

so far issued, one contains general information regarding the work of the Association and others deal with the distribution of fresh food, human wastes, their collection and disposal, and a summary of existing methods of disposal. The first of these outlines a system of fresh-food production and distribution, assuming a network of 'control farms' and 'fresh food centres'. Those on human wastes summarize suggestions as to how such wastes can be used to maintain soil fertility, and give a technical analysis of present systems of disposal. The Association is also engaged on the preparation of a series of maps, designed to present existing statistical and other information on various problems in visual form. It is also studying the problems of a service to promote positive health and the lay-out of a 'health centre', standards governing housing density, pre-fabrication possibilities in housing construction, and the marketing of goods in relation to planning.

### Scientific Data in Glass Technology

IN his presidential address to the Society of Glass Technology, delivered on April 14, Dr. S. English discussed "The Commercial Use of Scientific Data". After a brief review of the rapid development of the science of glass technology during the past twenty-five years, and the importance of the results obtained in their application to manufacturing processes, the problems of illuminating glassware of the diffusing type were considered in detail. Three essential requirements of such glassware are that it should be (1) practicable from the manufacturing point of view, (2) technically correct from the illuminating point of view, (3) artistically correct. The problem of glare was emphasized in relation to the adaptability of the human eye to an enormous range of illumination intensities from 2,000 to 4,000 ft.-candles on a bright summer day to 0.002-ft. candles for A.R.P. lighting. Diffusing glass envelopes reduce the glare and increase the detail comprehended by the eye by removing the intensely bright source from direct vision.

The properties of completely diffusing opal glasses in conjunction with metal filament lamps were then described. In general, the percentage transmission of opal glasses is always higher for directed light than for diffused light (2.5 per cent increase). The proportion absorbed is always less for directed than for diffused light, by approximately 1-5 per cent, and the proportion reflected is usually less for directed than for diffused light. Examples were given of the use of physical data for the pre-determination of the performance of a lighting fitting made in flat opal glass plate, illuminated on one side by a single electric filament lamp, with and without a second plate behind the lamp to serve as reflector, and of a complete opal sphere enclosing the lamp. The efficiency of an opal sphere as a lighting unit depends on the glass, which must be a perfect sphere of uniform thickness, with no neck opening, and giving perfect diffusion of transmitted and reflected light; and on the lamp, which must give a uniform light distribution. The view was expressed that the British illuminating glassware industry should endeavour to provide the whole of the post-war requirements of Great Britain in this field.

### Jig Borer Microscope

THE recent introduction of the "Watts" jig borer microscope provides a valuable optical accessory for use with high-precision machine tools such as jig

borers, and tool-room milling machines. Its purpose is to enable the axis of the machine to be accurately located in relation to a datum mark on the work-piece. In construction, it consists of a high-power microscope the optical path of which is bent so that the user can conveniently inspect the work from one side when the instrument is set up in the spindle of the machine. The microscope is mounted on a taper shank—No. 4 morse taper is used in the standard model but any of the usual tapers can be supplied—and the shank is inserted in the spindle. In this position the objective axis of the microscope coincides with that of the boring spindle, which the operator is thus enabled to bring within an accuracy of 0.00005 in. to the desired position.

The optical system is so arranged that the intersecting points of the graticule lines when viewed through the eye-piece, which is of the screw-focusing type, are superimposed on the point where the projected axis of the spindle falls on the work-piece. The microscope, which has a power of  $\times 45$ , can therefore be used (a) for setting the spindle over a small punch mark, (b) for setting the spindle over a line marked on the work-piece, or (c) with the aid of a reference square, for setting the spindle in the plane of any desired surface of the work-piece. The graticule or cross-lines seen in the eye-piece of the microscope are centred relative to the taper shank, but in order to compensate for a small degree of spindle run-out, should this be experienced, provision is made for the adjustment of the diaphragm to enable the cross-lines to be re-set. As the spindle is free to rotate, the instrument has the merit of being self-checking by turning it through an angle of  $180^\circ$ , and a rotatable reflector is arranged so that the light from any convenient lamp can be brought to bear on the job. The instrument is thus well designed to simplify what is a fundamentally difficult setting in precision machine work. The makers are Messrs. E. R. Watts and Son, Ltd., 123 Camberwell Road, London, S.E.5, from whom further details can be obtained.

### Phenology of 1941

REPEATING its admirable promptness of last year, the Royal Meteorological Society has issued its fifty-first annual phenological report, for the year 1941, under the editorship of Major H. C. Gunther, although it is somewhat abridged from its pre-war size. It is interesting because of the late spring and the amends of a belated summer, with a remarkably green autumn countryside and an unusually late defoliation of trees, although autumn colours were not much in evidence. The migrant birds arrived punctually in the south but late in the north; there were average numbers of the immigrant painted lady and red admiral butterflies and of the silver Y moth, while clouded yellow butterflies were reported from many parts of the country, including the north. Observations on the magpie moth and the meadow brown butterfly in relation to the rise in temperature for the June-July warm spell which followed the cold late spring illustrated how quickly certain insects may respond to the influence of a favourable spell following adverse conditions. Observations on the dog-rose furnished clear-cut evidence of the preponderating importance of the weather of the moment as compared with any latent tendencies due to a previous season, for in 1941 the flowering dates for the south-east were not less than 16 days later than those for 1940, when the south-east dates were

slightly earlier than the dates for the north-west. But in 1941 the north-west dates of this flower were slightly earlier than the south-east dates. Despite the War, reports were sent in from 277 phenological observers in the scheme—only twelve less than the previous year.

