

abundant references to the photographs and casts illustrating the Northern Schools, as well as to the actual exhibits from those of the South, special attention necessarily being directed to the Gupta period and Amaravarti.

No stronger plea than that afforded by these guides could be put forward for the adoption of a vigorous forward policy on the educational side throughout the museums of India. As the report of the Museums Commission showed, these institutions are already places of popular resort; but it depends upon the arrangement and administration of the museum itself whether they are mere repositories of 'curios', or really serve to bring home to the people the continuity in spiritual meaning underlying objects and buildings and structures familiar to them in their daily life. In the East, the function of the archaeological museum is concerned with things of which the spirit, and sometimes, if not always, the form, is still alive.

### Instructional Films in India

MR. C. F. STRICKLAND has recently published a paper on "Instructional Films in India" (*J. Roy. Soc. Arts*). They supply a ready means of education in a country which "it is not possible to make literate in the next ten years", though during that period instruction concerning good government must be acquired. Adults have to be educated and already Bengal is credited with 1,000 cinemas and 500 touring companies. But most of the films shown are non-Indian and 45 per cent of them are American. They are predominantly unsuited to Indian ideas and modes of thought. Indians do not think continually "in terms of sex emotion or crime". Some educational films are now made in India and several are on loan, but these are meant chiefly for the juvenile population. Mr. Strickland explained the requirements and limitations of the Indian adult, one of which is a pace much less rapid than that to which we are accustomed. This speed with perpetual excitement is, we note, quite unnatural, lacking the tension and relaxation which prevail in life and in the best stories of action, such as the "Three Musketeers". It is, in fact, the consequent strain on the mind which makes these pictures so easily forgotten.

### Totaquina

In a recent paper (*Asiatic Res.*, 35, 777; 1939), M. Ciuca states that in its search for an anti-malarial preparation cheaper than quinine but equally efficacious, the Malaria Commission of the League of Nations instituted research into the efficacy, compared with that of quinine, of a certain number of secondary alkaloid mixtures, such as kinetum, chineto, cinchona febrifuge, etc., used in the treatment of malaria in various countries. Research carried out in more than 4,000 patients in malarious countries proved that the efficacy of preparations containing 60-80 per cent crystallizable alkaloids including 15 per cent quinine was equal to that of quinine alone. The Commission has given the name of 'Totaquina' to a new preparation which is a mixture of cinchona bark alkaloids containing at least 75 per

cent crystallizable alkaloids and not less than 15 per cent quinine. The advantage of the new preparation is a distinctly lower price, which is mainly due to the method of extraction, while its efficacy is equal to or only slightly less than that of quinine.

### Seeing at Night

A PAPER by R. G. Hopkinson, of the Research Laboratories, General Electric Co., Ltd., published in the *Electrical Review* of March 1, on "Seeing at Night", shows that valuable progress has been made on this important subject during the last few years, especially in connexion with black-out conditions. Under weak illumination, the response of the eye is quite different from that under normal conditions. So far as light is gathered by the lens of the eye and is brought to a focus upon the retina, it functions like a camera, the retina acting like a photographic plate in recording the scene for the brain to interpret. The retina is provided, however, with two separate kinds of receptor nerve cells, the 'cones', which usually respond to bright scenes, and the 'rods', which respond to dark scenes. In daylight the cones only function. With bright artificial light both rods and cones are working, the rods recording the shadows and the cones recording the highlights for the brain. Under black-out conditions the rods alone are functioning.

Black-out vision is much inferior to day vision for the following reasons. (1) The rods do not record colours, hence black-out vision is devoid of colour sensation; all colours appear as varying grades of black and grey. (2) There are fewer rods per unit area of the retina than there are cones. The effect is analogous to that of a newspaper reproduction of a photograph, which is made up of a number of dots and is therefore less clear than the original. This handicap is the more serious since it is just that region of the retina which normally receives the clearest image, the fovea centralis, where the rods are fewest. Hence, as many must have noticed at low illuminations, vision is often better around the periphery of the eye.

### New Commercial Fruits in the United States

O. ATKINS writes in the *American Fruit Grower* (Dec. 1939) on the utility of the wild dryland blueberry (*Vaccinium vacillans* Kalm) in relation to soil conservation. Experiments have shown that it has unusual erosion-resistant qualities on account of its underground shoots, which send out a mass of fine roots and bind the soil together over a large area. In addition to this useful property, the blue-black fruits promise to form a successful commercial crop, and as the plant will grow and fruit in partial shade or full sunlight it is well suited to 'hill-culture'. A systematic breeding programme is being undertaken by the U.S. Department of Agriculture and Soil Conservation Service.

