

toms, so far as it is possible to judge. resembling those in man, at any rate with identical changes found in the brain after death. The problem of the nature of the disease was thus solved in a very short space of time by this brilliant piece of work.

Of the treatment of sleeping sickness there is nothing to be said. No drug or other mode of treatment has any effect; the disease is always fatal. It is possible that in prevention more hope may be put; for the tsetse flies frequent thick jungle and shun open ground. A complete study of their habits will be necessary before one can express a definite opinion; but here, as in the problem of mosquito extermination, the task will probably be no easy one.

The illustrations represent (Fig. 1) trypanosomes from a case of sleeping sickness, after Bruce; (Fig. 2) a tsetse fly (*Glossina palpalis*) $\times 3$, after Austen.

J. W. W. STEPHENS.

RADIO-TELLURIUM.

ACCORDING to a Press account of a recent lecture in Vienna, Prof. Marckwald illustrated in many striking and novel ways the intense activity of the body isolated by him from the Joachimsthal pitchblende and named radio-tellurium. The ionisation of the air in the immediate vicinity of the active substance is so intense that a current sufficiently strong to ring an electric bell was enabled to pass through it, the air forming part of the circuit. If a sheet of paper is interposed to screen the air from the rays of the preparation the effect ceases immediately and the bell stops ringing. Leyden jars were discharged without sparking by the substance, and other evidences of its great discharging power shown. All these effects were produced by a few hundredths of a milligram of the substance. Even the most active preparations of radio-tellurium, it is stated, are not self-luminous.

Prof. Marckwald obtained less than four milligrams of his substance from two tons of pitchblende. At first electrolytic methods were employed, but afterwards it was found that the active substance is completely deposited on a plate of bismuth or copper immersed for some days in the solution. The actual deposit consists almost entirely of ordinary tellurium, which possesses the power, so common in similar cases, of carrying down with it during the deposition the minute trace of active matter which is responsible for the radio-activity. The active constituent is separated from the tellurium by precipitating the solution with hydrazin hydrate. The tellurium precipitated is inactive, and the new body remains in the solution.

Prof. Marckwald is, however, alone in considering it to be a new substance. The radiations from it consist only of the α or non-penetrating variety, and this is the characteristic feature of polonium, discovered by Mme. Curie, who has protested against the name radio-tellurium being given to the body described by Prof. Marckwald. The activity of polonium, however, gradually decays, diminishing to half-value in about a year, whereas Prof. Marckwald states that the activity of his body is permanent. He also states, however, that the α radiation of the body is so powerful that he obtained sufficient light by the impact of the rays on a screen of phosphorescent zinc sulphide to be plainly visible to an audience of several hundred people. These two statements seem to be physically irreconcilable according to our present knowledge of the nature of the α rays, and it is to be hoped that Prof. Marckwald will give some account of the measurements by which he has concluded that the activity of radio-tellurium is permanent. Without in any way detracting from the

merit of his splendid researches on the nature of the active substance, most men of science will agree with Mme. Curie in protesting against a new name being given to it in the present state of our knowledge. The practice of rechristening well-known bodies and sending them back to the country of their origin with new names and as new discoveries, which seems to be prevalent among some German organic chemists, would, if adopted in the case of the radio-active bodies, lead to the recognised number being exactly doubled.

FREDERICK SODDY.

NOTES.

THE article on the new education authority for London, which we print elsewhere in this issue, directs attention to a matter of vital importance to the educational interests of London. The County Council has approved a scheme by which the Education Committee concerned with the whole of the work of secondary education in London is to be made up practically of county councillors, without any persons possessing expert knowledge of science, art, literature, or education upon it, selected from outside the council. This committee, if approved by the Board of Education, would differ from the educational authorities appointed by county councils in most parts of the country, and appears contrary to the intentions of the Act under which it is constituted. Doubtless expert opinion will be obtained by the council, but the danger is that a committee constituted like that proposed for London may not know when expert guidance is necessary, and can certainly not be in sympathetic touch with all the lines along which educational progress should be made. The only way by which the interests of higher education in London can be satisfactorily represented is by the appointment of persons with special knowledge upon the committee; and by neglecting this factor of success in order to avoid the sectarian difficulty which might be involved in the selection of men and women outside the council to serve upon the committee is in our opinion a serious mistake.

THE gold medal of the Royal Astronomical Society has this year been awarded to Prof. G. E. Hale, director of the Yerkes Observatory, for his method of photographing the solar surface and other astronomical work. The president of the society, Prof. H. H. Turner, will deliver the address at the anniversary meeting on Friday, February 12. The American Ambassador will be present at the meeting, and receive the medal on behalf of Prof. Hale.

THE sudden death of Mr. W. G. McMillan, the secretary of the Institution of Electrical Engineers, announced last week, will be widely regretted. Mr. McMillan was laid up with a chill a short time ago, which developed into an attack of pleurisy, but he seemed to be well on the way to recovery when his sudden death from heart failure took place on January 31. Mr. McMillan, after a distinguished career at King's College, was appointed to a post under the Indian Government as chemist and metallurgist to the Ordnance Factories near Calcutta. This position he held for five years, and on his return to England he was elected to the lectureship in metallurgy at Mason College, Birmingham, which position he held until 1897, when he was appointed secretary of the Institution of Electrical Engineers. Mr. McMillan has written largely on electrometallurgical subjects, his "Treatise on Electrometallurgy" and his translation of Dr. Borcher's "Electrometallurgy" being the standard English works on this branch; he recently contributed the articles on electrochemistry and electrometallurgy to the new volumes of the