

FORENSIC MEDICINE.

DR. TAYLOR'S REPORT ON THE PROGRESS OF TOXICOLOGY.

(Concluded from page 221.)

A remarkable trial has lately taken place at Chambéry, in which the accused was charged with the murder of the deceased by prussic acid; while, in the defence, it was alleged, that death was owing to apoplexy and not to the poison. (*Annales d'Hygiène*, 1843, p. 103.) The case presents numerous points of interest in relation to medico-legal toxicology; the symptoms and post-mortem appearances met with in apoplexy, as contrasted with those produced by prussic acid; the value of evidence derived from symptoms in cases of poisoning, as well as that obtainable from the period at which death ensues after the supposed administration; the extraordinary chemical errors that are occasionally made in the analysis of poisons, the witnesses in this case imagining that the presence of poison might be inferred from a series of very doubtful or even negative results. The person charged with the crime was very properly acquitted; for there was no medical proof whatever that poison had been the cause of death, while there was direct evidence of death from apoplexy, by the discovery of a large effusion of coagulated blood on the brain. He appears to have owed his acquittal principally to the care bestowed by Orfila, on the examination of the facts of the case.

Oil of bitter almonds. One case of poisoning by this substance has lately occurred, and is reported by Mr. Smith of Clifton, (*Lancet*, June, 1844.) A girl, between 8 and 9 years of age, swallowed about a teaspoonful of a mixture sold by druggists as "ratfia," composed of one part of the essential oil of bitter almonds to seven parts of spirit. The quantity swallowed by the patient was equivalent to about seven drops of the essential oil. With this datum it will be interesting to consider the effects produced by so small a dose. When seen immediately after the accident, there was complete insensibility; the eyelids were closed, but the eyes were brilliant and glassy, without any mental expression; the pupils dilated; no pulse at the wrist; the carotids beating fully and quickly; relaxation of the muscles of the extremities, but the lower jaw was clenched in rigid spasm. Cold affusion with stimulants, stimulating frictions and emetics, were employed. Vomiting was induced, and the ejecta had a strong smell of prussic acid. In about twenty minutes the pulse returned,—the child opened her eyes, and was able to answer questions.

The quantity of prussic acid contained in the oil, and to which its poisonous properties are due, is said to vary from 8 to 14 per cent. The above case shows that in a small dose it may give rise to very alarming symptoms; and it is probable, that but for the active and prompt treatment adopted, this child would have died.

Cyanide of potassium. This salt has of late years caused death in several instances where it has been taken by mistake or in improper doses. A gentleman was killed in France, in 1843, by taking twelve grains of the salt, in consequence of some error in the medical prescription. The physician who ordered the medicine, was tried, fined and imprisoned. (*Lancet*, January, 1843.) Another case occurred at Breslau, in which a man, aged thirty, died in a quarter of an hour after taking a dose of a mixture which had been prescribed for him by his medical attendant, under all the symptoms of poisoning by prussic acid. (*Henke's Zeitschrift der S. A.*, 1843, p. 7.) The mistake here arose from those unfortunate changes periodically made in the nomenclature of pharmacopœial compounds, which constitute a matter of regret among ourselves; for such a practice takes away all certainty from the art of prescribing, and leaves the life of the patient and the character of the practitioner in the hands of a druggist, who may be ignorant of the properties of the medicine which he dispenses.

It appears that until lately the yellow ferrocyanate of potash was known in the Prussian Pharmacopœia under the short name of "kali hydrocyanicum," just as it was formerly called, in English, prussiate of potash, and is now termed ferrocyanide of potassium—an objectionable alteration from the term ferrocyanate, because many dispensing druggists might confound the ferrocyanide with the cyanide, and dispense the poison for the innocent substance. Of late years, in the Prussian Pharmacopœia, the cyanide of potassium has received the name of "cyanum

kalicum," or, improperly, "kali hydrocyanicum." Fifteen grains of "kali hydrocyanicum," in a dose, were prescribed by the physician for his patient, he meaning thereby the ferrocyanate of potash. Instead of this, however, cyanide of potassium was sent, and the patient died in a quarter of an hour. The physician adopted and employed the chemical name which was probably current at the time that he studied his profession. The party who dispensed the medicine was undoubtedly to blame; for it appears that he entertained some doubt about the largeness of the dose, and he ought to have known that a dose of such a compound could not be taken by a human being without certainly destroying life. The energy of the cyanide of potassium as a poison depends, in some measure, on its mode of preparation. Some specimens are so impure as to consist almost entirely of carbonate of potash, from which it may be separated by its ready solubility in alcohol. (See *Annales d'Hygiène*, 1843, p. 404, in which this subject is fully investigated by Orfila.) An opinion formerly prevailed, that the poisonous properties of the salt were destroyed under two circumstances: 1, by exposure to air, in which case it is transformed to carbonate of potash; and, 2, by its being heated, in solution, to the boiling point. In neither case, however, does the salt easily lose its poisonous properties. Orfila found that some which had deliquesced, by exposure to air for a fortnight, still acted as a poison; and the conversion of the salt, at 212°, into ammonia and formate of potash takes place so slowly, under the most favourable circumstances, as not to interfere with this poisonous action. This substance does not therefore become innocuous, as it was formerly alleged, by solution in hot water. I have found by experiment that the ebullition of a solution, continued for a quarter of an hour, produced no sensible quantity of formate of potash.

Accidents such as those above referred to often give rise to charges of malapropos. A case occurred some years since on the continent, in which a physician prescribed three grains of the "auris hydrargyri" for a child. Calomel was then known by the termination "dules," and corrosive sublimate by the termination "corrosivus." The dispenser sent corrosive sublimate, and the dose killed the child. The physician was prosecuted for not having been more precise in his prescription; but it is fair to inquire whether a person who would in such a case send three grains of corrosive sublimate, to be taken by a child, was qualified for the dispensing of medicines under any circumstances whatever. Owing to the numerous changes that have taken place in our own Pharmacopœia, it is somewhat surprising that accidents have not occurred. Corrosive sublimate now differs from calomel merely in the prefix "bi," which might be in some cases overlooked. The impolicy of this change is apparent in the fact, that, on a new edition of the Pharmacopœia, if this system of adaptation to ephemeral chemical theories be adhered to, corrosive sublimate will become "chloride of mercury"—the name now attached to calomel; and this latter substance will become a "dichloride." It is the opinion of some distinguished chemists, that what is commonly called peroxide, is a protoxide of mercury, and the protoxide is a suboxide. All will agree that, for the safety of life, the names of medicines should be certain and unchangeable, and not vary with the fluctuating doctrines of the day; at any rate, it is a most serious result when the name attached to an innocent medicine at one time, should become applied to a powerful poison at another. Among the late "probability theories," as Berzelius terms them, which have emanated from the Giessen school, is one by which, if adopted, the present system of chemical and with it the pharmacopœial nomenclature will be completely overturned. Thus, an entirely new view is taken of the constitution of salts; and it is said that, instead of sulphate of potash being formed of an acid united to an alkaline base, it is the result of a union between a compound radical, formed of sulphuric acid and oxygen with the metal potassium. Pharmacy should be entirely independent of such hypothetical views; and all changes in the names of compounds should be made only for some very strong necessity, and with the greatest caution. It cannot be supposed that every practitioner throughout the empire should have the time, even if he had the inclination, to make himself master of the various speculations which are continually broached by chemists.

NARCOTICO-IRRITANT POISONS.

Cocculus indicus. Some researches have been recently made by M. Chevallier on the effects of this powerful poison. (*Annales d'Hygiène*, 1843, p. 339.) It appears that it has been the prac-