

astronomers, Dr. DuBridg e said that a new 130 ft. telescope was being built at Owens Valley and that further instruments are planned for the future. Ultimately, the intention is to extend the existing interferometer by using up to ten antennae moving on two tracks at right angles to a total span of several thousand feet in each direction.

Dr. DuBridg e also reported that, during the year, Caltech's assets had increased from \$149 m to \$163.5 m, and endowment fund assets from \$74.9 m to \$78.7 m. Expenditure over the year had been equal to income, at \$26.4 m; this was made up of \$18.3 m on instruction and research, \$5.1 m for administration and plant operation and maintenance, \$1.9 m for scholarships, fellowships and other student aid, and \$1.1 m for auxiliary enterprises.

Glue Research

THE Gelatine and Glue Research Association, which recently moved from London to Birmingham, held its thirtieth Panel Meeting last week in London. This reflected less a nostalgia for old haunts than a desire to make it as easy as possible for members of the association and other guests to attend.

In the morning Dr. R. J. W. Reynolds and Dr. J. D. Seddon of Imperial Chemical Industries, Ltd., read a paper on the grafting of vinyl polymers on to polypeptides. They showed that N-halogenated polyamides and polypeptides may be used with metal carbonyls for the formation of graft polymers, and put forward a possible mechanism for grafting. After lunch Dr. P. Johns of the research association described recent advances in bone research. He was concerned mainly with the physical structure of bone, which is still uncertain, and suggested ways in which the organic and inorganic components of bone might best be separated.

The discussion of Dr. Johns's paper was followed by a symposium on gelation, chaired by Mr. A. M. Kragh of Ilford, Ltd. Dr. G. Stainsby and Mr. D. Ledward of the University of Leeds described experiments which show that if gels are tempered at about 25° C, their jelly strength at lower temperatures is considerably increased. Dr. P. Johnson, Mr. R. W. King and Mr. A. C. R. Thornton of the Department of Colloid Science at Cambridge described sedimentation, electrophoretic and fluorescence experiments on gelatine gels. Their results can be explained by a dynamic theory of gel formation, in which equilibrium is obtained when the cross linking bonds between the chains are formed and broken at the same rate. Finally, Mr. J. W. Janus of Kodak, Ltd., discussed the rigidity of gels during temperature cycling. The structures introduced at high temperatures seem to be completely different from those at low temperatures and are more stable.

Tobacco Research

PROFESSOR FRANK DICKENS is to become director of the Tobacco Research Laboratories, Harrogate, in succession to Dr. T. D. Day. Professor Dickens has been involved in biochemistry research since the twenties, and has turned his attention to the biochemistry of cancer in recent years. In 1933-40 he was director of research to the northern division of the British Empire Cancer Campaign. He is Philip Hill professor of biochemistry at Middlesex Hospital

Medical School and chairman of the British National Committee for Biochemistry.

The Tobacco Research Council has made a name for itself lately with its survey *Environmental and Personal Factors in Lung Cancer and Bronchitis in Northern Ireland, 1960-62*. This strikingly confirms the work of Doll and Hill, who showed the connexion between lung cancer and smoking. This survey is striking not so much because of what is new in the findings, but because the Tobacco Research Council is financed by the leading British tobacco companies. Professor Dickens will be a further feather in its cap.

More about Tsetses

THE Report of the Director of the East African Trypanosomiasis Research Organization for 1965 is moderately optimistic. The staffing position of the organization improved remarkably, with a large number of applications for posts as research officers. Clerical and technical staff continue to be a problem, because of the many overseas scholarships which are available to the kind of school leavers which the organization likes to recruit.

The most significant advance in the work of the organization was the discovery that cattle can act as reservoirs of *Trypanosoma rhodesiense* in sleeping sickness areas. Trypanosomes isolated from a cow in an area of Rhodesian sleeping sickness were injected into a volunteer and produced a *T. rhodesiense* infection—the first time that direct evidence incriminating cattle has been found. It was also found that the trypanosome could re-establish itself in another cow when cyclically transmitted, which indicates that domestic and other animals represent a serious hazard in endemic areas.

The way in which tsetse flies transmit trypanosomes from humans suffering from trypanosomiasis was also studied. It was shown that this can happen even when parasitaemia cannot be diagnosed in the patient either by blood film examination or by mouse inoculation. This is important, because it means that even patients who feel well enough to walk about can transmit the infection if they are bitten by tsetse flies.

African Plant Conservation

THE Association pour l'Etude Taxonomique de la Flore d'Afrique met at Uppsala in September to consider the conservation of African vegetation. This is a serious problem; plant associations and vegetation types will not survive indefinitely unless something is done to preserve them, and in Africa it is only zoological conservation that has popular support. Plants, however, provide the habitats for the animals, and so the conservation of vegetation is as important to the zoologist as to the botanist. This is now recognized by the managers of nature reserves where, as the conference was told, there is still need for a more scientific approach to organization. Knowledge of the ecology of the areas involved is of primary importance, but this knowledge is not always readily available; it should have a more important place in the education of both children and their teachers.

The conference received detailed reports of the vegetation and the steps which are being taken to conserve it in each African country south of the Sahara. The situation is desperate in Somalia, where