

EARLY SCHOOL LEAVING

AN inquiry into the factors influencing the age at which children leave school, and the steps desirable to increase the number of those who stay after the age of fifteen, has been completed by the Central Advisory Council for Education (England). The Council's findings and recommendations have been published in a report, "Early Leaving" (H.M.S.O., 1954. 3s. 6d. net) (see also p. 313).

A comprehensive study was made of the number of leavers at various ages, something of their background, school records, motives and subsequent careers. For this purpose, a 10 per cent sample was taken of maintained and direct-grant grammar schools in England.

The heads of 114 schools completed a questionnaire giving as much information as possible on these lines in respect of each boy and girl who entered school with the intake of September 1946. In addition, evidence was secured from boys and girls themselves, through youth clubs and certain groups of national servicemen.

One of the most important factors influencing the age at which boys and girls leave school was found to be the home background. Professional and managerial families' children accounted for only 15 per cent of the child population, but represented 25 per cent of the grammar school population and 43·7 per cent of the sixth-form complement.

School records of children in different social groups were studied, and it was found that from children of parents in professional or managerial occupations at one extreme to the children of unskilled workers at the other there is a steady and marked decline in performance at the grammar school, in the length of school life, and in academic promise at the time of leaving. This is not a mere development of the better performance at the age of eleven of children in certain groups; it reflects a widespread changing of places in academic order between eleven and sixteen or eighteen years of age.

Shortage of money in itself is a less-common reason for leaving than some others—overcrowding in the home and "different social assumptions" are important considerations. The handicap of adverse home conditions, moreover, tends to increase throughout the school course and falsify many of the predictions made in the process of selection.

To meet the problem raised by unsuitable home conditions, the report recommends investigation and possible help by an appropriate social agency such as the school health service, provision of boarding facilities by local education authorities, and concessions by schools and education authorities, such as keeping the public libraries open until 9 p.m., keeping schools open after normal hours, in country areas the opening of primary school premises in the evening, and more generous assistance to youth clubs which cater especially for grammar school pupils.

Boys tend to stay longer at school than girls and do rather better academically. Evidence confirms the common belief that many parents attach more importance to their sons' education than to that of their daughters.

The Council found that while there has been a continued and marked tendency towards a longer

school life since the War, there was a very large number of boys and girls leaving at fifteen who would do well to stay on at school for another year. The value of a school life extending beyond sixteen depends on the character, and especially the intellectual ability, of the particular child.

From the grammar school intake of 1946, in addition to about 10,000 boys and 7,000 girls who took advanced sixth-form courses, there were about 5,000 boys and 5,000 girls who had the capacity to do so if they had stayed longer at school. Of these, about 2,900 boys and 1,300 girls would have been suitable for courses in science or mathematics. There is a great national need for scientists of many kinds; all the scientists of good quality that the schools can produce will be absorbed if the universities and technical colleges can expand their scientific intake. The problem remains of providing the necessary scientific staff for the schools; but if this can be solved, the 4,200 potential scientists out of the additional 10,000 boys and girls who could well take advanced courses should have no difficulty in finding suitable occupations. It is acknowledged that "some of those who have the intellectual capacity for sixth form work may be right to leave without undertaking it"; but if pupils capable of taking advanced courses can be persuaded to stay at school they will be serving both the community and themselves.

The Council recommends that, in drawing up building programmes, local education authorities should estimate generously the need for grammar school places to allow both for an expansion in the size of their intake and also for an increased proportion in the fifth and sixth forms.

The process of selection for secondary education should allow for a small number of grammar school places to be filled at each individual school by alternative methods; more transfers from modern to grammar schools, even after the age of fifteen, should be made.

Local education authorities should review the circumstances in which children leave school early for financial reasons, and adjust their schemes of aid accordingly.

Drastic revision of the less-generous scales, provision of higher grants for older children, generous allowances in respect of further dependent children, and consideration of the use of scales based on net rather than gross income, are the main suggested needs. The Council also believes that the law should be amended to provide for the payment of family allowances for children still at school up to any age. At present such allowances cease when the child reaches the age of sixteen.

A number of recommendations are made for the consideration of employers, trade unions and professional bodies. Many young people, especially boys, leave school early in order to get a job. Conditions of entry to many professions and trades do not encourage a longer school life; craft apprenticeship schemes influence boys to leave school at not later than sixteen. The possibility of reducing the length of craft apprenticeship for boys who have stayed at school for a full five-year course should be considered, and the number of student apprenticeships

increased; terms of admission to the professions should provide a greater incentive to pupils to reach sixth-form standard. In clerical and office careers, there should be a more effective system of grading linked with minimum ages of entry and differential scales of pay.

