

can apparently be raised, and the suggestion of atomic allotropy appears worthy of development as a possible interpretation of others among the phenomena of pure iron, which considerations of space have excluded from the present summary.

During the discussion several interesting slides showing variations of the micro-structure of iron were exhibited by Prof. H. C. H. Carpenter.

PREVENTIVE MEDICINE IN PENNSYLVANIA.¹

PREVENTIVE medicine is a science so likely to appeal to the genius of the American people that it is of considerable interest to read the reports issued in July, August, and September of 1914, by the Pennsylvania State Department of Health on various aspects of its activities.

As elsewhere, so in the State of Pennsylvania, the force which caused the development of preventive medicine was the compulsion exerted by outbreaks of disease. An epidemic of typhoid fever in 1885 was the means of obtaining the enactment of a previously twice defeated Bill to establish a State Board of Health, which, however, at first was much circumscribed in its powers and duties. A severe outbreak of smallpox in the years 1901-04 impelled the Legislature to establish a State Department of Public Health.

At its head is a Commissioner of Health, with very great powers of initiative, on whom falls the duty of appointing whatever assistants he may find necessary to carry on the work. The State Department of Health has direct executive control over all public health problems of every sort in the more rural portions of the State, comprising four-fifths of the land area and one-quarter of the total population. Over the remainder of the population, aggregated in the more densely populated townships, which are required to maintain their own local boards of health, the State Department of Health has advisory and supervisory control, but no executive responsibility except in relation to sanitary engineering, tuberculosis, and the collection of vital statistics.

The State administrative machinery, therefore, in some respects resembles, but in others is in marked contrast to, that of an English county health department. Both have general supervisory and advisory duties with regard to the smaller areas within their compass. The English county department has, however, nothing approaching to the wide general executive functions of the Pennsylvania State Department, although in some respects—for example, in the control of tuberculosis—their activities are akin. The complete responsibility of the Pennsylvania State Department for the health of the public in the rural portions of its area has no analogy in county administration in this country. The English system is based far more than is the Pennsylvanian on local as opposed to central administration.

The organisation of the State Health Department would appear to be on very effective lines. Out of the central department have crystallised a number of sub-departments, or divisions, dealing respectively with vital statistics, school medical inspection, sanitary engineering, tuberculosis dispensaries and nursing, sanatoria, housing, laboratories, and the distribution of biological products. The chief of each division reports directly to the health commissioner. There are two special divisions, one of which conducts all the auditing and accounting and part of the purchasing for other divisions, while the other attends to the whole of the storage and shipment of materials. The

¹ Pennsylvania Health Bulletin, July, August, September, 1914.

divisional executive officers are thus left free to devote their energies to the more essential public health work.

Comparison of the work of some of these divisions with that of health departments in this country is instructive. For example, the registration of births and deaths is far more closely bound up with public health in Pennsylvania than is the case in England and Wales, in which it is not in any way directly controlled by the Health Department; whereas in Pennsylvania, on the contrary, the Division for Vital Statistics, a branch of the State Health Department, under the direct supervision of a health officer, is responsible for precisely the same work as is done by our local and central registrars in respect of births and deaths and marriages.

In the same way the school medical service, instead of being, as is unfortunately the case in this country, a separate service affiliated only for reasons of convenience to the public health service, is recognised in Pennsylvania as essentially a branch of public health, and as such is administered by the State Health Department through a division of medical inspection. Sanitary engineering, again, carried out as it is by a special division of the State Health Department, is much more clearly recognised as a function of public health than is the case in this country.

Perhaps the most striking feature of the Pennsylvanian scheme is its systematic educational campaign. All reports sent in from every division of the Health Department to the Health Commissioner are dealt with from their public health aspect, and are then handed over to an educational section of the central department, where they are rewritten and issued in popular form as lectures, circulars, leaflets, newspaper talks, or periodical bulletins. This eagerness to popularise technical knowledge is an important side of public health work, which could with advantage be better developed in this country. In general administration, probably English methods give as good results, though possibly in more circuitous ways. Pennsylvania has had the advantage of beginning at a time when it could develop its public health system at one stroke and as a whole, and so could largely avoid the errors and vagaries of a system which has grown by accretion.

H. P. N.

CHEMISTRY AT THE BRITISH ASSOCIATION.

ALTHOUGH so many topical subjects were, on account of the war, excluded from the discussions of the section, the attendance at the meetings was on the whole satisfactory, exceeding the anticipations of the earlier part of the year. It is, however, clear that anything like general interest can only be evoked in the Chemical Section by discussions on rather broad subjects, papers giving the results of researches on some particular branch being only too frequently delivered to nearly empty benches. This not infrequently arises from the paper being so specialised that the author is practically the only person in the room capable of appreciating its significance and value. One cannot help feeling that the atmosphere of the Chemical Society or other specialised body would be more sympathetic. Under the exceptional circumstances of this year foreign guests were few in number, but the section had the pleasure of welcoming and listening to two of our Belgian allies—Prof. Henry and Prof. Ranwez, from Louvain, the former giving an account of researches on the preparation and properties of vinyl-acetic nitrile, which he has carried out in Prof. Perkin's laboratory at Oxford during his residence in this country, while the latter contributed a paper to the discussion on smoke.