

mention that it was at the same meeting that De Rougemont's travel-tales were exposed. Finally, he drew a parallel between the work of a government department in collecting and co-ordinating facts and applying them to policy, and the work of the scientific investigator and inventor, and suggested that a similar mentality was required for the due performance of each of these functions.

Mr. F. E. Smith, president, pointed out that the Faraday, Optical, Röntgen, and other Societies resemble the Physical Society in having no permanent accommodation of their own. He suggested a joint effort to obtain a central building with theatre, laboratory, refectory, and library. The suggestion was received with great enthusiasm. Lord Haldane referred to the unity of mind prevailing amongst scientific workers of different nationalities, and suggested that the introduction of scientific method into the study of national and international affairs might lead to a similar

harmony there. Sir Richard Glazebrook, in the absence through illness of the president of the Royal Society, spoke of physics as the key science on which all the other sciences depend; Prof. Fabry directed attention to the necessity for international co-operation in science; and Sir Oliver Lodge expressed the belief that there are giant stars in the rising constellation of the Physical Society. Sir Joseph Thomson, proposing "The Visitors" in a witty speech, said that, although not a student of physics while at Cambridge, H.R.H. the Duke of York had excelled in the technique of that branch of applied physics which relates to the effect of rotation on the track of a sphere moving through an elastic fluid. He assured the Prime Minister that statesmen would never appeal in vain to the scientific world for help in the difficult tasks which confront them. The High Commissioner for Australia and Mr. J. H. Jeans replied, and the toast of the chairman (Mr. F. E. Smith) was proposed by Sir Ernest Rutherford.

Antidotes against Sleeping-Sickness.

TOWARDS the latter part of 1920, German investigators announced the discovery of a new drug, "Bayer 205," which had a remarkable action on experimental trypanosomiasis in laboratory animals. It was far more efficacious than any other known remedy, and in addition possessed the great advantage of being therapeutically active in doses which were at least one-sixtieth of the maximum dose tolerated by these animals. It was later proved that horses suffering from dourine could be cured by injections of the drug. Such an active trypanosomicide naturally demanded attention from the point of view of human sleeping sickness. An opportunity offered itself in 1921. An Englishman who had contracted the disease in Africa was treated at the Liverpool School of Tropical Medicine with almost every known remedy without success. He was seriously ill and was rapidly failing. As a last resort he travelled to Hamburg, where he was given a few injections of the new remedy. The result was immediate improvement and restoration to normal health. This has been maintained to the present time, and there seems every reason to suppose that the cure is a permanent one. Since this first case was treated, numbers of others have received the drug, and in the majority of these it would seem that a permanent cure has probably been attained.

Whatever may be the final verdict, it seems clear that in "Bayer 205" we have the best-known antidote against sleeping sickness. The opportunity for testing the drug and treating cases of the disease has been afforded by the Bayer Dye Company, which has issued limited supplies to selected individuals under certain restrictions. The secret of its manufacture and composition has been carefully guarded, and though various suggestions have been made, no definite information as to its nature has been forthcoming.

Quite recently, however, the French chemist, Fournau, and his assistants announced to the Paris Academy of Sciences that they believed they had discovered the secret. In a detailed account of their investigations which has just appeared in the *Annales*

de l'Institut Pasteur, they trace the various steps which led them to the discovery. They were guided to some extent by the succession of patents taken out by the Bayer Company. Finally a lucky chance led them to produce a compound which, so far as their experiments go and the limited supply of "Bayer 205" at their disposal permits of a comparison, appears to be identical with it. The substance prepared by the French investigators is the urea of meta-aminobenzoyl-paramethyl meta-aminobenzoyl-1-aminonaphthalene-trisulphonate of sodium-4-6-8, and they designate it "309" as absolute proof of its identity with "Bayer 205" has not yet been obtained. In one respect "309" appears superior to "Bayer 205." The dose required to cure mice of experimental trypanosome infection is 1/160 of the maximum dose tolerated. Like "Bayer 205," it possesses the disadvantage of irritating the kidneys, with the consequent danger of producing nephritis.

A series of other ureas has been prepared, and some of them, though less active than "309," are not so costly to produce, and it is suggested that they may prove of service in the treatment of trypanosomiasis of domestic animals, which require much larger doses than those given to human beings. It is evident that the discovery of the nature of "Bayer 205" will lead to an increased supply of the drug and its extended use in the treatment of sleeping sickness and other allied diseases.

Whatever may have been the reason for secrecy, the action of the Bayer Company in issuing supplies only to carefully selected and competent physicians has had the advantage of preventing the flood of extravagant statements which would have resulted inevitably from an unrestricted distribution. The value of the drug is undoubted, the best method of its administration is known, its dangers are fully realised, and there is reasonable ground for hope, though this cannot be stated with absolute certainty even yet, that a large percentage of those who have been treated will be found to have been permanently cured.