

the inhabitants of England and of Scotland, mainly of Anglo-Saxon origin, voted together on this subject; whereas a contrary opinion regarding this same question was held by the greater proportion of the people of Ireland, and to a large extent by the Welsh, most of whom are derived from Ibero-Mongolian ancestors. It is difficult to account for the diversity in the sentiments of the people above referred to unless we consider it due to their racial mental qualities. Environment has doubtless played an important part in the evolution of these people, but their inherited racial character has had more to do with the position which the Anglo-Saxon race has gained in the world than the mineral wealth, climate, or protection afforded us by our seagirt coast.

The environment under which even a few generations of men exist would seem capable of influencing the structure of their central nervous system, as illustrated by comparing the mental qualities of our rural and urban population. The conditions under which the city-bred person, child and man, lives engender in the course of a few generations an unstable state of nerve structure, resulting in an excitable character which, if carried beyond a certain point, leads to unsoundness of mind, and may account for the increasing number of lunatics in this and the other large cities of Europe. General Sir Redvers Buller, again, in speaking of the soldiers under his command in South Africa, refers to the fact that our city-born men have imperfect sight compared with men reared in the open plains of the Transvaal, thus affording us another example of the effects of environment on the race. These are a few of the many interesting and important subjects which arise in connection with the study of anthropology, including craniology; and the contents of our museum and library offer unrivalled opportunities to the student seeking for knowledge in those branches of science.

In conclusion, as already stated, much of Hunter's reputation was founded on the result of his labours in those branches of science which tend to elucidate man's nature; and during the past century a succession of English surgeons has carried on the work commenced by our great master, enriching our museum and endeavouring to make this college, not only an examining and licensing body, but, what it certainly should be, an imperial institution for the cultivation and diffusion of those departments of knowledge which bear on the art and science of surgery. The ideas entertained by John Hunter's immediate successors on this subject were ably stated by Sir William Lawrence in his lectures already referred to. He observes that "our own individual credit, and the dignity, honour and reputation of our body, which we are bound to maintain, demand that surgeons should not be behind any other class in the possession either of the cultivation of branches of knowledge directly connected with surgery or in any of the collateral pursuits less immediately attached to it. It is only in reference to such views and objects that the Hunterian collection could have been accepted or can be of any use to this college." Hunter would, if he had still been with us, have thrown all his indomitable energies into the successful working of such an institution, and amidst the turmoil, strife and competition going on around him would, as we see him in this picture, have been engaged in the earnest, accurate, patient study of nature. It remains for our younger members to emulate the example set them by John Hunter, and by such service to secure for themselves lasting satisfaction, and beyond that add to the real dignity and utility of their college and their profession.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—The 22nd meeting of the Junior Scientific Club was held on Friday, February 22. Mr. H. B. Hartley (Balliol) read a paper entitled, "Polymorphism; an Historical and Experimental Account," which was followed by a paper by Prof. Townsend entitled, "The Conductivity of Gases."

CAMBRIDGE.—The subject for the Adams prize in 1903 is, "The bearing on mathematical physics of recent progress in the theory of the representation of discontinuous quantity by series, with special consideration of the logical limitations of the processes involved." The prize is open to all graduates of the University, and is of the value of 25*l*. Essays are to be sent privately to the Vice-Chancellor by December 16, 1902.

The tender for the new School of Botany, to be erected behind

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the Sedgwick Museum, amounts to some 23,000*l*. It is recommended for acceptance by the syndicate.

AN animated debate occurred in the House of Commons on Tuesday on the attitude taken up by the Board of Education towards higher-grade elementary schools in which science is taught, leading to the judgment in the case of "Regina v. Cockerton," that grants made by School Boards for scientific instruction are illegal. In the course of his reply to various criticisms, Sir John Gorst said that the Government proposed to introduce a Bill for the creation of secondary education authorities having power to provide instruction in subjects that were not contained in the Elementary Day School and Evening Continuation School Code. He agreed that we should not have a proper system of education until one authority was established in a district, having control over schools of every kind and every grade. If a change of that kind were made, overlapping would cease and the existing chaos would disappear.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, February 7.—"The Boiling Point of Liquid Hydrogen, determined by Hydrogen and Helium Gas Thermometers." By James Dewar, M.A., I.L.D., F.R.S., Professor of Chemistry at the Royal Institution, and Jacksonian Professor, University of Cambridge.

In a former paper it was shown that a platinum-resistance thermometer gave for the boiling point of hydrogen $-238^{\circ}\cdot4$ C., or $34^{\circ}\cdot6$ absolute. As this value depended on an empirical law correlating temperature and resistance which might break down at such an exceptional temperature, and was in any case deduced by a large extrapolation, it became necessary to have recourse to the gas thermometer. The gases used as thermometric substances were hydrogen, oxygen, helium and carbonic acid.

Taking the average values given by the experiments as being the most probable, then the boiling point of oxygen is $-182^{\circ}\cdot5$ and that of hydrogen is $252^{\circ}\cdot5$, or $20^{\circ}\cdot5$ absolute. The temperature found for the boiling point of oxygen agrees with the mean results of Wróblewski, Olszewski and others. If the boiling point of oxygen is raised to -182° , which is the highest value it can have; then an equal addition to the hydrogen value must follow, making it then -252° or 21° absolute. In a future communication the temperature of solid hydrogen will be discussed.

February 14.—"On the influence of Ozone on the Vitality of some Pathogenic and other Bacteria." By Dr. Arthur Ransome, F.R.S., and Alexander G. R. Foulerton.

The experiments have shown that ozone in the dry state, and in such strength as the authors used it, has no appreciable action on the vitality of the various bacteria experimented with, and, so far, the results are in accordance with those of Sonntag and Ohlmüller. Nor did a prolonged exposure to the action of ozone diminish in any way the pathogenic virulence of *B. tuberculosis* in sputum. Single experiments would also tend to show that ozone can have little, if any, effect on the pathogenic virulence of *B. mallei* and *B. anthracis*.

On the other hand, the experiments would appear to confirm the conclusion arrived at by Ohlmüller as to the bactericidal property of ozone when passed through a fluid medium containing bacteria in suspension.

A comparison of the inactivity of ozone as a disinfectant in the dry state with its action in the presence of water suggests a superficial resemblance with other gases, such as chlorine and sulphur dioxide. In the absence of further experiment, however, it would not be possible to press the analogy too closely.

In the dry state, and under the conditions in which it occurs in nature, ozone, then, is not capable of any injurious action on bacteria so far as can be judged from the experiments; and it is concluded that any purifying action which ozone may have in the economy of nature is due to the direct chemical oxidation of putrescible organic matter, and that it does not in any way hinder the action of bacteria, which latter are, indeed, in their own way, working towards the same end as the ozone itself in resolving dead organic matter to simpler non-putrescible substances.

"On the Functions of the Bile as a Solvent." By Benjamin Moore and William H. Parker. Communicated by Prof. E. A. Schäfer, F.R.S.

In this paper evidence is brought forward that the bile exercise