

patents are looked at and taken up. It is apparent to everyone, he said, that few inventions of the present day are really meritorious; he, therefore, regards the theory of renewal fees as a very excellent means for getting rid of patents that are not valuable. Such patents only put a restraint on invention, since improvements are choked so long as a master-patent remains in force. Lord Moulton expressed his approval of the American file-wrapper system. He pointed out that a patent specification must be drawn up in the utmost good faith in order that the public may have the full advantage of it when the patent in due course lapses; such is not always the case at present, since where the real inventor is a foreign resident abroad complete disclosure of the invention rarely takes place. The 1919 Bill will, in his opinion, constitute a new charter for the inventor. The public is determined, he said, that patents should help the trade of the country, and not strangle it as they have done during the past thirty or forty years.

THE LISTER INSTITUTE OF PREVENTIVE MEDICINE.

THE twenty-fifth annual report of the governing body of the Lister Institute recently issued gives a useful summary of the activities of the Institute during 1918.

Miss Muriel Robertson has continued her researches upon the anaerobic bacteria which infect wounds, with particular reference to the *vibrio septique*, the organism of malignant oedema. The reactions of this organism have been worked out, a toxin has been prepared from it, and with the toxin an antitoxic serum has been prepared and the serum issued to the Army.

Much work has been carried out for the War Office Committee for the Study of Tetanus, presided over by the chairman of the governing body of the institute, Sir David Bruce. Sir David Bruce has continued his analysis of tetanus cases occurring in home military hospitals. During 1918 292 cases of tetanus occurred among 380,000 wounded men, an incidence of 8 cases per 10,000 wounded. During the first three months of the war the incidence was 74 cases per 10,000 wounded. This drop has been chiefly due to the prophylactic use of anti-tetanic serum. The rate of mortality has similarly fallen—from 58 per cent. to 25 per cent.

Mr. Bacot, of the entomological department, has carried out numerous experimental tests of processes and methods aiming at ridding the troops of lice as a result of which a method for the destruction of lice by a moderate degree of dry heat has been devised and has been practically applied in the field on a large scale. Large numbers of lice have also been reared for use in other investigations concerned with the transmission of disease by these pests, particularly typhus fever and trench fever.

A number of researches concerned with food problems have also been carried out at the institute. Dr. Harden and Dr. Zilva, in conjunction with Dr. Still, have prepared a potent extract from lemon-juice for use in cases of infantile scurvy.

An investigation on the effects of cold storage on the fat-soluble accessory factor of butter is in progress.

An experimental investigation on scurvy, commenced in the autumn of 1916 by Dr. H. Chick, has already yielded valuable results. Thus it has been found that West Indian lime-juice is much inferior to lemon-juice in the prevention of scurvy. Yet in the British Navy and mercantile marine and in Arctic exploration last century lime-juice was vaunted as a preventive of scurvy. From an historical inquiry con-

ducted by Mrs. Henderson Smith the important and interesting fact emerges that the "lime"-juice which was employed in these circumstances was actually made from lemons!

When during 1917 and 1918 there was a scarcity of oranges and lemons, experiments were instituted in order to ascertain if a cheap substitute existed containing the anti-scorbutic properties of these fruits, and swede-juice was ascertained to be most effective and not much inferior to orange-juice.

This brief summary surveys only a portion of the activities of the institute, but suffices to indicate the valuable work which has been carried out. The governing body proposes that the institute shall in the future be termed the Lister Institute for Medical Research, and suggests that a research hospital in connection with the institute would add greatly to its usefulness. Steps are being taken to give effect to these proposals.

COLLOIDS AND CHEMICAL INDUSTRY.¹

ANYONE familiar, even in the least degree, with the general nature of chemical industry, and the applications of chemical science to other sciences, cannot but be impressed with the importance which colloid chemistry has attained within recent years in these two directions. In order that the significance of this branch of chemistry, hitherto very largely neglected, particularly in its scientific aspect, may be more fully appreciated and recognised, a committee of the British Association was formed in 1917 to consider the problem.

