THE USE OF ERGOTAMINE TARTRATE IN MIGRAINE

MIGRAINE is an ancient disease. The first clear description of a case appears in the Hippocratic writings[1] and its name is derived from "hemicrania", the term given by Galen in the second century A.D. It has claimed as sufferers many distinguished men, who have thereby enriched our clinical descriptions of the disease, but to the present day its essential nature has remained unknown.

Most theories as to its causation have centred in the idea of a temporary disturbance in the cerebral vascular system. However, two recent critical summaries of the literature of migraine by Henry Alsop Riley[2] and by Vallery-Radot and Hamburger[3] show how little most of the theories will stand the test of criticism. Cerebral physiology is still a new field for experiment, and there is much speculation and very little established fact. Consequently, the treatment of migraine has remained empirical, and the remedies tried cover almost the entire range of therapeutics—psychological, medical, and surgical. It is perhaps remarkable that each method has claimed a considerable degree of success, but only in some hands, and none has contributed towards a fundamental knowledge of the disease itself. The physician cannot therefore be blamed for scepticism when another new remedy for migraine is proposed.

Ergotamine tartrate, one of the alkaloids of ergot, was first shown to relieve migraine headaches by Maier[4] in 1926, and this was followed by several other encouraging accounts in the French and German literature. Lennox and von Storch, of Boston[5] have recently reported their studies of the effects of ergotamine tartrate in 120 cases of long-standing migraine, while other American authors are reporting similar results.

Lennox and von Storch obtained "abrupt and complete cessation of the headache" in 89 per cent of their cases on the first trial of the drug, and on most subsequent trials. They believe that we have now "a non-sedative drug which almost invariably aborts even the worst of migraine headaches". They do not explain why the drug gave no relief in their remaining cases. On repeated use of the drug in later attacks of migraine they found that the free intervals between attacks have not altered significantly in the majority of cases. Ergotamine tartrate may thus be an effective means of aborting individual attacks, but is not to be considered a "cure" for migraine. It is noteworthy that the effect is almost specific, for most headaches of non-migrainous type are not relieved by the drug. They advise the use of 0.5 mg. (1 c.c. ampoule) given subcutaneously or intramuscularly at the onset of an attack, and repeated if necessary. On a first trial, half this dose is advised, and the lowest effective dose for each patient should be determined, as 0.25 mg. or less may be sufficient in some cases. The interval before relief will vary with the method of administration, but in subcutaneous injection this is usually forty-five to ninety minutes. They do not advise oral use except in milder cases, and do not advise continuous daily use in an attempt to prevent attacks.

There are certain definite limitations to the use of ergotamine. Pregnancy and cardiovascular disease are possible contra-indications. Then unpleasant symptoms may follow use of the drug, particularly nausea and vomiting, lassitude, and, less often, muscular pains or substernal sensations, though most of the patients have readily traded these for the relief from pain. The drug is still expensive, a 0.5 mg. ampoule costing about thirty-five cents. In spite of this, if the results of Lennox and von Storch are borne out by wider use of the drug under varying conditions, ergotamine will replace most other drugs in the treatment of migraine, though it will never take the place of thorough investigation of every case, to find and remove possible causes of the attacks.

There remains the important question of the mode of action of ergotamine. If it

1. Epidemics VII. 88. Œuvres Complètes d'Hippocrate. E. Littré, 1846.
2. RILEY, H. A.: Migraine. Nelson's Loose-Leaf Living Medicine Vol. VI., p. 647.
3. VALLERY-RADOT, P. et HAMBURGER, J.: Les Migraines, étude pathogénique clinique et thérapeutique. Masson et Cie. Paris, 1935.
4. MAIER, H. W.: *Rev. Neurologique*, June, 1926, **1**: 1104.
5. LENNOX, W. G. and VON STORCH, T. J. C.: Experience with ergotamine tartrate in 120 patients with migraine. *J. Am. M. Ass.*, 1935, **105**: 169.

