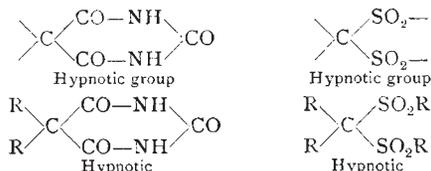


CHEMISTRY AND PHARMACO-THERAPEUTICS.

THE Hurter memorial lecture was delivered recently before the Liverpool Section of the Society of Chemical Industry, by Dr. C. A. Keane, on modern iatrochemistry (Journal of the Society of Chemical Industry, Liverpool Section, April 15). Dr. Keane traced the development of various synthetic products used in pharmacy, and discussed the relations of physiological properties to structure so far as they may be said to be known. He illustrated his discourse by three typical groups of compounds—the antipyretics derived from *p*-aminophenol, the hypnotics derived from malonyl urea, and the local anæsthetics related to cocaine. Referring to the first group, he showed that the toxic properties of aminophenol may be reduced and its antipyretic action increased by introducing radicals into the hydroxyl and amino groups. He pointed out the importance of a sufficiently stable combination to resist decomposition by the acid of the gastric juice, as otherwise the radical is split off in the stomach with the production of the parent substance. The practical outcome of these investigations has led to the recognition of phenacetin as the most suitable for medicinal use.

Among the substitutes for salicylic acid as an antirheumatic he mentioned salol (phenyl ester), aspirin (acetyl salicylic acid), and salophen (salicyl acetaminophenol), substances which, being stable towards acid, pass through the stomach unchanged, but are subsequently hydrolysed by the alkaline pancreatic juice, when the constituents begin to exert their specific effect. Passing on to the hypnotics, veronal and sulphonal and their analogues, it was observed that each contains a hypnotic group in which alkyl radicals (R, one of which must be ethyl) are necessary to produce hypnotic action.



Dr. Keane then gave an account of cocaine, the nature of the groups which are responsible for local anæsthesia, and the successful application of this knowledge to the production of new drugs, such as α and β eucaine, orthoform, stovaine, novocaine, holocaine, &c.

The address concluded with a table of statistics giving the quantity of synthetic drugs imported from Germany (the seat of the industry) to this country, which on six drugs alone amounts to about 20 tons, of the value of 16,000*l.* annually.

THE BEGINNINGS OF HUMAN SPEECH.

AN interesting attempt by Dr. C. Täuber to trace human speech back to its first beginnings appears in *Globus* for May 12 (Bd. xcvi.). For this purpose the writer classifies the simplest conceptions and the sounds representing them into six divisions, as follows:—(i.) *m*+vowel, meaning liquid food (e.g. milk, melt, Germ. Ge-müse, &c.); (ii.) *p* (*b* or *v*)+vowel, solid food (e.g. bread, Germ. Futter, Lat. panis, &c.); (iii.) *n*+vowel, sometimes *sn*, fluidity (e.g. Lat. navis, Germ. nass, snow, &c.); (iv.) dental+vowel, sometimes *st*, wood or forest (e.g. timber, Germ. Stuhl, throne, Germ. Tanne, &c.); (v.) liquid+vowel, feeding or drinking place (e.g. Gk. libation, lake, Germ. Loch, &c.); (vi.) guttural+vowel, animal world (cow, Lat. caper, Germ. Hund, &c.).

For each division Dr. Täuber draws up a table of derived ideas represented by the same root-syllable in various Indo-Germanic languages, e.g. under (i.) we find Mama, Germ. Mutter on one side and Germ. Meer, Lat. mare, &c., on the other. From mater, mother, is derived the idea of to feed, and from that, again, the conception well-fed, large. It must be confessed that considerable ingenuity is required to trace the connection in some instances, but the author freely owns to setting forth speculative results.

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It is extremely interesting to note that these six sound-groups appear with the same force in many non-Indo-Germanic languages; for instance, (i.) *m*+vowel in Hebrew manna (food), maim (water), mair (rain), mahl (wine mixed with water); in Bantu languages *ma*=water occurs very frequently in compound words; also in Chinese (in Siamese *n-am*); in the form *mu* in the Ural-Altai languages (Tungus and Manchurian *mu-ke*=water, Japanese *u-mi*=sea, *a-me*=rain); *ma*, meaning water, rain, or drink, is widespread in the Australian, Polynesian, and Malay languages; the Eskimo have the word muk for water. The derived conception *mag*=large occurs in Caucasian, Ural-Altai, and Dravidian languages. Instances from Semitic, Caucasian, and other languages are also given for the other five sound-categories. Dr. Täuber would like to see his scheme worked out and amplified and the *Ursprache* established beyond question, after which it might be possible to ascertain the points at which the great linguistic branches differentiated.

ASSOCIATION OF TEACHERS IN TECHNICAL INSTITUTIONS.

THE annual conference of the Association of Teachers in Technical Institutions was held at Birmingham in the Birmingham Municipal Technical School on Friday and Saturday, June 17 and 18. In his address, the president of the association, Mr. J. Wilson, Battersea Polytechnic, emphasised the importance of scientific and technical education to industrial progress. As an example of this, it was pointed out that, owing largely to the limited appreciation of technical education by the English manufacturing world as a whole, nearly all the chief industrial developments of the last twenty years are either of German, French, or American origin or commercial development. The present national and municipal expenditure on technical education in Great Britain is approximately one and a half millions sterling per annum. This is very small when compared with the "gross" annual output of the engineering and chemical industries alone, amounting to about 258 millions per annum. Mr. Wilson discussed the position of the London polytechnics with reference to the London University. He considered that any diminution in the effective facilities now offered by the polytechnics to the working and lower middle classes to participate, not only in advanced technical education, but in higher and university education, would be a grave retrograde step.

In a paper read at the afternoon session by Dr. Price, of the Birmingham Technical School, on "The relation between the technical school and the university," it was pointed out that, generally speaking, the average technical student, however highly qualified he may be by previous study and experience, cannot possibly attend the university, owing to the high fees and cost of maintenance. In reply to certain criticisms by Prof. Meldola and Sir William Ramsay on the value of evening instruction, it was stated that at the present time many evening students in technical institutions are taking courses in the highest branches of technical knowledge, with advantage to themselves and to the industry with which they are connected. In Birmingham, for instance, there are men holding responsible positions who have received all their scientific training in the evening classes at the technical school. Many drawbacks in the highly valuable system of external examinations of the London University could be obviated if a satisfactory system could be devised by means of which technical institutions of sufficient standing could be affiliated to the local universities. Many of the larger technical schools are well equipped and have a highly trained staff which is able to, and does, carry out research.

A number of general resolutions on technical education were passed dealing with subjects such as:—(a) the co-ordination of education in the primary, secondary, and continuation schools with technical school work; (b) the necessity for the provision of technical education of a more advanced and more highly specialised character than exists at present; (c) technical schools to be allowed to develop their work as highly as local requirements demand; (d) urging upon the Government the desirability of appointing a Royal Commission to inquire into the need for the organisation of technical education throughout the country.