with in adults. He argues from all this that individuals with occult tuberculosis—the so-called healthy carriers of tubercle bacilli—are largely responsible for the spread of tuberculosis, not only amongst aboriginal and hitherto isolated peoples, but also amongst infants. He claims that this recently acquired knowledge of an unexpected danger makes the organisation of social defence against tuberculosis more difficult than when prophylaxis had to be based only on the education and isolation of phthisical patients, though he concedes that these are the principal disseminators of the disease. New peoples and infants should, wherever possible, be protected through a system of detection based both upon the judicious use of tuberculin tests and upon clinical examinations of the glandular system mainly by means of radioscopy.

It was interesting to find that Dr. Eric Pritchard, working along these lines during a period of ten years, had passed through his hands some thirty children who, by a process of injection with Koch's original tuberculin extending over five months, first in minute doses, to which they reacted, gradually increased up to 1 mg., to which the reaction was no more marked, could be immunised against any infection they were likely to be exposed to in the course of their lives. No accident such as might have been anticipated had occurred, and he was very hopeful that they had passed over that susceptible period of which Prof. Calmette had spoken.

It was felt by some who heard Prof. Calmette that his hypothesis, unless more fully explained, might lead to great misconception on the part of the public and be advanced as a reasonable excuse for inaction. If any apparently healthy person may be a "carrier"—and all may be infected in infancy—what good are elaborate precautions against tuberculous infection? The various public authorities might feel justified (and some might wish this) to sit with folded arms and tightly buttoned pockets. Later Prof. Calmette made it clear that his reference was only to those who had not hitherto been brought into contact with tuberculous patients, such as native races and infants, and that in civilised tuberculous communities other factors, surroundings, conditions of life, sources of infection, etc., must all receive due consideration. It was insisted that much information on these points had already been accumulated, and that the time had undoubtedly arrived when the aid of legislation should be called in for the prevention of tuberculosis. Two great sources of infection, human and bovine —expectorations from the former, and milk from the latter—containing massive doses of tubercle bacilli, must still be dealt with, and dealt with effectively. No measure conducing to the removal of mass infection should be neglected. Panic or phthisiophobia may well be discouraged when we learn from Sir George Newman that in seventy-three years, since 1847, when the death-rate from tuberculosis was 3189 persons per million living, there has been a fall of 74 per cent., the standard death-rate from phthisis in this country in 1920 being 842 per million living. In other countries the decline, though not so marked, is still very substantial.

One feature was very prominent throughout the whole of the discussions. Although the search for prophylactic aids should not be discontinued, it must be recognised that the processes involved in tuberculosis are of a type different from those involved in most of the acute infective diseases, such as typhoid, plague, and the like, and, accepting this, we must follow Sir George Newman in his advice that "there is no beaten track in the further conquest of tuberculosis"; "the healthy child and the adult must be protected from massive, frequent, and prolonged infection"; "the powers of resistance of the patient must be fortified." "Freedom of thought, wide and deep research, and mobility of action will be necessary. Of much are we still in doubt, but of three things we may be certain. Only by surveying the complex problem, as a whole, in the spirit of preventive medicine, and co-ordinating the respective factors concerned, only by thorough, constructive, and intensive practice of our principles and by searching and finding the hidden secrets of immunisation, shall we at last conquer this disease."

The Progress of British Forestry.

THE First Annual Report of the Forestry Commissioners (H.M. Stationery Office, 1921, 9*d*. net) deals with the period ended September 30, 1920, since which date a whole planting season has intervened; but a preliminary note gives information of the progress made to date. The Forestry Commissioners are now in actual possession of 103,100 acres of land, of which 68,100 acres are classed as plantable with timber trees. The planting operations of the season 1920–21 have been successful, and the total area of new plantations is now about 8000 acres, while the stock of young trees in the nurseries is sufficient to plant next season a largely increased area.

The Report opens with a sketch of the history of forestry in the United Kingdom, showing the stages which led to the passing of the Forestry Act in 1919. State forestry is a new departure in this country, and this part of the Report will instruct the public in the significance of a national forest policy. In the first period—that of destruction of the original forests, which lasted in some districts up to 1750—great clearances were made for agriculture, sheep pasture, and the smelting of iron-ore. In the next period—that of private

enterprise, 1750–1885—landowners attempted by their own efforts to re-establish the depleted woodlands, and they were aided only by voluntary associations like the Society of Arts and the Dublin Society, which encouraged effectively the planting of trees by their prizes and premiums. During the war, when it was a choice between importing food or timber, it was the timber available in privately owned plantations that enabled the people to be fed.