relieves migraine headaches so specifically, may it not yield some knowledge of the pathological function which until now has been so successfully hidden within the "vault" of the skull? In man, intravenous injection raises systolic and diastolic blood pressures, and decreases pulse pressure and pulse rate. Lennox, Gibbs and Gibbs[6] have shown that cerebral blood flow is moderately increased, but they do not consider this an adequate explanation for the relief of pain, as certain other substances increase cerebral blood flow to a greater degree but do not uniformly relieve the headache. Their important investigation continues, and it is to be hoped that it will bring new knowledge of this painful and distressing malady, and so lead to a more rational—and successful—therapy.

F. L. MCNAUGHTON.

6. LENNOX, W. G., GIBBS, E. L. and GIBBS, F. A.: *J. Pharmacol. & Exper. Therap.*, 1935, **53**: 113.

Editorial Comments

A Cup of Tea

It is probably safe to say that the average man knows very little about tea. Ask him which has most caffeine in it, coffee or tea, and he will probably say coffee, if indeed he realizes that tea has any at all. He will probably know that tea contains tannin, and that this is brought out by prolonged infusion, but he will not realize that milk completely neutralizes any possible effects of tannin. Nor will he know that tea infused for a long time contains no more caffeine than the infusion of the first few minutes: this is because caffeine is extremely soluble and is very quickly dissolved out of the leaf.

Many medical men also are probably somewhat hazy on the subject. A large literature has grown up around tea since its introduction into England early in the 17th century: Pepys wrote in his diary: "I did send for a cup of tee (a China drink) of which I had never drunk before." But much of this literature has been merely declamatory, both in praise and in disparagement, and although there have been investigations into the qualities of tea these have been scattered. The pharmacologist, the commercial interests, the chemist, the doctor, have all contributed to the discussion, but we have always needed such a clear-cut summary of the medical aspect of tea as has been recently issued by the Tea Market Expansion Board.* The effects of tea, it is shown, are due to (*a*) caffeine, (*b*) tannin, and (*c*) certain volatile oils, about which it may be said at once that they are only present in very small quantities, probably too small to be effective, at any rate not yet investigated. Personal idiosyncrasy must also of course be included. The ordinary cup of tea contains no more than between one and two grains of caffeine. The amount of tannin will depend on the length of time the tea has been infused, and also on the kind of tea, green tea containing more than black. In ten minutes tannin is produced in noticeable quantities, but careful observations show that under ordinary conditions the first effect of tannin is to stimulate gastric secretion, and the heightened acidity thus produced neutralizes the astringency of the tannin. More important perhaps is the fact already mentioned, that the tannin is completely nullified by milk, which forms an insoluble compound with it. It may also be noted that tea tannin bears no close relationship either in composition or action to the tannic acid of the pharmacopœia.

Both clinical and laboratory investigations seem to completely justify the conclusion that the few ill effects that may come from tea are the results of excessive consumption and bad preparation, and of these we presume no more need be said. We can only add that this booklet contains attractive recipes for new ways of making tea that might well be sufficient temptation to err in the first-named direction.

H.E.M.

* Report of Clinical and Laboratory Investigations on Tea, 1934, prepared for the International Tea Market Expansion Board.

Joseph Colt Bloodgood, B.Sc., M.D.

His many friends in Canada as well as elsewhere will regret greatly the passing of Dr. Joseph Colt Bloodgood, who died suddenly on October 22nd from coronary thrombosis. He was Adjunct Professor of Surgery and head of the Laboratory of Surgical Pathology of Johns Hopkins University, Baltimore.

Doctor Bloodgood was born at Milwaukee on November 1, 1867. He was a Bachelor of Science of the University of Wisconsin and a Doctor of Medicine of the University of Pennsylvania (1891). In 1892 he served as assistant resident surgeon at the Johns Hopkins Hospital and then went abroad for study. On his return in 1893 he became resident surgeon at Johns