

to take part in South African warfare (the fact that he did so twice with conspicuous success and usefulness, both as officer and negotiator-interpreter, renders more fatuous than ever the attempt of Mr. H. J. Tennant, then Under-Secretary for War, and Lord Kitchener to deter him from going out to German East Africa in 1914). After the second Matebele War was over Selous and his wife returned to England and made their home in Surrey. Although—according to his biographer—Selous was treated shabbily by Cecil Rhodes and the Chartered Company, other South Africans endeavoured in some way to recompense him for his noteworthy services to British South Africa; so that with the remains of the capital he had put together during his many years of elephant-hunting, book-writing, and lecturing, he had by 1897 acquired a modest competence; enough to permit of his living quietly in England and making hunting trips and egg-collecting journeys in America, Asia Minor, and East Africa.

He was not made use of by Mr. Chamberlain or the Colonial Office in any advisory capacity because, it is said, of his plain speaking over the Boer War, mainly as to the causes that led up to that war; and despite the fact that he spoke South African Dutch and was immensely respected by both Dutch and British in South Africa, he was not employed by the War Office during the long-drawn-out campaigns of 1899-1902. A lingering prejudice seems to have actuated the War Office in 1914 in declining his services as a volunteer in any capacity to defend British East Africa in 1914 or to attack German East Africa in 1915. Similarly the Colonial Office and War Office—Lord Kitchener being most to blame—refused to employ other great African pioneers in the East African campaign, with the result that during the first twelve months of the war it was characterised by blunders and disasters, nearly all of them due to complete lack of local knowledge—knowledge of the geography, climate, people—which men like Selous and Sir Alfred Sharpe would have been able to supply.

When Selous was allowed—grudgingly—to go in the middle of 1915, he did some very effective soldiering until he was killed in an attack at the head of his men on a little German fort at Behobeho on January 4, 1917. (Behobeho is the place where another African pioneer, Alexander Keith Johnston, lies buried—1879.)

Selous, between the later 'seventies and 1914, enormously enriched the national collections at the British Museum of Natural History, for which, of course, he received no recognition from a science-ignoring (rather than -disliking) Government. Readers of NATURE will chiefly value Mr. Millais's book for the careful way the author has skimmed the published and private writings of Selous and his correspondents, such as Theodore Roosevelt, for notes on the life-history of the mammals of Africa and North America, and on the bird-life of the eastern Mediterranean countries.

H. H. JOHNSTON.

PART-TIME EDUCATION IN THE UNITED STATES.

THE sixty-fourth Congress of the United States approved on February 23, 1917, an Act to provide for the promotion of vocational education; for co-operation with the several States of the Union not only in the promotion of such education in agriculture and the trades and industries, but also in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure. There was thereupon set aside from Federal funds, first to aid in paying the *salaries* of teachers and directors of agricultural subjects sums of money annually, beginning with 100,000*l.* in 1918, and rising by annual increments to 600,000*l.* in 1926; and secondly, a like subsidy to aid in payment of the *salaries* of the teachers and directors of trade, home economics, and industrial subjects, to be distributed to the several States, as regards agricultural subjects according to the ratio which the rural population bears to the total rural population of the United States, and as regards the other subjects before-named in the proportion which the urban population bears to the total urban population of the United States. The Act further provides funds for the *training* of teachers and directors of agricultural subjects and also of the other subjects before-mentioned to the extent of 100,000*l.* in 1918, increasing to 200,000*l.* in 1921 and thereafter.

The Act is mandatory upon all the States of the Union, each of which must appoint either its existing Board of Education or a special State Board comprised of not fewer than three members to administer the Act in co-operation with the Federal Board for Vocational Education, which consists of seven persons—namely, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labour, and the U.S. Commissioner of Education, together with three other persons representing the respective interests of agriculture, manufactures and industry, and labour, and assigns to each of these three a salary of 600*l.* They are to co-operate with the State Boards, and are empowered to make, or cause to be made, studies, investigations, and reports thereon with particular reference to their use in aiding the States in the establishment of vocational schools and classes, and in giving instruction in the various vocations—the inquiries to include processes and requirements affecting the various pursuits and those who follow them, as well as problems of administration of vocational schools, and the Act assigns for these purposes the annual sum of 40,000*l.*

The several State Boards are to submit plans for giving effect to the Act to the Federal Board, which, so far as they are in conformity with its provisions, will be approved. All vocational education aided by Federal funds shall be under public supervision and control, and moneys assigned in aid of the *salaries* of teachers and

directors of vocational education, and all moneys in aid of the *training* of teachers and directors, must be matched by an equal sum on the part of the State Boards, upon which bodies will fall all the initial and annual expense of buildings, equipment, and administration. The purposes of the Act are rigidly defined. They are to fit young persons for useful employment, the teaching is to be less than college grade, and is to meet the needs of persons of more than fourteen years of age engaged in agricultural, commercial, and industrial pursuits and in home economics. The Federal Board is to inquire and to report annually to Congress as to the administration of the Act throughout the States, and as to the expenditure, and to include therein the reports of the several State Boards.

