

paper on the subject appears in *The Astrophysical Journal* (June, vol. xxxvii., No. 5), and the conclusions at which he arrives can be best conveyed in his own concise summary. Many prominences, by their shapes or movements, seem to indicate the existence of a horizontal current in the solar atmosphere. This current may have opposite directions at different altitudes in the same locality. It may change its direction, just as the wind changes upon the earth. In middle latitudes the average tendency for movement is towards the poles. In high latitudes the tendency is towards the equator. This tendency is more marked in the northern than southern hemisphere. From lat. 10° N. to 10° S. the average tendency is from north to south directly across the equator. The prevailing directions mentioned above apply to prominences of all heights.

THE BRIGHTON MEETING OF THE BRITISH MEDICAL ASSOCIATION.

A MEDICAL congress, especially in view of the wide development of specialism, rarely if ever helps to bring to light a new discovery or to promote a new theory, or at least to work out an application in practice of some basic theoretic facts. It has, however, the importance of grouping together men who work on widely different lines and are enabled to exchange ideas in a favourable atmosphere. In so far the Brighton meeting of the British Medical Association was undoubtedly very successful. We had, for example, a very interesting address by Prof. C. G. Barkla, F.R.S., on the secondary X-ray radiations in medicine, which, being delivered by a prominent physicist, introduced an element of exact science into empiricism of therapeutic applications. Prof. Barkla gave a detailed description of the scattered, fluorescent, and corpuscular rays. He reminded his audience that all chemical, therapeutic, and physical action attributed to X-rays was due to the secondary radiation of negative electrons. He pointed out that in order to produce a definite effect in an organ there must be a transformation of the energy of Röntgen radiation into energy of corpuscular radiation, as well as an absorption of the latter by the respective organ.

The solid basis and irrefutable arguments of physics could not be found or expected in the discussion on anaphylaxis. This was opened by Prof. W. E. Dixon, who entered into various details of the condition of experimentally produced hypersensitiveness, describing the changes occurring in the muscular and circulatory systems, and emphasising the significance of local symptoms. When he came to declare his preference for one of the three leading hypotheses as to the causation of the "anaphylactic shock," he declared himself in favour of the ferment theory, because he regarded the "classical" side-chain theory as a purely speculative hypothesis, and the more recent "colloidal theory" as still being in its infancy, whereas he found the ferment theory to be based on carefully recorded physiological facts. Prof. G. Sims Woodhead and Dr. Myers Coplans gave examples of clinical conditions which may be looked upon as similar to that of experimental anaphylaxis. Prof. Woodhead made a very interesting remark as to the possibility of explaining some of the phases of pneumonia by the sensitisation of the system by the specific bacterial protein. He also referred to the view largely held as to the possibility of organs being specifically sensitised, as instanced by the uterine muscle in eclampsia.

Drs. Embleton and Thiele related the results of their very remarkable experiments, which have shown that by sensitising laboratory animals by injection of bacterial protein of purely saprophytic bacteria like

B. mesentericus one may make them so highly susceptible that a subsequent inoculation of live bacteria of the same species will kill the animals under symptoms of acute septicæmia. These experiments are undoubtedly of a very wide importance, as they may help in producing typical specific disease conditions in experimental animals naturally refractive to the infection produced by ordinary means.

A less debatable basis for discussion was given by Prof. George R. Murray, who dwelt on the importance of internal secretion in disease in a masterly presidential address. He explicitly limited the name of "secretion" to the useful products of glandular activity which pass into the blood stream in order to play some definite part in metabolism. Ductless glands in particular act on other tissues by means of "hormones," which excite definite forms of chemical activity in cells for which they have a special affinity. The glandular cells may form more than one specific hormone; they may also produce "inhibitory hormones," *i.e.* substances which inhibit the chemical activity of the tissue cells instead of exciting them. He passed in review the consequences of an insufficient as well as superabundant supply of glandular hormones, and insisted particularly on the relations of the thyroid and pancreatic gland which tend to inhibit each other. This, as proved by further discussion, is one of the most important facts for the practice, as it tends to explain the machinery of diabetes and all forms of glycosuria. Dr. A. E. Garrod, F.R.S., could not discover any basis for a sharp differentiation of the diabetic and non-diabetic glycosurias. In his belief the progress of research was strengthening the viewpoint that the internal secretion of pancreas was the almost only controller of carbohydrate metabolism in the system. The peculiar forms of glycosuria without a definite diseased condition he tried to explain by a disturbed correlation between the various glands of internal secretion.

A general impression gained from all the various discussions can be summarised in that the medical profession is fully alive to the importance of "control" experiments, that it errs rather in the application of a severe criticism to its scientific contributions, and keeps to the moral, "Prove all things, holding fast that which is good."

HYDROGRAPHIC AND PLANKTON OBSERVATIONS IN THE NORTH SEA.

WE have received from the Board of Agriculture and Fisheries the subjoined communication relating to observations to be made in the North Sea:—

The research vessel s.y. *Hiawatha*, chartered for fishery research in the North Sea, left the Tyne on Tuesday for the purpose of making certain practically continuous hydrographic observations, at a fixed position during the first fortnight of August. She will be taking part in a coordinated research into the movements of the great water masses in the North Sea, and for this purpose she will drop her anchor about 150 miles "E. by N. $\frac{1}{2}$ N." of Shields and commence her work. Her labours will be identical in aim and in the main in methods with researches simultaneously carried out on board eight other vessels, also at anchor, at positions which collectively will permit of the study of conditions representative of the hydrographic conditions over the whole of the North Sea.

Two of these other vessels will be research vessels, acting on behalf of Sweden and Scotland, the Swedish vessel working in the Skagerak, the Scottish well to