

(4) A change in curriculum and in degree requirements. Let me read some remarks on American colleges which I wrote in 1904. "Again, there is, in each American institution, a considerable 'mortality' or shedding of students. Some students find their general preparation insufficient; some find the pace too great; others find their funds give out; and some are advised that they have made a bad selection. In such cases the American student accepts advice, and acts promptly. At every step a student's work is known, and the faculty—staff of professors in each department—every four months discuss fully a student's work. The middle of the third year is the critical point in a student's career. At this stage the requirements of the Institute of Technology demand a final decision as to choice of work. Fifteen men in one department were, at this point, recently advised to change their courses or to withdraw from the institute. I was informed that, as a rule, 25 per cent. of the civil engineering students drop off at the same stage. These numbers have to be added to those who have previously 'fallen by the way.' The greatest patience is extended to the students, and the best advice is offered to them; but in the interest of the individual, as of the standing of the institute and of its influence on industrial work, such shedding of students is regarded as inevitable, and is acquiesced in. It does not follow that the men are 'wasted.' As a rule they find employment of a lower character than they were aiming at; they change the directions of their careers, to their own great advantage, or they pursue a course of studies on the same lines at a secondary institution—a two-year course school."

It appears to me that such kind of advice and action is necessary in British teaching institutions, but it is hardly possible under existing conditions.

(5) Another means of bringing the college class-room and laboratory into closer connection with factory, workshop, and office would be more liberal provision of short, specialised courses suitable to the heads of firms or their successors. I am not referring to that provision of evening courses which is made in technical schools and schools of art, but to provision, whether day or evening, of advanced courses for industrial and commercial leaders or their successors in institutions which there could be no presumed loss of self-respect in attending. Such courses are provided at several colleges; they need multiplication. I know that a large number of able men obtain, at much expense, instruction through private agencies, because the best institutions do not appear to cater directly for their needs under suitable conditions.

(6) As to modern languages, three things are necessary for the majority of students:—(i) less the scholar's and more the utilitarian point of view; (ii) more concentration during the later school and college years; and (iii) speaking generally, a better class of teachers.

In conclusion, let me say that this preliminary study of a very large question has disclosed much hopefulness of the future. The obstacles which university and other highly trained men encounter in getting a footing in the industrial world are still formidable, and the breaking down of the barriers between our highest teaching institutions and commercial life forms a specially difficult task. But there is plenty of need for first-class men, and there is not much difficulty in getting the exceptionally good man placed. It is gratifying, too, to find that His Majesty's Consuls speak in the highest terms of the personal qualities of our foreign commercial travellers.

On the side of education, too, there is much hopefulness. A distinguished university writer not long ago stated that the object of university education "was not how to keep our trade, but how to keep our souls alive." Between such a representative of university education and the business man who inquires what is the money value of a degree there is little room for accommodation. But the writer did an injustice to the universities, and the facts as to the objects of university education are against him. It may be true that in the long view the keeping of our souls alive is the object of university education, but even the oldest of our universities are becoming conscious that the immediate condition of saving our souls alive is that of saving our trade.

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ROYAL SANITARY INSTITUTE.

THE twenty-fifth annual congress of the Royal Sanitary Institute, held at Brighton from September 5-10, was attended by upwards of 1200 members. To the address of the president, Sir John Cockburn, K.C.M.G., we have already referred (*NATURE*, September 8). Seeing that no fewer than sixty-three papers were printed *in extenso*, and many of them "taken as read" before discussion, it will be understood that it is impossible, within the limits of our space, to do more than glance at the general aspects of the work of the congress, endeavouring to indicate the drift of opinion on some of the more important questions which were raised. All problems relating to the health and physical well-being of the community are regarded as coming within the province of the Institute. In the Lecture to the Congress Dr. Arthur Newsholme set forth the now well-known statistics of diminishing birth-rate, and considered the arguments in favour of, and against, the present crusade against infant mortality. "Is it worth while to dilute our increase of population by 10 per cent. more of the most inferior kind?" The diminishing fertility-rate is as noticeable in the ranks of skilled artisans as it is in the ranks of the well-to-do. He concluded that it has not been proved that the inferiority of the offspring of the most fertile class, the unskilled, is due to inferiority of stock so much as to the unsatisfactory conditions into which they are born, and he strongly deprecated the attitude of that section of eugenicists whose pass-word is "Thou shalt not kill, but need'st not strive Officially to keep alive." The services of health visitors and the adoption of the Notification of Births Act are, the lecturer considered, the most hopeful agents and means whereby the death-rate of early life may be reduced.

