

Taste and Chemical Constitution.

THE relationship between physiological action and chemical constitution has been investigated for a number of compounds by animal experiment, when it is easy to compare and contrast the effects on a variety of systems of closely related substances. In spite of much work on the subject, no wide generalisations are yet possible, although it has been frequently shown that a very slight alteration in the molecule may enhance or decrease a particular physiological action: as an example may be mentioned the varying pressor effects of adrenaline and compounds closely related to it. The question is still less susceptible to investigation when the relationship between chemical structure and taste or smell is considered, since the experimental subject must be man and the investigator has to rely upon his subject's subjective sensations and cannot measure objectively the effect of his stimulus.

There is no generally accepted classification of odours, but tastes are usually divided into four groups—sweet, sour, salt, and bitter. No comprehensive generalisation has yet been discovered, however, for the relationship between taste and chemical constitution. It has usually been supposed that different people will taste the same compound, although perhaps with different degrees of intensity. A. L. Fox, of Wilmington, Delaware, U.S.A., has, however, recently found that whereas some people find that phenyl thiourea has an extremely bitter taste, others will state that it has no taste at all. As a result of numerous trials, he has found that about 60 per cent can taste it, whilst to the other 40 per cent it has no taste. The intensity of the bitter taste in the former group varied considerably. The division into the two groups was not a question of sex, age, race, colour, or family: of a pair of identical twins, one tasted it, the other did not.

A variety of thioureas was then examined: all had a bitter taste to some people, no taste to others: the list included *p*-ethoxy phenyl thiourea, and a number of other phenyl thioureas, naphthalene thioureas, diphenyl thiourea, and 2, 2' dimethoxy, 5, 5 dimethyl diphenyl thiourea. With diorthotolyl thiourea, however, the group of non-tasters was large, since some of those who had tasted all the previous compounds failed to taste this. With di-*para*-tolyl thiourea the taste was first sweet, then bitter. Dicrotyl thiourea and dibenzyl thiourea were also bitter to the tasters, but thiourea itself had an unpleasant taste to both groups, and tetramethyl thiourea appeared sour to both. The bitterness, therefore, appeared to be associated usually with compounds containing a benzene or naphthalene ring and thiourea: removal of the sulphur atom and replacement with oxygen can completely alter the taste, since *p*-ethoxy phenyl urea has a very sweet taste.

The failure of certain people to taste the bitterness of these thioureas is analogous to the failure of people to smell certain verbenas, as observed by Blakeslee. Some people found certain verbenas very fragrant, whilst to others they appeared to have no smell. With other verbenas, however, the two groups were reversed. It is, in fact, a well-known phenomenon that the sense of smell is very capricious, certain people being much more sensitive to some odours than others. It is obvious that this inability to smell or taste must be borne in mind when experiments are carried out on the relationship between the sensation and chemical constitution: errors may be avoided by the use of a sufficient number of subjects.

University and Educational Intelligence.

ABERDEEN.—At the graduation ceremony held on July 8 the honorary degree of LL.D. was conferred, among others, upon Prof. John Garstang, John Rankin professor of the methods and practice of archæology in the University of Liverpool. The ordinary degree of D.Sc. was conferred upon W. A. Carr Fraser, for a thesis entitled "Critical Studies in Hæmocytometry".

LONDON.—The external degree of D.Sc. in chemistry has been conferred on Aruppillai Kandiah (private study), for a thesis entitled "Studies in Dicyclic Systems. Part I. The Chemistry of 2-Substituted *cis*- and *trans*-Hexahydrohydrindenes. Part II. The Influence of *cis*- and *trans*-Hexahydrohydrindene Nuclei on the Carbon Tetrahedral Angle".

DR. T. J. DRAKELEY, head of the Chemistry Department and School of Rubber Technology at the Northern Polytechnic since 1919, has been appointed principal of the Polytechnic in succession to Dr. R. S. Clay, as from Jan. 1, 1932.

A VACATION course for teachers will be held at Bingley Training College on July 29–Aug. 12. The opening lecture, entitled "The Educational Revolution and its Steps of Progress", will be given by Prof. Patrick Geddes, on the first evening. Other evening lectures include Prof. T. H. Pear on "Learning how to Study" and Dr. G. H. Green on "Racial Bias and International Understanding". In the work of the senior school, the question of biology will be dealt with by Prof. R. D. Laurie throughout the course, and Sir Percy Nunn will deal with mathematics. A summer vacation course for physical training will be held at the Grammar School, Ilkley, on Aug. 3–15. Application for entrance to either course should be made to the Education Officer, County Hall, Wakefield, Yorks.

THE directors of Messrs. H. K. Lewis and Co., Ltd., booksellers and publishers, held a reception on July 9 to inaugurate their new building at the corner of Gower Street and Gower Place, adjoining University College, London. Designed by Mr. J. R. Moore Simpson, the new building is of steel-framed construction, faced with stone to harmonise with the adjoining College buildings, and part of the accommodation on the upper floors is reserved for the use of the College. Sir Gregory Foster, who presided over a large company, including many of the staff of University College, wished success to the firm in their enlarged undertaking. He was supported by Prof. Thane, who discussed 'text-books', stressing their increasing size in recent years, an increase not fully justified. Messrs. Lewis, established in 1844, now include, in addition to their main activity of bookselling, a publishing department, circulating library, and second-hand book department. As publishers they have specialised in medical books, and their catalogue includes many honoured names in the medical world, such as Jenner, Burdon Sanderson, Lister, and Osler. In addition to books, scientific journals are published, including the *British Journal of Dermatology*, *British Journal of Experimental Pathology*, and the *Clinical Journal*. A large stock of anatomical models, diagrams, and charts is available. The record of the firm is one of continuous growth, with every indication of acceleration owing to the new accommodation. A pleasing feature of the reception was the general recognition of the work of booksellers, publishers, and librarians as contributors to scientific and educational progress.