

has been pointed out by Magnan, we may have a febrile or toxæmic delirium superposed upon a true psychosis. Hereditary predisposition is a marked feature in post-operative insanity, so much so that one may deny the possibility of an operation alone causing a psychosis in a healthy subject; at the same time this is no argument for rejecting this class of cases. Gynæcological operations are not more likely to cause post-operative insanity than other operations; the confusion with simple neurasthenia has led to this opinion. The symptoms of post-operative insanity are most variable, and have furnished some justification for denying its existence as a separate form; moreover, in cases where general paralysis and other well-defined psychoses have supervened (or appeared to) upon an operation, we must attribute the occurrence to a mere coincidence. The variation in symptoms, or in the character of the psychosis, arises from the variability in the mental conformation of the patient and the varying predisposition—the all-important factor. The nature of the operation itself is another factor to be considered. The prognosis varies considerably as well as the treatment.

Notes of nine cases are appended. (1) A woman æt. 36, after curetting of the uterus, developed melancholia with delusions of negation, hallucinations, suicidal tendency. Predisposition (hereditary) marked; one cousin insane, father alcoholic. (2) A woman æt. 48, with ideas of suspicion, developed definite delusional insanity of persecution after an operation for removal of a uterine fibroid. In the third case a woman developed symptoms simulating those of general paralysis, etc. The paper, as a whole, is a useful contribution to the study of post-operative insanity, but does but little to clear up the haze which obscures the subject.

H. J. MACEVOY.

4. Treatment of Insanity.

Paraldehyde as a Hypnotic. (*Monats. f. Psych. u. Neur., Dec., 1902.*)
Bumke.

This is a serious study of the claims advanced in favour of paraldehyde as a hypnotic since its introduction into medicine in 1882. The ideal soporific which shall with certainty and without delay secure an untroubled refreshing sleep, approaching natural sleep as nearly as possible; the soporific which shall neither lose its efficacy nor accumulate its effects, and which shall, moreover, be easily dispensed and agreeable to take;—such a drug, like the philosopher's stone, has yet to be discovered. Among soporifics, however, as things are, paraldehyde can claim many virtues, and further experience and better knowledge have only strengthened its position. In the Freiburg Asylum, Dr. Bumke says that paraldehyde has more than held its ground against sulphonal, trional, and hedonal, and that it and scopolamin are now alone employed.

Far too much has been made of the unpleasant taste of paraldehyde, and of the fact that the patient's breath smells of the drug. The severer

strictures on these counts depend probably on the use of impure preparations. Dr. Bumke states that, administered in a peppermint tea strongly sweetened with sugar candy, it is readily taken, and that in respect of the odour of the breath they have had no inconvenience in the wards. Administration in enema form has in general not been found suitable, nor the hypodermic use available, the drug being too irritating.

Clinical experience has for the most part confirmed the teachings of the physiological laboratory, according to which the sensitiveness of the nervous system is in the end of the cerebrum, spinal cord, and medulla oblongata. Only very large doses affect the last named, and of the centres herein contained it is the respiratory which succumbs before the circulatory.

The effective dose in man is on the average not less than 45 minims ; more than 60 minims will rarely be required ; and doses of 75—90 minims gave in Dr. Bumke's experience good results even in the severest forms of excitement. Sleep sets in in from three to fifteen minutes, and is for the most part unaccompanied by symptoms. Descriptions of vertigo, headache, sense of fulness in the head, thick speech, thirst, etc., seem to apply only to observations before 1884, and Bumke considers that they must have been due to impurities, probably to fusel oils.

The duration of sleep is from five to eight hours.

The experience in Freiburg is strongly against an habituation of the system to the drug. It was not necessary to raise the dose. With some exceptions—Albertoni, Berger, Sachs, Daman—this is the general experience. A sedative action on the brain in addition to the hypnotic action has been asserted, and probably exists—it is difficult to demonstrate. Upon the spinal cord the experimental evidence is definite that the functions of the grey matter are diminished—whence the reduction or abolition of the reflexes. Lethal doses of strychnine have thus been overcome in animals by paraldehyde, and two cases of tetanus in man are reported as cured by the same means (Ottavi, Tomasini). With ordinary dosage it is, however, difficult to show this effect. The effect upon sensation is likewise difficult of demonstration in man ; in any case it is inconsiderable.