Last year (NATURE, March 28, 1918) attention was directed to the publication of the first report of this committee. The object which the committee has in view is to prepare in the form of sectional reports a summary of information respecting the present position of colloid chemistry and its various applications to other sciences, and especially to chemical industry. Each section is written by an authority on the subject treated. The first report dealt with the following technical subjects:—Tanning, dyeing, fermentation industries, rubber, starch, gums, albumin, gelatin, and gluten, cements, nitrocellulose explosives, and celluloid.

The committee has now issued its second report, which appears under the *aegis* of the Department of Scientific and Industrial Research. It may be obtained from H.M. Stationery Office or through any bookseller. The general arrangement adopted in the first report is adhered to in the present one. This consists of (1) classification according to the scientific colloid subject, and (2) classification according to the industrial process and general application of colloid science to other sciences. Under the first head the subjects treated are:—(i) Peptisation and precipitation (W. D. Bancroft); (ii) emulsions (E. Hatschek); (iii) the Liesegang phenomenon (E. Hatschek); and (iv) electrical endosmose (T. R. Briggs). Under the second head are:—(i) Technical applications of electrical endosmose (T. R. Briggs); (ii) colloid chemistry in the textile industries (W. Harrison); (iii) colloids in agriculture (E. J. Russell); (iv) sewage purification (E. Ardern); (v) dairy chemistry (W. Clayton); (vi) colloid chemistry in physiology (W. M. Bayliss); and (vii) administration of colloids in disease (A. B. Searle).

It is only right to point out that the compilation of these sections represents a gratuitous contribution on the part of the compilers for the general benefit of

¹ Second Report of the British Association Committee on Colloid Chemistry and its General and Industrial Applications (1918). (Published for the Department of Scientific and Industrial Research by H.M. Stationery Office, 1919.) Price 1s. 6d. net.

all who may be engaged in pure or applied science or in industrial operations in which colloids play a part.

It is obvious, from the mere enumeration of the subject-headings, that a very valuable amount of material has been collected which, it is hoped, will serve the purpose of emphasising the fundamental importance of colloid chemistry for operations and processes which, at first sight, might appear to be wholly distinct.

A number of sections remain to be dealt with, and it is hoped that these will be included in the third report which is now in preparation.

W. C. McC. LEWIS.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THE papers communicated to the British Pharmaceutical Conference at the annual meeting on July 22-23 attained an exceptionally high standard of pharmaceutical and scientific importance. Summaries of a few papers are subjoined.

K. Samaan, in "An Experimental Study of Strophanthus, Kombé, Seeds," clears up a former point of controversy by showing that the fat extracted from properly dried seeds by petroleum ether is devoid of physiological activity. Comparisons of the determination of strophanthin, physiologically and by various quantitative methods, showed Barclay's, Fromme's (1910), and Lampart and Mueller's processes all to give satisfactory results. For the preparation of strophanthus tincture 65 per cent. of alcohol is recommended.

In a general account of "Recent Advances in Vaccine Therapy," H. E. Annett points out that one of the greatest factors militating against success in vaccine treatment is the difficulty of ensuring that sufficient antigen is introduced into the blood-stream to overcome the effects of the infecting agents. Attention is directed to the importance of David Thompson's method (*Lancet*, June 28, 1919) for removing the toxins from vaccines without damaging the "antigen," so that quantities of such vaccines, ten to one hundred times greater than were possible before, may with safety be employed. The significance of this is illustrated by Dr. Wynn's striking discovery that, by employing what previously would have been regarded as enormous doses of suitable vaccines, cases of acute pneumonia, acute influenza, and acute influenzal bronchiopneumonia can successfully be treated. The doses employed contained, for an adult, 30-50 millions of *B. influenzae* and 50-100 millions each of *Diplococcus pneumoniae* and *Streptococcus*. By prompt treatment on these lines an attack of influenza can definitely be aborted.

