

doctrine. The new law of gravitation quite as fully as Newton's law referred to a nature common to and independent of all individual minds. This was a necessity if there was to be physical science at all in any intelligible meaning of the term. The chairman, Prof. Wildon Carr, said that the idealistic interpretation of Einstein's theory did not imply that Einstein was an idealist or that any philosophical purpose was involved in his principle. The value of the new principle in philosophy depended on the fact that it was purely scientific and brought forward in the interest of mathematical physics. What it had done for philosophy was to show conclusively that the realist assumption of independent objective existence was not only unnecessary as a condition of the possibility of science but was a positive methodological hindrance.

Concurrently with the philosophical discussions the psychologists held a meeting in the psychological laboratory for the reading of papers and demonstrations.

On Saturday the British Psychological Society held separate meetings in the Medical School of the University. In the morning, with Prof. T. H. Pear in the chair, Dr. C. S. Myers described a number of experiments upon the various factors involved in

the appreciation of music. He showed how closely the processes of listening to music may follow those involved in the response to pure tones, and considered especially the parts played in the æsthetic enjoyment of music by association, by a process of "distancing," and by "mystical feeling." Mr. F. C. Bartlett gave an account of some experiments leading up to a psychological study of the processes of conventionalisation; and Mr. R. H. Thouless discussed the phenomena of contrast in a smoothly graded disc. It was suggested that McDougall's drainage theory could scarcely be accepted as an adequate explanation of the contrast effects, a view that obtained support in the ensuing discussion. In the afternoon the Industrial Section of the Society held a meeting. Dr. Leslie Mackenzie presided. Mr. E. Farmer presented a new method of dealing with curves of output in factory work, and discussed the psychological significance of certain curves representing work in chocolate-packing and glass-blowing. Prof. A. V. Hill demonstrated his ergometer, and spoke to a large audience on characteristics of muscular work in the intact organism. Mr. Jackson read a paper prepared by Mr. S. Wyatt and himself on the effect of rest pauses upon output curves.

The Congress of the Royal Sanitary Institute.

THE thirty-third Annual Congress of the Royal Sanitary Institute at Bournemouth, which was held during the last week in July, displayed the multifarious character of the work embraced in sanitary science or public health. Special sections were devoted to sanitary science and preventive medicine, to engineering and architecture, to maternity and child welfare including school hygiene, to personal and domestic hygiene; and there were conferences of veterinary inspectors, health visitors, sanitary inspectors, representatives of sanitary authorities, and medical officers of health.

Major-General J. E. B. Seely's presidential address was an able summary of urgent public needs, an appeal for clean milk and for judicious expenditure on public health needs including housing, and a reiteration of the fundamental importance of education in advancing public health progress.

Sir Arthur Newsholme's presidential address to section 1 dealt with the relative rôles of compulsion and education in public health work. He laid down the following general principles as justifying compulsion in public health or social work: (1) that the end aimed at by compulsion must be very important for the public welfare; (2) that it cannot be achieved to an equal extent or within a reasonable time by educational measures, not including the education provided by education; (3) that the compulsion can be enforced; and (4) that it is continuously endorsed by a majority of the community. He gave examples of the fact that the social history of the 19th century consists largely in a steady extension of the enforcement of compulsory duties and restrictions in various aspects of communal life, each of which had been introduced to secure the larger liberty of the oppressed and handicapped members of the community; and then proceeded to apply these general principles to the case of two chronic communicable diseases like tuberculosis and syphilis, and to alcoholic indulgence. His general conclusion was that compulsion in these directions would be effective inversely to the extent to which it was needed; and that in the ultimate issue the two ideals of compulsion and of education of character are not irreconcilable in public health work.

In his address in the maternity and child welfare section, Sir George Newman stressed the continuing but avoidable loss of maternal and infant life, occurring through ignorance and still more through lack of care, and the still larger suffering and disablement of mothers and infants which might have been avoided. The fact that 35 per cent. of the children first admitted to the elementary day schools in England are so physically impaired as to need medical treatment, emphasises the importance of hygienic and medical care of the mother and of the infant before school age is reached. At the present time about 8*d.* per head is being spent on official services of maternity and child welfare, while the financial value of the lives saved by these services exceeds this sum many times over.

There was a useful discussion on "Fuel in relation to health" introduced by Prof. J. W. Cobb of Leeds University. In his paper Prof. Cobb traced the history of the stages through which the manufacture of gas for domestic purposes had passed. The New Gas Regulation Act had accepted the fact that the test of intrinsic luminosity was absolute, had permitted the distribution of gas of a lower calorific value than formerly, and had not laid down any limitation of the amount of carbon monoxide in gas. Evidently Prof. Cobb did not regard increase of carbon monoxide as necessarily increasing danger to the consumer, and he pointed out that although recently more cases of poisoning by this gas had been recorded, they could not be due to increase of its proportion, inasmuch as action in this direction so far had not been great.

In a paper on smokeless methods in Glasgow housing schemes Councillor W. B. Smith emphasised the too little recognised fact that soot from domestic fires is worse than that from boilers of manufacturing plants, on account of the excess of tar products, and advocated central provision of hot-water supplies in towns.

