

Dante with medicine. Though opposed to the view that Dante himself was a medical man, the professor stated that the poet studied medicine at Bologna, was closely connected with Alderotti and Pietro d'Albano, two of the most distinguished physicians of that time, was prior of the corporation of physicians and apothecaries, and was given the title of magister in a contemporary document.

Other papers on miscellaneous topics were those by Dr. F. J. Poynton on doctors and the dawn of aerostasia, by Dr. J. D. van Gils of the Hague on the doctors of Molière and Shaw, and by Mme. Panayotatou of Alexandria on hygiene and dancing in ancient Greece. It is proposed to hold the next Congress of the history of medicine at Geneva in 1925.

### The Research Association of British Rubber and Tyre Manufacturers.

PROBABLY in no industry is the old ground of knowledge less thoroughly explored and the new unbroken field for useful research so extensive and attractive as in the rubber industry taken as a whole. A hundred years or a little more have passed since the discovery that rubber could be converted into a workable form by solution in suitable solvents or by mechanical kneading, and the process of vulcanisation was discovered eighty years ago. These operations, which are yet applied unaltered in principle and very little different in practical detail, still represent the foundation of rubber manufacture of the present day; compared with them, all the other innovations have been of minor importance. The disadvantages, however, inherent to these fundamental operations are so marked as to cause surprise that so little further advance has been made during the last half-century. It is almost astounding that so large a portion of the effective history of the industry should be found recorded in the remarkable "Personal Narrative" of Thomas Hancock, published in 1857, after his retirement.

If anything further had been needed to emphasise the importance of the rubber industry, particularly that section of it dealing with the production of rubber tyres for various types of vehicles, and the call for its further scientific development, the period between 1914 and 1918 supplied the necessary stress in an unmistakable manner. It was natural, therefore, that members of certain companies interested in the manufacture of rubber goods should decide to take advantage of the assistance offered by Government to found a Research Association of British Rubber and Tyre Manufacturers. An energetic Committee under the chairmanship of Mr. Alexander Johnson saw the Association pass from the embryo stage to a state of healthy and vigorous existence with Mr. B. D. Porritt as director of Research.

On account of the early part of the year 1920 being inopportune for the purchase of premises and equipment, the Research Association first found a temporary home in University College, London, thus enabling a commencement with a preliminary, albeit necessarily restricted, programme of work, more particularly of a purely physical and chemical nature. Later, after careful search and inspection of suitable premises, purchase was completed of two detached houses at 105 and 107 Lansdowne Road, Croydon. These possessed several advantages, and after necessary alterations have been converted into a prepossessing unit. The space between the two houses is now occupied by a substantial connecting building which provides increased accommodation in addition to inter-communication. The frontage of

the site is 120 feet and the depth 206 feet, the latter leaving ample room for future extensions.

The building, which was formally opened by Lord Colwyn on July 26, comprises administrative offices, library, experimental laboratory for the preparation of rubber, incorporation of compounding ingredients and vulcanisation, workshop, mechanical testing laboratory, physical laboratory, chemical laboratories, storage accommodation and caretakers' quarters. All the necessary heavy experimental plant is contained in the basement of the inter-communicating building, and one of the two original houses has been kept entirely free from running machinery in order to permit the use of delicate instruments without risk of disturbance from vibration.

Those responsible for the founding of this Association have realised that the importance of research to industry lies not so much in the possibility of very occasional discoveries of a revolutionary nature as in the sure benefits which are the abundant fruit yielded by the application of science to the improvement of existing methods. The functions of the Association, while not excluding the study of fundamental problems, include more prosaic considerations such as improvement in the control of manufacturing operations and the testing of raw materials and final products. In such directions there is indeed urgent need for work, such vital matters as the reasons for the use and selection of various necessary "compounding ingredients" and the methods adopted for the production of vulcanised rubber possessing special physical properties, *e.g.* resistance to cutting or abrasion, resilience, toughness or even hardness, being based on almost entirely empirical grounds, often of the least desirable type.

Whatever requirement may have to be left unsatisfied in such an Association as this, it should be able to anticipate with the utmost confidence an abundant and unceasing supply of problems for investigation.

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### University and Educational Intelligence.

PROSPECTUSES of Universities and Colleges for 1922-23 are beginning to appear. Leeds University publishes an extensive programme of evening courses (advanced) in engineering, dyeing, textile and leather industries, and geology, and afternoon courses in coal-mining. During each of five evenings of the week from five to nine classes will be held. The faculty of engineering of the University of Bristol announces additional vacation courses to be held in 1923. University College, Exeter, is establishing new courses, intermediate and final, in horticulture and in agriculture, the final course in agriculture being at the Seale-Hayne Agricultural College, Newton Abbot.

SECONDARY education in the United States is, as every one knows, conducted chiefly in public (that is to say, in State) schools. But the part of the field occupied by the private high schools and academies is not inconsiderable. Advance sheets from the biennial survey of education in the United States, 1918-20 (Bulletin, 1922, No. 9 of the Bureau of Education), show that in 1919-20 there were 2093 of these institutions, attended by 184,153 secondary students and, in addition, 250,000 elementary pupils. A remarkable growth occurred between 1905 and 1920. During this period the number of their secondary students increased by 72 per cent. Nearly 75 per cent. of the institutions are under denominational control; of these 60 per cent. are Roman Catholic, and the following analysis shows that to the Roman Catholic schools is chiefly attributable the above-