well-ventilated building and good playgrounds, all his own, and specially built for him—a school around which may be developed that necessary school spirit that makes for success in all educational concerns. There is every reason why the school in which the young artisan's education is conducted should be equally as admirable as that supplied for those about to enter any other department of life.

Junior Domestic and Junior Commercial Schools.

Bath these types of school could be successfully established in this city. Since, however, some work of this nature is already being carried out, consideration may be postponed for the present. It would be desirable that this type of work be concentrated in special schools, as the money becomes available for building and

equipping them. A scheme could be drawn up to include the best features of those already established in the eastern States. Such schools would be quite analogous to the junior technical schools above outlined, but would be devoted wholly to domestic or commercial work, as the case may be. The best means of attacking the matter of agricultural education has already been outlined above, in the paragraph dealing with the travelling school. The question of the establishment of a technical high school is postponed for the present.

Regulations, Syllabus, &c.

Regulations for the governance of the present senior technical schools (Schools of Mines and Industries) will be drawn up and submitted to you during the year. It will be necessary for the department to have drawn up and published a uniform syllabus covering all the subjects and grades of work taught in these schools.

This is a work of fundamental importance, and it would be a very great advantage if the Adelaide School of Mines were to work in with such a scheme. If so, I should suggest that the syllabus of that school be made the basis of consideration, and that a series of conferences be held, attended by representatives of the employers, employes, and teachers of the work concerned. At such conferences a syllabus could be drawn up that would be satisfactory alike to the workshop and the schools. Such conferences could also be utilised to discuss other questions that may arise concerning the education of apprentices, &c. It is strongly advisable that the department take over the whole matter of conducting the annual examinations, as is done in the technical schools of all the other States. A uniform system of enrolment must also be introduced, which will necessitate the printing and distribution of roll-books, enrolment forms, &c.

General Considerations.

Technical education, more than any other type of education, should be closely interwoven with the social and economic legislation of the State—especially of factory and wages board legislation. This involves consideration of the very important questions of compulsory apprenticeship, recognition of school certificates, compulsory education after 14, time off in the day for study, and—probably the most important of all—the compulsory registration of efficient tradesmen. The discussion of these matters might well be left in the hands of a special sub-committee of the Advisory Council of Education. In this State, as elsewhere, there is a popular notion that the "education" of an individual is completed when, at the age of 14, the primary school course is finished. The following figures from the 1911 census are of interest in this connection:—Number of males between ages of 14 and 21, Adelaide and suburbs, 13,091; females, 14,040; total, 27,041. Total for State—Males, 29,908; females, 29,618; total, 59,524. Compared with these figures, we may note that the students enrolled at technical and high schools were, for one year:—High school—2,509; technical schools, 3,684; total, 6,253. This would suggest that of about 60,000 young people between the ages of 14 and 21 only about 6,000 were receiving instruction. The following figures, provided by the same census, are of much more definite value:—Males between 14 and 18 years receiving instruction, 1,294; females, 1,482; total, 2,776. Not receiving instruction—Males, 15,863; females, 15,470; total, 31,333. This clearly shows that less than one person in 12 receives instruction after the age of 14. It is also clear that in this State nearly 30,000 young people at the important age of 14-18 years are receiving no instruction whatever. Such figures can leave no doubt of the necessity for extending the scope of the various types of "secondary" education. Since the great majority of the young people concerned in the above lists are probably engaged in agricultural, domestic, or industrial occupations, efforts should be made to provide educational opportunities for at least the brightest and most ambitious among these thousands. A start would be made by the establishment of the three schools projected in this report.

Postscript.

In addition to the schools mentioned in this paper there is also great scope in this State for the introduction of manual training (woodwork) into the public school curriculum for all boys above grade IV. This could be best done by means of suitably-distributed centres, each capable of taking 30 boys, in batches of 30, giving each batch one half-day per week. The equipment of such a centre (one room and store-room) would cost about £120 and could be managed by one teacher and a junior assistant.