

organisms. The existing physical chemistry research laboratories at Wheeleys Road have been modernized, and are now fully equipped for radiochemical and high-vacuum work and for ultra-violet spectroscopy. At the company's Lifford Chemical Works, Birmingham, the analytical laboratories are being extended to cope with the testing of increased production, and the development laboratories have been rehoused in larger premises and now include a section for technical service work on rubber, plastics, paper, paint and printing inks. The Yorkshire laboratories at the company's Selby works—formerly devoted to the organic and biochemical research work—are now being used to extend the facilities of the development, analytical and microbiological departments. Construction work will start shortly on a new pilot plant, together with an associated laboratory and administrative offices.

### Structure and Age of the Stars

THE improvements in our knowledge of nuclear reactions and of the opacity of stellar material are leading to corresponding advances in our ideas of the structure and ages of the stars. Developments in high-speed computers are playing a major part in this work, as may be seen from two recently published papers. C. B. Haselgrove and F. Hoyle (*Mon. Not. Roy. Astro. Soc.*, 119, 112; 1959) have constructed new models for stars of population types I and II, the latter having one-twentieth of the metal abundance relative to hydrogen that is present in type I. The integrations refer to uniform stars, before substantial evolution has taken place. The results show that for stars with central temperatures less than about  $2.1 \times 10^7$  °K. the proton-proton reaction dominates the energy production; for hotter stars the carbon-nitrogen cycle is dominant. This central temperature is reached in stars of roughly twice the solar mass. Stars which are more massive than this also possess convective cores. An evolutionary run was obtained for a star of solar mass, and the age of the Sun, determined by fitting the observed luminosity, is  $5.2 \times 10^9$  years, in excellent agreement with the geophysically determined age. It also appears likely that the separation at zero age of the main sequences of the different stellar populations does not exceed 0.1 mag. In a second paper (*Mon. Not. Roy. Astro. Soc.*, 119, 124; 1959) Hoyle re-computes evolutionary sequences for stars corresponding closely to the lower portions of the globular cluster and the *M* 67 cluster giant sequences, that is, for types II and I, respectively. He concludes that both these type of stars must be aged at least  $9 \times 10^9$  years. If it is assumed that type II stars are older than type I stars, Hoyle shows that the age of the Galaxy must be at least  $10^{10}$  years, and that the cluster cepheid variables cannot be brighter than absolute visual magnitude + 0.6, a result in agreement with recent evidence from other lines of investigation.

### Great Indian Rhinoceros

THE Great Indian rhinoceros, *Rhinoceros unicornis*, is one of the mammals the names of which appear on the list of animals in danger of extermination, which is maintained by the Survival Service Commission of the International Union for the Conservation of Nature and Natural Resources. In 1958, about 800 of these rhinoceros were believed to exist, of which some 400 were known to be in India. About the same number were thought to live in Nepal, in the valley

of the River Rapti. The number of this rhinoceros in India was fairly accurately known because of the interest of the Indian Government, the attention given to the species by the Indian Board for Wild Life, and especially to the work of E. P. Gee. There were about 350 rhinoceros in sanctuaries in Assam—notably 250 in the Kaziranga Wild Life Sanctuary—and fifty in Bengal. About the number of rhinoceros in Nepal no accurate figures were known. In September 1958 a message from Katmandu came to the International Union for the Conservation of Nature stating that only about thirty-five rhinoceros remained in Nepal; the rest had been killed by poachers. The Survival Service Commission of the Union arranged for Gee to visit Nepal to investigate the distribution and status of rhinoceros in Nepal and to suggest measures for its preservation. A survey by Gee shows that the rhinoceros has not reached the levels which the message from Nepal had described, but the general picture is of declining numbers in a shrinking habitat. Gee's report has been accepted by the Survival Service Commission and given to the Union for appropriate action to preserve the Great Indian rhinoceros (*Oryx*, 5, No. 2; August 1959).

### University News :

### Manchester

DR. F. FAIRBROTHER, reader in inorganic chemistry and assistant director of the chemical laboratories in the Faculty of Science, has been granted the status of professor of inorganic chemistry.

### Oxford

THE following grants are announced: from the Nuffield Foundation for two years a sum not exceeding £8,000, for the continuation of research being carried out by H. B. Parry, at the Nuffield Institute for Medical Research, under the direction of G. S. Dawes; from the du Pont Company, U.S.A., a grant of 3,000 dollars for the year 1960-61, for the support of basic research in the field of theoretical chemistry in the Institute of Mathematics, under the direction of Prof. C. A. Coulson; and £3,000 spread over three years from B.P. Trading, Ltd., for the purpose of continuing a research fellowship in geochemistry, to be nominated by the professor of geology.

### Announcements

DR. EDGAR ZWILLING, professor of biology at Brandeis University, Waltham, Mass., has been appointed to serve a three-year term on the Embryology and Development Training Committee, which is administered by the Division of General Medical Sciences of the National Institutes of Health, U.S. Public Health Service. Dr. Zwilling will review applications for training grants in the basic sciences related to embryology and development, and will also provide technical advice to the National Advisory Health Council of the National Institutes of Health and the Surgeon General of the Public Health Service on matters pertaining to the research training problems of the nation.

ERRATUM. We regret that in the article entitled "Occurrence and Quantitative Determination of 2-Dimethylaminoethanol in Animal Tissue Extracts" in *Nature* of August 15, p. 551, the 17th line from the bottom of the right column should read "migration value . . . where 'cysteine' has . . ." instead of ". . . where 'glycine' has . . .".