The numerous papers and discussions we can but summarise under separate headings. *The Municipal Control of Tuberculosis*.—Compulsory notification of all cases was strongly advocated, and the removal of cases which cannot be nursed at home, without risk of spreading infection, to the empty wards of fever hospitals and small-pox hospitals; the risk of cross-infection being *nil* if suitable administrative measures be adopted. This system had its initiation in Brighton, so far as the use of hospitals is concerned, and its value has been thoroughly proved. Patients receive the educational treatment which gives them a practical understanding of the lives which, for the sake of other people, as well as for their own, they must henceforth lead. *Preventive Medicine in School Life*.—Much consideration was devoted to the work of the school medical officer, the administration of the Education Act of 1908 being, as everyone acknowledged, in a tentative and, in many respects, a very unsatisfactory phase. More financial support is needed. Inspection without school clinics is in many districts in which there is difficulty in obtaining treatment of very little use. The question of the periodical disinfection of school premises led to warnings regarding the danger of "sprinkling a little carbolic acid, and leaving the rest to Providence." There are, indeed, few subjects in which sanitary authorities themselves are more in need of education than in the use of disinfectants. Faulty drains are not reconstructed, nor are their dangers lessened by an antiseptic odour which allays the anxiety of the public. Several papers were read upon school planning, and opinion appeared to be universally in favour of the Derbyshire and Staffordshire type, which provides efficient cross-ventilation of every class-room. Cross-lighting must, however, be avoided as far as possible. Open-air schools on the lines of the Thackley (Bradford) school, in which each class-room has a verandah for fine weather, were commended. Rectangular class-rooms with more direct lighting and warming by the sun's rays are to be preferred to square rooms. Appliances for drying cloaks and shoes should be provided. The treatment of tuberculous children and of the pre-tubercular was brought forward by Dr. Broadbent, who strongly advocated teaching such children in the open air, and a modified curriculum. The X-ray treatment of ring-worm was approved; but the utmost caution is necessary at the present time, lest its unskillful application should throw it into disrepute. *Disease Carriers*.—Prob-

ably about 3 per cent. of the cases of typhoid fever which have recovered from the disease continue to breed and distribute the germs (Brückner). To scarlet fever, diphtheria, cerebro-spinal meningitis, and measles some risk of the same kind is attached. The importance of this matter can hardly be exaggerated. Instruction in cleanliness, periodical examination of the excreta of typhoid carriers, disinfection of the alimentary canal by drugs, are obviously necessary; with restriction to such occupations as afford the least opportunity for the dissemination of disease. *Control of Foods.*—There can be no hope of freeing the milk supply from the bacillus of tubercle without more effective control of milk growers and milk sellers. At present the milk supply can be stopped only for one particular district, and the farmer is at liberty to send the condemned milk to any other district without incurring any penalty. *Housing and Town Planning.*—Dr. Fremantle argued that the expense and opposition which an attempt to proceed under the Regulations of 1910 will entail will deter municipalities from taking advantage of the Act. *Sewage Disposal.*—C. Chambers Smith maintained that economy in the disposal of sewage may be carried much further than at present. Sedimentation tanks and percolating filters are less expensive than contact beds. Shenton advocated the sterilisation of sewage effluents by hypochlorite of lime, proving with well-ordered figures the need for this final destruction of bacterial life, and showing the efficiency and inexpensiveness of the agent recommended. An interesting paper on the influence of underground waters on health was read by Baldwin Latham, who associates the epidemic appearance of fever with a fluctuating level of subsoil water, and especially with an unusually low water level.

A conference of women on hygiene was held under the presidency of the Countess of Chichester, at which questions of great practical importance in relation to the artificial feeding of infants and the influence of the employment of married women upon infant mortality were discussed; but the subject which aroused most interest was "Home-making Centres"—centres for the teaching of what in Canada is defined as household science. Whatever other items may be introduced into the curriculum to meet the needs of particular localities, the chief subjects taught at such centres must always be cooking, housewifery, dressmaking, the care of infants and children, personal and domestic hygiene.