E. Berry contributed an important paper on "A Standardisation of Digitalis Preparations." The disadvantages of the physiological method of standardisation by determination of the minimum lethal dose are that a vivisection licence is necessary, and that a large number of frogs are required for each sample; further, the M.L.D. method records toxicity only. The author puts forward a colorimetric process which is a development of that proposed by Martindale. Alcohol, saponin, and digitoxin are first removed from the tincture to be tested, after which the residue is treated with Frohde's reagent, and the significance of the colour produced read off from a colour-chart. The result records the equivalent M.L.D. values for the water-soluble glucosides only, and is termed the "therapeutic value" of the tincture, (A). A second estimation carried out similarly, but in presence of 70 per cent. alcohol, and without removing digitoxin,

etc., gives the M.L.D. equivalent of the total glucosides, (B). The "toxic value" is given by (B-A), and the comparative toxicity by the expression B-A/A. Comparison of these values with those afforded by a standard tincture gives a trustworthy evaluation of the preparation.

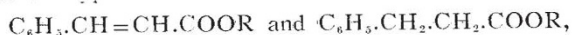
A. J. Jones, in "Purified Ether and the Variations of Commercial Samples," records the examination of nine samples prepared by different manufacturers. He directs attention to certain differences which exist between the "purified ether" of the British Pharmacopœia and "anæsthetic ether," and suggests that both types should receive official recognition, and a distinction drawn as to the special adaptations of the particular ether. This seems called for, as Dr. Cotton, of the McGill University, has recently put forward the view that absolutely pure ether is not anæsthetic in the full sense of the term; that it is narcotic, but not analgesic, the analgesic properties of ethers being due to traces of impurities—ethylene being suggested.

In a paper dealing with the couch-grass of commerce, "*Triticum repens*: A Commercial Rarity," Dr. James Small shows that the majority of a number of commercial samples examined consisted of *Cynodon dactylon*, or dog-grass, and not of the true couch-grass, *Triticum repens*.

T. E. Wallis, in "The Use of Lycopodium in Quantitative Microscopy," directs attention to the great value of this substance, which he shows to contain 94,000 spores per milligram, for determining the quantities of materials present in microscopic preparations.

In "Terebene and its Pharmacopœia Standards" B. F. Howard demonstrates the manufacturer's difficulty in producing a product which complies with the British Pharmacopœia requirement of optical inactivity and specific gravity, owing to the great alteration in recent years in the character of American turpentine. He suggests that main reliance should be placed in a distillation standard.

Miss L. K. Pearson describes "A Comparative Study of the Pungency of Synthetic Aromatic Ketones related to Zingerone." The substances considered are of the type



where one or more hydrogens of the benzene nucleus are substituted by hydroxyl or methoxyl groups, and where R represents a methyl, ethyl, or phenyl radicle. The following are among the generalisations made:—(a) The saturated ketones are less pungent than the corresponding unsaturated ones; (b) an increase in weight of the side chain materially increases the pungency of the compound; (c) the replacement of the hydrogen of the phenolic hydroxyl group by an acyl radicle has very little effect; and (d) the replacement of the *meta*hydrogen of the benzene nucleus in *p*-hydroxyphenyl ethyl ketone by a methoxy-group brings about a decided increase in pungency, as does also the replacement by methyl of the hydroxylic hydrogen in the *meta*hydroxy-group of 3:4-dihydroxystyryl methyl ketone. The most pungent of all substances examined was *o*-hydroxystyryl methyl ketone.

In "Notes on the Examination of Eosins and Erythrosins," T. T. Cocking, J. D. Kettle, and E. J. Chappel give a method of estimation, and show the inferiority of the best pre-war German samples to those now being produced in England.

S. B. Tallantyre directed attention to the general applicability of the formaldehyde process for estimating bismuth, by which the preparation, after a preliminary decomposition with hydrochloric acid, is reduced by formaldehyde and sodium hydroxide to metallic bismuth.