The papaya (*Carica papaya* L.), according to S. J. Lynch, writing in the same journal, is now being grown commercially in South Florida. The texture of the flesh is similar to that of a

cantaloupe, yellow to reddish-orange in colour, with a sweet musky flavour. The fruits, which vary in size from a few ounces to 25 lb. in weight, contain 5-6 per cent of sugar, no starch, and appreciable amounts of vitamins A, B and C. The proteolytic enzyme papain, which also occurs in the fruit, is used in many commercial products as an aid to digestion. Numerous food and drink products are being made from the fruit pulp. The plant will bear for three or four years, but is treated commercially as an annual, since the finest fruit is obtained in the first year. Both monoecious and dioecious plants occur, which makes standardization difficult; but breeding work is being carried out to establish uniform strains.

#### Poultry Rations in War-time

COMMERCIAL poultry-rearing has reached a high state of efficiency, and part of that efficiency is expressed in a standardized ration, in which only food ingredients are used which have been proved to be best suited for their purpose. Under war conditions the accustomed standardized ration must be given up, since the amount and nature of feeding stuffs available for livestock becomes restricted, partly because of a reduction in imported supplies and partly because of the wider use of home-grown cereals for human consumption. Poultry-keepers are urged to exercise the greatest economy in the use of such imported materials as maize, and in order that the accustomed ration may be replaced by satisfactory substitutes the Ministry of Agriculture and Fisheries has issued, as one of its "Growmore" Leaflets (No. 14), a summary account of materials which may be used in rearing, growing or breeding rations. The list includes thirty-one different food materials, and the feeding value and method of using each stuff is stated briefly. Single copies of the leaflet—"Poultry Rations in War Time"—may be obtained free of charge and post paid on application to the Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, London, S.W.1.

#### Birds of the Fenland

CHANGES in the kind and distribution of the animals of the countryside which have been brought about by the progress of civilization are greater than is generally supposed, although often they are difficult to trace in detail. A short account of such changes as they have affected birds in the Fenland appears in the winter issue of *Bird Notes and News* (p. 198), the journal of the Royal Society for the Protection of Birds. In it Francis E. R. Peach, having quoted some early references to the bird-life, compares the earlier fauna with that of the present day, and shows that the general trend in the Fen area has been in the direction of a decline in ducks, geese, waders and birds of prey as drainage proceeded, and an increase in small birds such as linnets, yellow buntings and skylarks which now occupy the reclaimed marsh lands. Surely it is an omission that in dealing with the bird-history of this region the author does not refer to the invaluable "Early Annals of Ornithology", by the late J. H. Gurney, himself a Norfolk man.

#### Dutch Biology

A. VAN LEEUWENHOEK is known to every biologist as the name of a most eminent Dutch man of science, but we doubt whether many know that it is also the name of a worthy journal of Dutch microbiology, in spite of the fact that five volumes of it have already been published. This is in large measure due to its having appeared in the Dutch language, which has prevented its being read by more than a few English workers. We are glad to welcome its appearance in a new form. The editors and the Board of the Netherlands Society of Microbiology who are responsible for it have appreciated this difficulty, and from volume 6, No. 1, January 1940, it appears under the title *Antonie van Leeuwenhoek, Journal of Microbiology and Serology*, with English, French and German as the official languages. Thus the present number contains seven papers, five in English, one in French and one in German. Its pages are thrown open to workers of any nationality, and the editors hope that, in spite of the present inauspicious conditions, it will serve a wider public.

#### Demography of England and Wales

IN the third quarter of 1939, 161,201 live births were registered, or 3,119 more than the number recorded in the corresponding quarter of 1938. Of the total 6,458 were illegitimate, or 13 less than in the third quarter of 1938. The deaths numbered 103,170, and were 17,263 less than in the preceding quarter, but 568 more than in the third quarter of 1938. The mortality of infants under one year of age was equal to 39 per thousand registered live births. This rate is 8 per thousand below the average of the ten preceding third quarters and is the lowest quarterly rate ever recorded. The number of persons married in the third quarter of 1939 was 304,716, an increase of 72,084 on the number in the corresponding quarter of 1938. This number corresponds to an annual rate of 29.3 per thousand of the estimated mid-year population for 1938, and is the highest rate yet recorded.

#### X-Ray Photography of the Renal System

In order that X-ray photographs of the renal pelvis and ureters may be obtained, it is necessary to employ a substance which, after injection into the veins, is excreted by the kidneys and is opaque to the rays, so that a shadow picture of the excretory apparatus of the kidneys may be obtained; further, such a substance must have no harmful effect. A new preparation has been introduced by Glaxo Laboratories, Ltd., under the name of "Pyelectan", which it is stated possesses the necessary properties in marked degree. Chemically, it is the sodium salt of a complex iodine-containing dicarboxylic acid, the iodine content being 51.5 per cent. Pyelectan is claimed to have a low toxicity and to be generally well tolerated, rapidly excreted by the kidneys and yielding a dense and well-defined shadow in the renal pelvis and ureter.