The report also makes suggestions for administrative action within the schools. These include treating the whole work of the school, including the sixth form, as continuous, and introducing some transition to sixth-form ways of working earlier in the school course; providing more science facilities for girls and experimenting more widely in such courses for boys; providing comparable courses for pupils of similar ability in grammar and modern schools; maintaining regular personal contact with the home and increased co-operation with the Youth Employment Service and employers.

T. H. HAWKINS

CENTENARY OF ALUMINIUM

DURING June 1-11, at the Royal Festival Hall, London, the aluminium industry is presenting a Progress Exhibition, not only to mark the centenary of aluminium as a commercial metal but also to demonstrate how the present vast output and unique experience already gained are now being applied to every great industry in increasing measure. It was at the Paris Exposition in 1855 that the French scientist, Prof. St. Claire Deville, who had succeeded in extracting aluminium from clay by a chemical process, exhibited samples of the metal. Aluminium was rated a precious metal, since it cost £60 per pound to produce. The first article to be made of the new metal was a rattle for the child of the Emperor Napoleon III, who ordered aluminium cutlery to replace the gold plate at the Tuileries banquets. An aluminium watch-chain was also presented to the King of Siam, when on a State visit to France. Attracted by its light weight, the Emperor commissioned Deville to produce aluminium on a large scale so that, with its cost reduced, it could be used for equipment for his soldiers. However, only ten tons of aluminium were produced in the whole world in the next ten years, its lowest price being £3 per lb.

In 1886, Charles Martin Hall in the United States and Paul Heroult in France, working independently, simultaneously patented the electrolytic process for extracting aluminium from its oxide. To-day, using basically that same method of extraction, 30,000 tons of pure aluminium are produced in Britain alone, at the great hydro-electric plant in the Scottish Highlands, and world production in 1954 has probably exceeded three million tons and is still increasing. From £144,400 per ton its price is now £165 per ton, and aluminium has the distinction of having increased in price to a less extent than any other important commodity. In 1907 came the discovery by a German scientist, Alfred Wilm, that by alloying small quantities of other metals with aluminium, its strength could be greatly increased. Further research and development in Britain produced a wide range of alloys which made possible the development of the aircraft industry and of the internal combustion engine.

The ten years that have followed the Second World War have been years of remarkable progress when

research results have been applied to problems in every industry. First came the aluminium prefabricated house, 70,000 of which were built; to be followed by the adoption of aluminium in permanent building construction. In shipbuilding its success was never more strikingly demonstrated than by the great American liner *United States*, which has more than two thousand tons of aluminium in her superstructure, lifeboats and many fittings; less spectacular applications of aluminium to ships had already become a commonplace in Britain. The world's first aluminium bridges have been built in Britain, and aluminium coaches of London's Underground trains, and aluminium bus bodies on London's streets, provide ample evidence of the faith of the engineer in aluminium.

Its light weight and its resistance to corrosion, symbolized by Gilbert's famous aluminium statue of 'Eros'—now more than sixty years old—have made this the 'Light Metal Age'. If the progress, especially in the past ten years, has been remarkable it is still only a beginning; for the future of aluminium is boundless in its possibilities.

THE VICUNA

IN a recent issue of *Oryx*, Dr. G. Dennler de la Tour has described the characteristics, habitat and behaviour of the vicuna (11, No. 6; December 1954).

In form the vicuna resembles the guanaco, but it is smaller and slenderer. Its colour varies from pale fawn, through vermilion and golden to strongly fulvous. The vicuna has no black on its face, as has the guanaco. From the throat to the knees there is a pure white tuft, the belly and inner sides of the limbs being white also. The vicuna stands 28-35 in. high at the shoulder, its average size decreasing from south to north in its South American range. Its wool is shorter but much finer than that of the guanaco and is probably the finest and lightest wool in the world. Vicunas are found in small droves of five to fifteen females led by an adult male which watches over the flock. Young males are expelled from the flock by their mothers when they are eight to ten months old and unite into herds of from twenty to a hundred or more.

The mating season lies between April and June and, as the gestation period is ten months, parturition occurs between January and March. The vicuna almost always produces one offspring; in confinement it does not breed readily.

Vicunas feed on grasses of *Poa*, *Bromus*, *Agrostis*, *Stipa*, and other alpine genera. They drink only every two days and always use the same track to water.

The vicuna, generally speaking, lives at higher altitudes than the guanaco. It enjoys humid meadows which lie adjacent to the eternal-snow summits of the Andes, many of which reach and pass the 6,000 metre mark.

Vicunas occur in the high plateaux of the Andes between 3° S. and 30° S.; that is, in the extreme south of Ecuador, in Peru and Bolivia, in the extreme north of Chile and in north-western Argentina. Their southern limit is in Argentina at about the Agua Negra River, while their Chilean range does not go so far southwards. Where man has advanced with his sheep and goats, alpaca and lama breeding