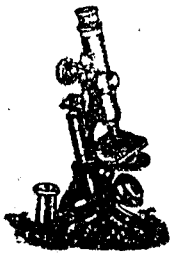
Medical Matters.

A NEW ANÆSTHETIC.



A new anæsthetic, called by its discoverer Dr. Fourneau (a Frenchman), Storaine, otherwise Chorohydrate of Dimethylaminobenzoylpentanol, is said to produce complete anæsthesia, when injected into the spinal fluid, without loss of consciousness. English surgeons, however, view with some disfavour an agent which must be introduced by this method, and over which, when once injected, they have no control.

THE STERILISATION OF CATGUT.

M. Albert Petit, in the *Journal de Pharmacie et de Chemie*, gives the results of his work on the various methods of sterilising catgut. Maceration of the gut in carbolised oil was found to be impracticable because the process takes one year for complete sterilisation and the product is slippery to the touch. Dipping in a solution of nitrate of silver until the gut was blackened and the method of sterilising in a dry heat at 150 deg. C. both gave a hard gut which was difficult to tie. Acetone was not found better for the purpose than absolute alcohol, and was rejected owing to its unpleasant odour. The English method of dipping the gut first in formaldehyde and then in boiling water for a time depending on the thickness of the gut is, in the opinion of M. Petit, too complicated a process to be above reproach. He has found the absolute alcohol method to be the surest and the most practical. The actual sterilisation is first effected by gradually heating the gut to 130 deg. C. for half an hour. It is then quite free from water and as a result somewhat brittle, but just before use it is placed in sterilised water or in any antiseptic solution, when it takes up water and regains its suppleness, elasticity, and firmness, and may be depended upon as a perfectly sterile suture.

THE EFFECT OF COLD ON BACTERIA.

According to a contemporary, experiments made some two years ago by Professor Alan McFadyen in freezing bacteria showed that many of them were quite uninjured by the lowest temperatures that Sir James Dewar was able to produce. The subject has been taken up by the United States Department of Agriculture, and a number of species have been subjected quantitatively to variations of low temperature. Some bacilli proved much more susceptible to cold than others; but, generally speaking, one may say that if the bacilli could survive the degree of cold attained by salt and pounded ice they could live through temperatures as low as that of liquid air. Indeed, it was quite credible from the experiments that survival of the first tests would indicate that even the temperature of absolute zero would leave the bacillus free to resume its ordinary activities when the conditions again became normal. In most of the cultures of bacteria that were tested some survivors remained after subjection to the cold of 190 deg. Centigrade; but they could be reduced in number by successive thawings and freezings. The general conclusion reached, however, was that the bacteria exhibit almost as much variability in their susceptibility to cold as the higher plants and animals. The idea that bacteria in general are not harmed is untenable. Those bacteria that are not harmed probably owe their immunity to the absence of water from their cells. But probably an enormous number of bacteria are killed by the cold of an ordinary winter.

Arising out of the experiments with frozen bacteria a new method of obtaining the poison of those bacilli whose poisons are intracellular was devised by Professor Alan McFadyen. This method, which has been described in the *Morning Post*, consisted of freezing the bacteria to the temperature of liquid air and then grinding the brittle mass with a sort of steel pestle. The instrument, which is in use at the Lister Institute, is very useful for obtaining the intracellular poison of the typhoid bacillus, but though a blood serum has been prepared from it by inoculating typhoid-immune animals with this poison, the results are still in the experimental stage. In the University of Michigan has been tried a method of isolating the intracellular poison of the typhoid bacillus. It consists in drying a quantity of typhoid cell culture, pulverising it, and heating in a condenser with sodium alcoholate. By this means the cell substance is split into a poisonous portion which is soluble in alcohol and a non-poisonous portion which is insoluble. From the former of these two preparations the typhoid poison is filtered and precipitated, and it is said that a serum has been prepared from it. Whether it will be any more successful than that prepared by Dr. McFadyen remains to be proved.

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