### Tuberculosis in Ecuador

IN a recent article (*Bol. Of. San. Panamericana*, 21, 128; 1942), Dr. Jorge Higgins, director of the Anti-tuberculous Dispensary of Guayaquil, Ecuador, states that of Ecuador's three geographical regions, the coast, which has an average temperature of 81° F., is the most severely affected by tuberculosis. The port of Guayaquil, which has a population of 200,000, has the highest tuberculosis mortality in the world. The anti-tuberculosis campaign began in 1934, when the first dispensary in Guayaquil was established. A similar dispensary was afterwards opened in Quito, and more are being planned for the rest of Ecuador. During 1939, the Guayaquil dispensary provided 2,609 medical consultations, 2,406 fluoroscopic examinations, 683 pleural insufflations and 1,431 laboratory examinations; 1,169 patients were admitted and 1,831 home visits were made. A large sanatorium has been started in Guayaquil supported by a new organization called the Liga Antituberculosa Ecuatoria. Poverty, which is one of the most important factors in the causation of tuberculosis, is being partially offset by the introduction in several cities of popular restaurants where good food is supplied at popular prices. Milk stations are also furnishing milk free to the infants of poor families. Several hundred dwellings have been destroyed and their place taken by many hygienic houses for workers.

### Historical Medicine and Science

SCHUMAN'S, of 30 East 70th Street, New York, have sent us their latest catalogue entitled "Medical Miscellany, List 'D'," containing an annotated list of rare books and first editions of works on historical medicine and science. In a special section on war medicine are listed the "Opera omnia medica et chirurgica" of Botallo (1660), James Handley's "Colloquia Chirurgica" (1705), Thomas Trotter's "Observations on the Scurvy" (1792), George Guthrie's treatise on "Gun-shot wounds" (1815), and William Braisted's "Report on the Japanese and Russian Medical Organization in the Russo-Japanese War" (1906) among many others. Mention may also be made of Pico della Mirandola's "Opera Omnia" (1506), the third Latin translation of Rhazes' works (1510), Thomas Willis's "De anima brutorum" (1672), Astruc's "De morbis venereis" (1740), David Brewster's "Treatise on the Kaleidoscope" (1819), Johannes Mueller's "Handbuch der Physiologie des Menschen" (1835-40), Cockayne's "Leechdoms, Wortconning and Starcraft of Early England" (1864-66), Allbutt's work on "The Use of the Ophthalmoscope" (1817), and Haeser's "Lehrbuch der Geschichte der Medicin" (1875-82).

### Admiral Dumont d'Urville (1790-1842)

By a terrible railway accident at Versailles on May 8, 1842, France lost one of her most eminent scientific explorers, Admiral Jules-Sébastien-César Dumont d'Urville, whose voyages not only added much to geographical knowledge but also enriched

immensely the natural history collections of the Paris museums. Born in Normandy on May 23, 1790, d'Urville entered the Navy at the age of eighteen, and two years later in the *Chevette* visited the Black Sea. In the Isle of Milo his attention was turned to the famous statue of Venus, which was afterwards bought by the French Ambassador to Constantinople and now stands in the Louvre. In 1822 d'Urville was appointed to the *Coquille*, commanded by Duperrey, and in the course of a voyage in Oceania he made a collection of three thousand plants and another of twelve hundred insects. Returning home in 1825, he was appointed to the command of the ship, which was then renamed the *Astrolabe*. Leaving Toulon on April 25, 1826, the ship visited Australia, New Zealand, New Caledonia, New Guinea, the Carolines and other islands in the Pacific. The ship finally reached France again on March 25, 1829. D'Urville's last voyage, made during 1837-40 in the *Astrolabe*, accompanied this time by the *Zélée*, took him to the Antarctic. It was while he was engaged in writing the account of this voyage that he met his death. The train he was in caught fire, and the carriage doors being locked, some fifty-two persons, including d'Urville's wife and son, were burnt to death.

### Photography in Science, Medicine and Industry

THE Association of Scientific Workers is organizing an exhibition which, it is hoped, will be held in November at the premises of the Royal Photographic Society. The exhibition is to illustrate the applications of photography to science, medicine and industry with the view of making such information more generally available and better known to the public. The Photographic Committee of the Association, anxious to obtain examples of such work from as wide a variety of sources as possible, appeals to those who may be able to provide exhibits to write to the Honorary Secretary, Photographic Exhibition Committee, Association of Scientific Workers, 73 High Holborn, London, W.C.1, for further details.

### Announcements

DR. HELEN BANCROFT (Mrs. Simmons), known for her work, especially at the Imperial Forestry Institute, on the anatomy of recent and fossil plants, floral anatomy and systematic botany, is interned, with her husband, at Vittel. She would be very glad to receive letters from her scientific friends during her isolation from scientific life. Her address is: Mrs. Helen Holme Simmons, Frontstalag 194, No. 111 Grand Hôtel, Vittel (Vosges), France.

THE Association of Scientific Workers has formed a committee to help in solving the special problems with which foreign men of science in Great Britain are confronted in assisting in the war effort. Foreign scientific workers interested in the work of this committee should write to the Secretary, Foreign Scientists Committee, Association of Scientific Workers, Hanover House, 73 High Holborn, W.C.1.

ERRATUM: In the communication from Dr. J. J. Monteverde which appeared in NATURE of April 25, p. 472, the antigenic formula of *Salmonella bonariensis*, through an oversight, lacks the symbol for phase 1 of the flagellar antigen. The complete formula is VI<sub>1</sub>.VIII;  $i \leftrightarrow e, n$ . . . . (phase 2 is still under examination).