



Correspondence

Malta

Professor George Camilleri of the University of Malta is tracing the British connection with the development of dentistry there, and would like to hear from any dentist who has worked in Malta either during service in the armed forces or in any other capacity. If you have, he would like to know the dates, and would be particularly interested in any relevant photographs. George can be contacted through the Newsletter editor.

Nitrous Oxide

A R Butler from the Bute Medical School, University of St Andrews writes:

It is possible to add a little extra to Rufus Ross's note about nitrous oxide in the last Newsletter. Identifying the discoverer of nitrous oxide is difficult because of early confusion concerning the nomenclature of the oxides of nitrogen. There are at least five oxides of nitrogen but only two need concern us: nitric oxide (NO) and nitrous oxide (N₂O). In the eighteenth century gases were known as airs. Joseph Priestley knew from the work of others that copper metal reacts with nitric acid to release an 'air'. He devised means of collecting and characterising this air and he called it iron. This gas was converted into another gas that he called 'dephlogisticated nitrous'. This cumbersome name is derived from the notion of a 'principle of burning' or phlogiston, a notion that was soon to be discredited by the French chemist Antoine Lavoisier. The second gas we now call nitrous oxide. Priestley also made impure nitrous oxide by the reaction of zinc or tin with nitric acid. The modern way of making nitrous oxide, by heating ammonium nitrate, was discovered by the Dutch chemist Johann Deiman in 1793.

Deiman tried the effect of nitrous oxide on mice and obtained confusing results. Its effect on human was investigated by an English physician Peter Mark Roget, (later to achieve greater fame for the composition of a thesaurus of the English language). He sent his results to Davy, who made further experiments and included his observations in his book of 1800, "Chemical and Philosophical Researches concerning Nitrous Oxide". He notes that after breathing 15 quarts of the gas "I danced about the laboratory as a madman".

After the hilarity nitrous oxide induces sleep but there are unpleasant after effects and it is now rarely used medically. (1) In contrast, the other oxide of nitrogen mentioned previously, nitric oxide, has, in recent years, acquired a fame that totally eclipses 'laughing gas'. In 1992 the journal "Science" designated nitric oxide molecule of the year because of its extensive role in human physiology. It is rather important not to confuse nitric and nitrous oxides.

(1) Nitrous Oxide is in fact still in current use as the main agent in most inhalational anaesthetics after induction with intravenous agents, and also with Oxygen in inhalational sedation - Ed.