

Heidelberg and Academic Freedom

THE University of Heidelberg is to celebrate this year the five hundred and fiftieth anniversary of its foundation, and it is proposed to give to the commemoration more than national significance. To this end, invitations to participate are being sent out widely, and universities and learned societies in Great Britain are being invited to send delegates. The Bishop of Durham, in a letter in *The Times* of February 4 discussing these invitations, quotes from the opening of the article on the dedication of the Philipp-Lenard-Institut at Heidelberg, which appeared in *NATURE* of January 18 (p. 93). This account, he says, demonstrates that the influence of the racial fanaticism which has swept over Germany and its universities has been specially severe in Heidelberg. In his opinion, which is held by many other intellectual leaders, "The appearance of British representatives at the Heidelberg celebration, and the presenting by them of congratulatory addresses, could not but be understood everywhere as a public and deliberate condonation of the intolerance which has emptied the German universities of many of their most eminent teachers."

Sensitising Dyes in Scientific Photography

IN his Friday evening discourse at the Royal Institution on January 31, Dr. C. E. K. Mees discussed "Sensitising Dyes and their Use in Scientific Photography". While the eye is sensitive to the visible spectrum, and the brightest colours to the eye are yellow, green and red, photographic materials are in their nature sensitive only to the blue-violet and ultra-violet regions of the spectrum, to which the eye has little or no sensitiveness. In 1873, H. Vogel discovered that the addition of dyes to photographic materials would make them sensitive for the region of the spectrum which was absorbed by the dye, and although Vogel's discovery was at first received with incredulity, it eventually proved the foundation of the change in photography which has been effected by the introduction of orthochromatic and panchromatic materials. Until the beginning of the twentieth century, only orthochromatic plates were available, but in 1904 a series of dyes were made in Germany which sensitised plates very readily for those regions of the spectrum which are bright to the eye, notably the red and yellow, and the first commercial panchromatic plates were made in England in 1906.

THESE new dyes were obtained from organic chemicals containing nitrogen and derived from coal tar, but the general structure of the dyes remained unknown until 1920, when Dr. W. H. Mills and his co-workers at Cambridge showed that they were characterised by a chain of carbon atoms which joined two nuclei each containing a nitrogen atom. This clarification of the structure of the cyanine dyes, as they are called, made it possible to prepare a great variety of these dyes, many of which were superior for photographic use to those which had previously been available. By the use of the new dyes 'super-

sensitive' panchromatic materials were made, and these effected a great advance in the art of photography. In the motion-picture studios the new panchromatic film enabled tungsten lighting with its advantages of convenience and silence to be substituted for arc lamps, and this greatly facilitated the sound recording made necessary by the development of the 'talkies'. Fine-grain panchromatic film has made possible the use of miniature cameras indoors, and by the use of cyanine dyes with especially long chains of carbon atoms, photography by infra-red light has been greatly facilitated. By the use of new dyes of the cyanine series a great variety of plates has been made available for the spectroscopist and the astronomer, who have made discoveries of considerable importance as a result, and it is now easy for the scientific worker to obtain plates sensitive to any spectral region from the ultra-violet to the far infra-red.

Economic Entomology

AT the annual meeting of the Royal Entomological Society of London, held on January 15, the retiring president, Dr. S. A. Neave, discussed the relations between mankind and insects. The growth of economic entomology, as he pointed out, is a relatively modern development. The first official Government entomologist to be appointed appears to have been in the United States in 1853. Between 1884 and 1895 a number of such appointments were established in various parts of the British Empire. In Great Britain, John Curtis, Miss Ormerod and others were early pioneers in economic entomology, but no permanent post of Government entomologist existed until 1912. From that time onwards the need for skilled entomological advice became increasingly recognised throughout the civilised world, and, at the present day, there are between three and four hundred trained entomologists in the British Empire alone. This increasing attention given to insects in relation to man has, as Dr. Neave pointed out, led to the discovery of hosts of important new species and to a demand for the correct identification of thousands of other species. This, in itself, has led to an ever-increasing pressure on the resources of systematists until, at the present time, they are unable to cope with the material awaiting study. This need for more systematists will have to be met if Government departments are to derive the full benefit from moneys voted towards coping with economic problems in entomology.

Destructive Hailstorm in the Transvaal

SIX years ago, in a weekly column devoted to remarkable "Historic Natural Events", many records were given in *NATURE* of great hailstorms and damage done by them. There is an authentic record, for example, of a hailstone 17 inches in circumference and weighing 1½ lb. having fallen in Nebraska in July 1928 during a storm when the hailstones were "as large as grapefruit". A hailstorm of this character is reported by *The Times* correspondent at Johannesburg to have occurred on February 1 in a