Upon the circulation the action of paraldehyde has been very thoroughly investigated, and the outcome of very numerous experiments and most extensive clinical observations has been to establish the *harmlessness of paraldehyde even in cases of disease of the circulatory apparatus.*

Upon the blood there appears to be no evidence of deleterious action so long as the doses are therapeutic ; with enormous toxic doses a spoiling of the blood, with development of methæmoglobinæmia, has been noted in animals, in particular in horses. In toxic doses in animals paraldehyde exerts a paralyzant effect upon the organs of respiration, but this is never even hinted at in the therapeutic employment of the drug, not even when the respiratory organs are affected by disease, *e. g.*, in emphysema, bronchitis, pneumonia, and phthisis.

Upon the organs of digestion, the drug has very little action, though many have anticipated an irritant action. Accordingly we may pre-

scribe it with impunity when this tract is healthy. Only in the severest forms of disease of the stomach can paraldehyde be regarded as contra-indicated.

Upon the kidneys there is no appreciable effect; if anything the remedy promotes the flow of urine and acts as a sedative to the urinary mucous tract.

Concerning the toxicology of paraldehyde, no undoubted case of death from a single dose is on record, though as much as twelve to thirteen teaspoonfuls and even more have been taken at one dose, *i. e.*, twelve to thirteen times the ordinary therapeutic dose. There is mention in the *Brit. Med. Journ.*, 1890, of death after six to seven teaspoonfuls of a paraldehyde mixture, but the case was one of enteric fever, and the proofs are entirely wanting, according to Bumke, that paraldehyde was the undoubted cause of death.

Mackenzie (*Virchow-Hirsch's Jahrb.*, 1891, i) records the enormous dose of $3\frac{1}{2}$ ounces with recovery after very pronounced toxic symptoms—stupor, insensitiveness of the pupils, lividity, hurried pulse and breathing.

Chronic intoxication may arise if the use of the drug is long persisted in, but the occurrence is rare, and according to Bumke only ensues when large doses, *i. e.*, 30 grammes (seven to eight teaspoonfuls), are taken. The symptoms in these cases resemble the delirium of alcohol.

From the foregoing it follows that we have in paraldehyde a most valuable hypnotic suitable for all forms of sleeplessness with the exception of that caused by severe pain; that in the usual dose of 45—90 minims it rarely produces either by-effects or after-effects; that it is not contra-indicated by disease of heart or lungs or kidneys, or even of the alimentary tract except in very serious disease of the stomach; finally that to its administration there is no real impediment in the way of taste or smell. (We might add that any difficulties which might occasionally arise on the last count are at once overcome by ordering the drug in gelatine capsules.)

HARRINGTON SAINSBURY.

On the Treatment of Epilepsy by the Toulouse-Richet Method. (Psychiat., Neurol. Wochenschr., Feb. 28th, 1903.) Halmi and Bargaras.

The authors draw attention to the continuous arising of new remedies for and new methods of cure in epilepsy, and the as constant disappointment of our hopes which further trials of the new agents bring. In particular they make reference to the combined opium and bromide cure of Flechsig, which later developments and several recorded cases of death whilst under the treatment have brought into discredit. They point out that the epileptic seizures may, for various reasons, disappear for long periods—two to twenty-nine years, as the more recent statements of Sinkler make clear,—and the futility, therefore, of the attempts to demonstrate the curative value of drugs by observations extending over periods of three to four months, or at the most one year. In spite of these objections, however, they determined to make trial of the Toulouse-Richet method, so strongly had it been recommended.

As will be remembered, this method consists in the reduction of the chloride of sodium in the food (by an appropriate diet) during the time of administration of the bromides; the theory being that under these