This important Act of Congress, whilst it has many commendable features, does not require compulsory attendance on the part of young people engaged in employment at continuation or part-time schools. This is regarded as vital to the efficiency of the Act in a bulletin issued by the Federal Board for Vocational Education, in which it is stated that the initiative not only for establishing such schools, but also for compelling the attendance of those for whom the instruction is provided, must be taken by the States, and that it is not probable that State schemes for part-time education will develop materially until after the passage of legislation authorising and directing the establishment of such schools, providing State funds for their equipment and support, and compelling the attendance of the young people for whom they are designed within the ordinary working hours. It is officially stated in the bulletin referred to that out of a total population, male and female, between fourteen and eighteen years of age, of 10,250,000, 5,000,000 have ceased school attendance altogether. The only State of the Union which has adopted a real measure of compulsion for pupils between fourteen and sixteen years of age having work permits is Pennsylvania, under a law enacted in 1915, and already there are 100 school districts with 36,000 pupils in attendance at part-time continuation schools; but the movement is growing, and already there appears in Bulletin 19 a draft of a suggested new State law providing for compulsory part-time education and part-time employment for children between fourteen and sixteen.

The total *day-school* enrolment of the States in 1915 was 21,958,836, of which number 91 per cent. were in the elementary schools, 7.13 per cent., or nearly 1,566,000, in high schools, academies, and secondary schools, and 1.84 per cent., or about 404,000, in higher institutions—sufficiently significant figures when compared with those of the United Kingdom. The Federal Board sets forth in a most useful and illuminating bulletin six types of continuation schools: (a) The unit-trade school, which deals solely with the needs of a single trade, and into which, having settled upon his future employment, a young

person can enter after fourteen years of age for a period of whole-time training of not less than thirty hours per week for not less than thirty-six weeks of the year, half the time to be given to practical work on a useful or productive basis, and the other half to related and non-vocational subjects; (b) the whole-time general industrial school for towns of fewer than 25,000 inhabitants on the same basis as the unit-trade school; (c) the part-time trade extension school within working hours for persons more than fourteen years of age already engaged in a trade occupation; (d) a part-time trade preparatory school for persons already in employment, but desirous of changing it; (e) a general continuation part-time school where opportunity would be given for the study of English, civics, home economics, and commercial subjects; (f) evening schools or classes for special trades and industries supplemental to day employment for persons above sixteen years of age.

The Federal Board has issued upwards of twenty important bulletins dealing with general policies and methods, agriculture and special trades and industries, different types of schools to suit differing localities and circumstances, measures for emergency training in various industries, training of vocational teachers, rehabilitation and re-education of disabled soldiers and seamen, and, finally, with buildings and the equipment necessary to give full effect to the Act. This series of publications is deserving of the closest study, as the principles and practice they embody are of general application. They should be consulted by every director of education, and be accessible in every reference library of the kingdom. The movements abroad in Germany and the United Kingdom are keenly watched by the executive of the Federal Board, and significant reference is made in the bulletins to recent legislation making compulsory complete attendance at school until fourteen years of age, extending elementary education by means of central schools, and establishing compulsory attendance at continuation part-time schools from fourteen to eighteen throughout Great Britain. A marked feature of the policy of the Federal Board is the insistence upon the avoidance of all vocational instruction in the elementary and secondary schools of the States.

THE FUTURE OF SCIENTIFIC INDUSTRIES.

THE report of the Engineering Trades (New Industries) Committee has recently been issued by H.M. Stationery Office (Cd. 9226, price 6d. net). The Committee was appointed, with the Hon. H. D. McLaren as chairman, to compile a list of articles either not made in the United Kingdom before the war, or made in insufficient quantities. A series of fifteen branch committees, consisting of producers and merchants, was arranged to give detailed consideration to groups of manufactured articles. They were required to make recommendations as to the prospect of set-