LETTERS TO THE EDITOR

The Cephaëline Content of Emetine Hydrochloride

SIR,—The B.P. 1948 requires emetine hydrochloride to contain not more than 1 per cent. of cephaëline and the U.S.P. XIII not more than 2 per cent. The cephaëline content of emetine hydrochloride may conveniently be determined by the well-known process for the separation of neutral and basic substances from phenolic bodies. A solution of the salt is treated with sodium hydroxide solution, and the emetine is extracted with an organic solvent after which the aqueous layer is made acid and then made alkaline by the addition of a slight excess of dilute ammonia solution. Any cephaëline is then extracted with an organic solvent and the extract, after washing, evaporated to dryness when the residue is weighed. The essential features of this process have been adopted both by the B.P. 1948 and the U.S.P. XIII but whereas the former uses chloroform as solvent the latter employs ether. It has been found in our laboratories that when emetine hydrochloride is examined for cephaëline by using chloroform none or practically none is ever found, but that the presence of cephaëline is nearly always indicated when ether is used. To investigate this discrepancy, we added 10 per cent. of cephaëline hydrochloride [Found on dried material C, 61·99, 61·91; H, 7·57, 7·68; MeO, 17·24, 17·34; $C_{28}H_{38}O_4N_2$, 2HCl. C, 62·3; H, 7·5; MeO, 17·25 per cent. $[\alpha]_D^{20°C.}$ +27·1° (*c.*, 4·496 in water). Loss at 120°C., 12·70; 12·50 per cent.] to emetine hydrochloride and estimated the cephaëline in the mixture by the two processes. The results were—using chloroform, cephaëline nil; using ether, cephaëline 80·5 per cent. recovery.

The experiment was then repeated using pure cephaëline hydrochloride when the following results were obtained:—using chloroform, cephaëline 1 per cent. recovery; using ether 94·6 per cent. There is no doubt that chloroform extracts cephaëline from solutions made alkaline with sodium hydroxide, and ether is a much more satisfactory solvent for this test.

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ABSTRACTS (*Continued from Page* 195)

trichloroethylene vapour in air daily, except on Sundays for 12 days. Three animals died during the first inhalation of the mixture but the remainder survived except that during the 9th, 11th and 12th exposures one mouse died. A similar experiment was carried out with 1·5 per cent. trichloroethylene, and in this experiment none of the animals survived the eighth inhalation. Trichloroethylene is thus shown to be a potential poison to mice; further, their sensitivity to the drug seems to increase with repeated exposure. The animals appear to die because the drug increases the rate of respiration until ventilation becomes inefficient. In the doses used in this study there was no toxic action on the liver or kidneys. The importance of these findings to clinical anæsthesia is that they emphasise the desirability of giving plenty of oxygen to patients who develop tachypnœa as a response to trichloroethylene, and that they confirm the previously made observations that the drug has no serious toxic effects on the parenchyma of liver and kidneys of healthy mice even when administered repeatedly in anæsthetic concentrations for an hour. S. L. W.