

RESEARCH IN TEXTILES, COLOUR CHEMISTRY AND DYEING

THE eighty-ninth report to the Worshipful Company of Clothworkers of the City of London of the Advisory Committee on the Departments of Textile Industries and Colour Chemistry and Dyeing in the University of Leeds* covers the session 1962-63. During the session there were 400 students in the Department of Textile Industries, of whom 96 were graduates reading for higher degrees or diplomas, compared with 12.5 per cent such students for the University as a whole. Twenty-eight students were awarded Bachelor degrees and 27 gained diplomas.

In textile physics, a method was devised for determining the contribution of the relevant molecular configuration to the overall crystallinity from the dimensional change of the microfibrils measured in electron micrographs of the transverse sections of wool fibres: the results confirmed the view that an intermediate molecular phase was involved in the α - β transformation. Work in textile chemistry during the session was concerned with attempts to devise methods for the continuous curling of worsted and mohair yarn, for lustring all-wool fabrics, and for imparting permanent creases and pleats to all-wool fabrics under simpler conditions. Work was also continued on the prevention of heat discoloration of wool textiles, and the properties of the by-products of the fleece were further examined. The fundamental investigation of traveller burning was extended and a complete analysis made of the position of the traveller during flight. A novel method of cleaning wool which might eliminate the card and produce wool of much more even fibre length is being examined. An extensive programme of work to explain the mechanical

* Report to the Worshipful Company of Clothworkers of the City of London of the Advisory Committee on the Departments of Textile Industries and Colour Chemistry and Dyeing in the University of Leeds for the Session 1962-63. Pp. 54. (Leeds: The University, 1964.)

behaviour of cloths in terms of yarn properties and cloth geometry yielded some useful results. In textile technology the effect of the arc of contact in a carding machine on the efficiency of the carding process was investigated, and, in worsted spinning, attention was directed to the drawing and spinning of coloured tops. An investigation was completed in the production and properties of nylon and 'Terylene', false-twist mixture yarns. Work in textile finishing covered the chemistry and practice of textile processing with particular attention to the flame-proofing of textiles and the reactivity and properties of nylon- and wool-setting operations.

In the Department of Colour Chemistry and Dyeing, there were 42 undergraduates during the eighty-fourth session and 14 graduates working for research degrees.

In research, a preliminary study of the mechanism and formation of dioxazine dyes was completed and the reactions of 9,10-benzomeso-benzanthrone with nucleophilic reagents were examined, as well as the acetylation of 1,1-dinaphthyl and perylene.

Research continued on the measurement of the vapour pressure of disperse dye crystals, and investigations were made of the behaviour of dispersed dye particles in the dye bath, of the ring dyeing of circular filaments of nylon, 'Terylene' and 'Courtelle', and of the important technical process of rosination in the manufacture of azo pigments. Investigations of the treatment of wool in various media on its load-extension and setting characteristics were completed, as well as others on the solvent-assisted dyeing of nylon 66. An investigation into factors influencing the strength of the dye fibre bond formed by reacting halogeno triazinyl dyes and cellulose was commenced.

Lists of departmental publications during the year are appended to both departmental reports.

THE ZOOLOGICAL SOCIETY OF LONDON

THE 135th annual report of the Council of the Zoological Society of London* shows that, at the end of 1963, there were 3,526 Fellows and 1,448 Associates. Although public attendances at the Society's Zoological Gardens improved a little in the year, the 1963 figure was still some 65,000 below the average of the previous seven years. This recovery did not extend to Whipsnade, where attendances, at 616,000, were below even the 1962 level. Since the Society must rely on substantial annual surpluses, and since the bulk of income must still come from the public, the Council has commissioned a firm of consultants to report on the Society's revenue-earning activities and to suggest ways by which they can be improved.

To further its policy that zoos should, wherever possible, take positive action to ensure the survival of endangered species, the Council sent the female Arabian oryx, which has been in the collection since 1958, on loan to the Phoenix Zoo, Arizona, where a breeding herd of captive oryxes was being established. This herd consists of two adult male and three adult female oryxes, two males and one female having been captured by the expedition sent to the Aden Protectorate by the Fauna Preservation

Society and another female presented by H. E. Sheikh Jabir Abdullah Al Sabah of Kuwait. The first offspring, a male, was born at Phoenix Zoo in October.

There have been several rare births in the Gardens during the year. From the point of view of conservation, probably the most important birth was that of a second orang-utan to the breeding pair at Regent's Park, 'Toli' and 'Charlie'. This young male is being successfully reared by its mother, while its elder sister (born in 1961) continues to thrive with a chimpanzee as a companion. During 1963, the upper section of the stables in the Children's Zoo at Regent's Park was completely remodelled as a small pilot experiment for the nocturnal section of the new Small Mammal House. Here small nocturnal mammals are being kept under various lighting conditions in an attempt to find out the best way of reversing their daily rhythm. The tests have already proved successful and, when they are completed, the building will be opened as a temporary display until the completion of the new Small Mammal House. Animals housed there include bush-babies, lorises, pottos, douroucoulis, mouse lemurs and giant flying squirrels.

The report contains some outstanding photographs recording the births of various animals at Regent's Park and Whipsnade.

*Annual Report of the Zoological Society of London, 1963. Pp. 51 + 11 plates. (London: The Zoological Society of London, 1964.)