In the third period—that of inquiry, 1885–1915—it was gradually borne in upon the public mind that unaided private enterprise could no longer cope with the growing demand for timber by our ever-increasing industries and that the primeval forests of the world were not inexhaustible. Imported timber increased continuously in price during these thirty years. Select Committees, Departmental Committees, and Royal Commissions on Forestry followed in quick succession and made recommendations which were mostly unheeded. The Development Commissioners appointed in 1909 failed "to purchase and plant land found after inquiry to be suitable"—one of the duties imposed upon them—but it must be admitted that they did useful pioneer work in providing increased educational facilities, in appointing advisory forest officers, and in encouraging with loans certain municipalities to afforest their water-catchment areas. The state of affairs, practically much inquiry and no afforestation, was unsatisfactory in time of peace. One year of war showed how critical the position was in a time of national emergency.

The final stage in our forest history—that of State action, which began in 1915 with the setting up of Lord Selborne's Committee to expedite home fellings of timber—is characterised by the adoption of a definite national forest policy by the Government, which was approved by Parliament when the Forestry Act was passed in 1919. This policy has two aims. Its ultimate objective is the creation in the British Isles of reserves of standing timber sufficient to tide the nation over three years in time of war. For this purpose the State must afforest 1,770,000 acres of new land—1,180,000 acres in forty years, and the whole in eighty years—and at the same time secure the continuance under timber (with an increased production) of the 3,000,000 acres of private forests which existed in 1914. The immediate objective is a ten-year scheme, based on a block grant of 3,500,000*l.* In this decade the Forestry Commission will afforest 150,000 acres of new land owned or leased by the State. The Commission is also bound to aid private owners and local authorities in planting 110,000 acres during the ten years.

The Report shows that there is no difficulty in the State acquiring and planting the acreage mentioned in the preceding programme. It is another story with regard to private forestry, for aid to which the Commissioners set aside 327,000*l.*, of which 137,000*l.* has been allotted to proceeds-sharing schemes between private individuals or corporate bodies and the State, and 190,000*l.* to grants and loans. However, the proceeds-sharing schemes, being hedged round with cumbersome rules to safeguard the public purse for the period of a rotation (fifty to one hundred years), are unpopular with landowners. Similarly, the statutory regulations, under which 2*l.* grants per acre are made for planting, prove to be so onerous as to offer no inducements to private individuals. The Commission must obtain powers to amend these regulations, which defeat the object of assisting landowners to make plantations.

The Report gives a detailed account of the operations carried out during the year, illustrated with a map showing the land acquired and the present planting centres. Education, research and experiments, and publications are dealt with briefly. Tables of imports of timber, statutory orders and rules, and other official documents conclude a Report which deserves to be studied by all interested in the progress of forestry in this country.

Notes.

THE classical experimental plots which Lawes and Gilbert started at Rothamsted have been of the greatest service to agricultural science, and their importance is constantly increasing. Fundamental questions in the physics, chemistry, and biology of agriculture can be attacked with more confidence in the light of results obtained from long-continued field experiments carried out on a systematic plan. Further, the results are capable of statistical examination. The importance of the Rothamsted experiments led to the institution of a parallel series at Woburn in 1876 by the Royal Agricultural Society. The Woburn soil is light and sandy, but that at Rothamsted is a heavy loam. The two series of experiments enable instructive comparisons to be made between these two soil types. All interested in agricultural science received with concern the decision of the council of the Royal Agricultural Society to relinquish—owing to economic conditions—the Woburn experiments. Fortunately the danger has been averted. Arrangements have been made for the experiments to be continued under the auspices of, but legally distinct from, the Rothamsted Experimental Station. The general portion of the Woburn farm will continue under the direct control of Dr. A. J. Voelcker, who for many years has carried out the duties on behalf of the Royal Agricultural Society. The new arrangement will not only ensure the continuance of the valuable work already done, but will also lead to a closer contact with the work of Rothamsted.

AT our request, Prof. C. Runge, of Göttingen, has been good enough to send us the following list of leading men of science in Germany who have died