Lieut.-Colonel Clemesha described methods of collection and disposal of excreta suitable for small tropical villages, where, as a rule, there is a total absence of all sanitary arrangements. This leads not only to excessive cholera and enteric fever, but to the widespread dissemination of anchylostomiasis,

a parasitic disease, perhaps more destructive of health and efficiency than either cholera or malaria. It was necessary that the provision made for such villages should be primitive in character, and the "pit latrine" was the most satisfactory in most circumstances. Such latrines obviate the need for any conservancy staff and they greatly diminish surface contamination of the ground, and thereby reduce the possibility of spreading hookworm disease. Many of these simple arrangements have been in existence for hundreds of years in countries like Persia, Arabia, and Mesopotamia, and have given rise to no nuisance, but are in all respects satisfactory.

A few only of the subjects discussed at this Congress have been mentioned. The educational value of such meetings stands high. The Congresses of the Royal Sanitary Institute are unique in that they focus the views and wisdom of every profession and calling bearing on public health whether legal or medical, engineering or architectural, women workers voluntary or officials, medical officers of health or sanitary inspectors, veterinary and medical inspectors, representatives of sanitary authorities, and the workers in voluntary organisations. Out of exchange of outlooks from these various angles public health progress is secured.

Pharmaceutical Education and Research.

AT the British Pharmaceutical Conference, held at Nottingham on July 24-27, the President, Prof. H. G. Greenish, delivered an address on "Pharmacognosy and the Pharmaceutical Curriculum." Pharmacognosy, he said, was a field of knowledge that the pharmacist was peculiarly fitted to cultivate, but he would not be able to do so satisfactorily unless he had received a sound preliminary education and had been subsequently trained in chemistry, botany, physics, and elementary zoology. The entrance examination to pharmacy should, he thought, be raised to the level of matriculation, and the training in the sciences upon which pharmacognosy is based should follow and not precede the practical training in the pharmacy which is necessary before the student can present himself for the Qualifying Examination. Dealing with the course of instruction in botany, this, he thought, should be adapted to the object the student had in view, special attention being paid to anatomy, morphology, physiology, and systematic botany.

The training in pharmacognosy should be of a more general and more practical nature than was at present often the case, and should include the determination of diagnostic characters by means of the lens or the microscope or by qualitative chemical tests as might be requisite. In this respect a detailed syllabus was a disadvantage, as it restricted the freedom of thought and the development of a spirit of inquiry which was essential to true progress. In the advanced course of instruction and in the major examination more stress should be laid upon the identification of powdered drugs, the analysis of mixed powders, and the assay of drugs by chemical methods. Opportunity for post-graduate work was very necessary and every possible inducement should be offered to the student to undertake it. The Universities of Manchester and Glasgow had made arrangements for pharmaceutical subjects to form part of the examination for the degree of Bachelor of Science, and if the University of London could be induced to make a similar arrangement a considerable step forward would be made.

The student who had attended advanced courses of instruction in the selected subjects would then be

in a position to take the degree of B.Sc. From this he could proceed without difficulty to the degree of doctor of philosophy, the requirement of the University of London being broadly two further academic years of study, including the presentation of a thesis on an approved subject. The work for the thesis could be carried out in an institution such as the research laboratories of the Pharmaceutical Society under teachers recognised by the University. The field of pharmacognosy is so wide, and the problems that await solution are so diversified in their nature, that no difficulty would be encountered in selecting subjects suited to the varied abilities of the students. Great assistance would be rendered in this work by the establishment of an experimental station similar to the Pharmaceutical Experimental Station of the University of Wisconsin at which the material necessary for investigation could be grown and experiments carried out. Possibly such a station could be established in connexion with one of the agricultural colleges.

The determination of the Pharmaceutical Society to foster its scientific work more in the future than it has done in the immediate past was one of the most hopeful signs for the future of pharmacy, and the society, by developing the work which pharmacists were specially trained to do, would go far to establishing its position as a learned society. The president concluded by saying that there might be obstacles to be surmounted, misunderstandings to dispel, and prejudices to be overcome, but the spirit of the pioneers of scientific pharmacy existed to-day and, though latent, was strong. The society should set its educational policy in the direction indicated by the wisdom of its founders and foster the love of the calling which distinguished its early years. So alone would pharmacy ensure for itself the appreciation of a nation.

University and Educational Intelligence.

LONDON.—Dr. George Senter, principal and head of the department of chemistry, Birkbeck College, has been selected by the University of London Graduates' Association as candidate for the vacancy in the representation of science graduates on the Senate of the University, caused by the election of Dr. Walmsley to the chairmanship of convocation. Dr. Senter was formerly a member of the Senate, and has for many years taken an active part in University affairs.

DR. WALTER RITCHIE, assistant lecturer in biology in the University College, Aberystwyth, has been appointed assistant lecturer in biology at the Technical College, Bradford, in succession to Mr. L. P. W. Renouf, who resigned his appointment on his election to the professorship of zoology in the University of Cork.

IN accordance with the terms of the will of the late Sir Archibald Dawney, the Royal Institute of British Architects has awarded, for the first time, two scholarships, each of 50*l.* per annum for two years, to Mr. E. U. Channon, Architectural Association, and Mr. D. J. A. Ross, Robert Gordon's Technical College, Aberdeen; and one scholarship of 25*l.* per annum, for two years, to Mr. C. S. White, Architectural Association. The scholarships are intended to foster the advanced study of construction and the improvement generally of constructional methods and materials and their influence on design.