In the popular lecture, which brought the proceedings of the congress to a close, Dr. Alex. Hill took the opportunity of directing attention to some of the recent triumphs of sanitary science, quoting especially from the report of Sir Rubert Boyce on the condition of the West Indies:—"Look to your laurels, Brighton! 'The West Indies are rapidly becoming the sanatoria which nature surely intended them to be.'" He next proceeded to expound the principles of Mendelism, answering, incidentally, Dr. Archdall Reid's objection that they have only been shown to hold good for human abnormalities and for the characters of cultivated plants and domestic animals by pointing out that, unless characters are either so unusual as to be "abnormal" or so much exaggerated by breeding to isolate them as allelomorphs. He then submitted a scientific basis for Dr. Newsholme's contention that all infant lives must be cherished by the community by showing photographs of a white albino guinea-pig from which the ovaries were removed soon after birth and replaced by those of a black guinea-pig; one of several litters of young, all black; and their white albino sire. The doctrine of the continuity of germ-plasm, the lecturer said, by throwing the origin of the individual so far back, has profoundly modified our ideas of the heritability of the moral and pathological characteristics of the immediate parents.

The congress was fruitful in discussion, and those who attended it will carry away many new conceptions and discard some misconceptions; but amongst the many congresses which meet at this season that of the Sanitary Institute stands somewhat apart in that it supplies the stimulus for the publication of a large number of papers of permanent value. Medical officers of health and others stationed in distant parts of Britain find in it an oppor-

tunity of putting their observations and reflections in print, and submitting them in this form rather than orally, to a considerable body of their fellow-workers. An admirable and extensive Health Exhibition was organised in connection with the congress.

INTERNATIONAL CONGRESS OF PHARMACY.

THE tenth International Congress of Pharmacy was held in Brussels on September 1 to 6, and was attended by over five hundred pharmacists. The Governments which sent official representatives were those of France, Italy, Spain, Russia, the United States, Norway, Denmark, Sweden, Holland, Greece, Hungary, China, Japan, the Ottoman Empire, Venezuela, the Argentine Republic, the Republic of San Salvador, Guatemala, Haiti, and Chili. The delegates from the Pharmaceutical Society of Great Britain were Mr. Edmund White, a member of the society's council, and Mr. E. S. Peck, one of the permanent hon. secretaries of the British Pharmaceutical Conference. The most important subject which came up for consideration related to analytical methods. The international conference for the unification of the formulæ of potent drugs, held at Brussels in 1902, defined standards for a number of drugs and galenic preparations, but different methods of standardisation give different results, and it was one of the objects of the pharmaceutical congress to consider what steps could be taken to bring about the approximation of analytical methods. After a long discussion it was unanimously resolved, on the motion of Prof. Bourquelot, representing the French Government, to ask the Belgian Government to convene an international conference, composed largely of practising pharmacists, for the purpose of unifying the methods of estimating potent drugs, with the recommendation that, for the estimation of alkaloidal preparations, preference should be given to gravimetric methods. The congress also agreed that it was desirable that pharmacopœias should indicate the precise methods of determining physical constants, and that in the case of chemical tests the reactions should not be capable of giving rise to any difference of interpretation. The related topic of the international unification of analytical reagents also received consideration, and the congress resolved to request pharmacopœia commissions to adopt as far as possible normal reagents or some multiple of the normal. The decisions on these two questions constitute the most useful part of the work of the congress.

Next in importance was the discussion on the sale of proprietary disinfectants, and the congress unanimously resolved to recommend that the sale of proprietary antiseptic products and disinfectants should be officially regulated. No such products should be sold unless the manufacturers of them shall have obtained a licence from the Government, only to be granted after the products shall have been officially examined both chemically and bacteriologically with the view of ascertaining if they possess the properties claimed for them. It was also resolved to recommend that all such products should be labelled with the name and address of the seller as well as the manufacturer, and that the bactericidal strength and the date of manufacture should be stated on the label.

Among other subjects discussed were:—(1) The desirability of a large representation of pharmacists on the commission charged with the preparation of an international pharmacopœia; the congress expressed approval of the principle. (2) The advisability of pharmacists making their own galenic preparations; the congress agreed that this was desirable where possible. (3) The limitation in each country by the State of the number of pharmacies; the congress approved of the principle of limitation and agreed on a method of limitation. (4) The desirability of instituting in schools of pharmacy courses on the macroscopy, microscopy, and chemistry of natural and pathological secretions; the congress agreed that such a course of study might with advantage be instituted.

In addition to the discussion on topics of general and pharmaceutical interest, several communications of purely scientific interest were presented. Prof. Bourquelot made a further contribution to the biochemical method of examination of vegetable glucosides hydrolysed by emulsin. He pointed out the relation between the optical properties