was no intention of questioning the underlying principle or the validity of the technique. We merely wish to place on record that we disapprove of the practice of publishing results before publishing the validation of the method used to obtain them.

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J. S. DAVISON

D. M. HAY

DOES NITROUS OXIDE HARM THE DENTIST?

Sir,—Ever since Bruce and his co-workers suggested a link between the pollution of operating-theatres with anaesthetic gases and causes of death in anaesthetists there has been concern over the problem. Halothane has been the main object of this concern but nitrous oxide is not innocuous. Lassen and his colleagues have reported severe bone-marrow depression after prolonged nitrous-oxide anaesthesia, and the gas has also been shown to be teratogenic under experimental conditions. This latter effect may be associated with an increased spontaneous-abortion rate in female doctors and nurses. Pollution of the dental surgery with anaesthetic gases is also common. Levels of halothane have been found to be high, and were highest in the region of the dental surgeon’s face.

Today there is an upsurge in the use of nitrous oxide as a means of sedation in dentistry. It appears safe for the patient who inhales it over a short time. But is it safe for the dentist and his staff who may inhale it over a long period?

As part of our investigation of the problem we have exposed albino rats to a 1% level of nitrous oxide for six hours per day, five days per week. This pollution level is equivalent to that reported in a dental surgery by Millard and Corbett, and the exposure-time fairly closely mimics a typical dentist’s day when using nitrous-oxide/oxygen sedation (relative analgesia).

After nine weeks' exposure no difference was found between the haematological appearances of the peripheral blood in experimental and control animals. However, after five weeks' exposure to nitrous oxide there was a marked increase in the numbers of mast cells, particularly in the bone-marrow, in a typical dentist's day when using nitrous-oxide/oxygen sedation (relative analgesia).

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