

often masked by other attenuating mechanisms such as may arise from the movement of dislocations. The effect sought for has apparently only been observed in copper and possibly in lead. Other papers during the morning were contributed by Dr. R. Furth (London) and Dr. L. Mackinnon (Leeds).

The session during the afternoon was opened by Dr. S. Raimes (London), who gave a careful account of the description of transport phenomena in metals using the techniques of plasma theory. This was followed by a paper in which Dr. R. J. Elliott (Oxford) directed attention to an alternative line of investigation which might provide useful information about electron-phonon interactions. He suggested that

further electron-spin resonance experiments should be undertaken with metals in order to measure the electron spin-lattice relaxation time in more detail. The final paper was given by Dr. D. M. S. Bagguley (Oxford). He described some experiments using cyclotron resonance techniques to investigate the different collision processes for carriers in germanium.

All the delegates who attended the conference were grateful to the organizers for their efforts in providing an opportunity for listening to the formal papers and for informal discussions between colleagues. Such informal discussions are themselves a sufficient and complete justification for a conference of this nature.

D. M. S. BAGGULEY

BRITISH GELATINE AND GLUE RESEARCH ASSOCIATION

THE eighteenth meeting of the Research Panel of the British Gelatine and Glue Research Association was held on November 12 with Mr. J. N. Blake (Richard Hodgson and Sons, Ltd.) in the chair. Mr. Blake introduced Dr. D. A. Sutton, who had recently succeeded Mr. A. G. Ward as director of research.

Dr. J. E. Eastoe (Department of Dental Science, Royal College of Surgeons of England) presented the first paper entitled "Bone—The Structure of a Biological Microcosm". After considering bone as one of the several mineralized biological tissues, note was taken of its occurrence in the vertebrate sub-phylum of the chordate phylum. Dr. Eastoe discussed bone at descending orders of size beginning with the skeleton, its function and the integration of its component parts, and continuing through the cellular level to electron microscope studies of bone mineral and collagen and thence on to the organization at the molecular level of these two main components. He concluded with a discussion of the hypotheses advanced to explain mineralization. Particular reference was made to the work of Glimcher, Hodge and Schmitt showing that mineralization is induced from metastable solutions containing calcium and phosphate only when the collagen fibrils present have the 640-Å. spacing, and that deposition can be prevented by traces of polysaccharide components. Chemical differences exist between bone and skin in that the former contains less polysaccharide and that its lysine and hydroxylysine have ϵ -amino groups more reactive towards fluorodinitrobenzene according to recent work by Solomons and Irving.

In the second paper, "Shrinkage of Cherries in Jelly", Miss M. J. Anthistle (Fruit and Vegetable Canning and Quick Freezing Research Association) demonstrated that the shrinkage which has been noted on storage can be virtually eliminated by adjustment of the surrounding gelatine gel (isoelectric pH, 4.7) to about pH 4.0; below this pH shrinkage occurred and above it a slight degree of swelling. The effect was not dependent on the sugar concentration. Miss Anthistle then considered the phenomenon in terms of the Donnan membrane equilibrium theory and deduced that shrinkage should be minimal at the isoelectric pH of the gelatine; in fact, it was minimal between pH 4.0 and 4.5. The pH of minimum shrinkage is thus somewhat lower than the isoelectric pH of the gel. In the discussion, it was suggested that the slight discrepancy might be due to an effect upon the equilibrium caused by the protein and pectin inside the fruit.

A short paper was then given by Mr. A. M. Kragh (British Gelatine and Glue Research Association) entitled "The Equilibrium Moisture Content of Plasticized Gelatine Gels". Glycerine and a sugar mixture (4 sucrose : 1 glucose) were used as plasticizers and relative humidities of between 35 and 93 per cent were studied. Temperature had a negligible effect upon the equilibrium moisture contents. Unless the relative humidity was very high, the equilibrium moisture content of the mixtures did not vary greatly over a wide range (0.5 : 1.4 : 1.0) of plasticizer : gelatine ratios.

D. A. SUTTON

INTERLINGUA

THE free circulation of ideas and information is not less important for science than the circulation of the blood is for the body. This circulation is impeded by the publication of the results of scientific research in a multiplicity of languages. At least 50 per cent of the scientific literature of the world is published in languages that more than 50 per cent of the scientists of the world are unable to read. The number of published articles is growing rapidly; chemical literature, for example, has doubled itself in the past eight and a half years. There is also an increasing number of international meetings. There is thus not only the difficulty of reading published

articles but also that of participating in discussions with research workers from other countries.

According to Forrest F. Cleveland, the scientist has two requirements. First, he has to scan the current literature to obtain ideas and information with respect to new developments in his field. Secondly, he must read in detail those articles that pertain to his own investigations. These requirements are largely frustrated by the language barrier (*American Scientist*, 47, No. 3, 1959). Scientific work would be facilitated if the results of scientific research were published in a single language that every scientist would be able to read at sight. Such