

anaesthetic but by using solutions which are non isotonic with the blood.

Inject a quantity of distilled water into the tissues and you produce a very severe pain followed in a few minutes by a partial anaesthesia, which in turn is followed by a severe so called after pain which continues for some hours. The same symptoms are produced if a too concentrated solution is injected. On the other hand a normal saline solution produces no pain, no anaesthesia nor any after pain. In other words the normal saline solution is inert as far as the tissues are concerned while the other solutions, more or less severely damage the tissues, which damage is expressed by the pain they produce.

All anæsthetic fluids must contain active adrenaline and be made up with normal saline. These requirements reduce the large list of local anaesthetics, now on the market to two desirable ones, as all the others render adrenaline more or less inert. These two are our old friend cocain and the recently produced Novocain. Novocain has many and great advantages so that wherever introduced, it has replaced all other local anaesthetics. The advantages consist in: *First*, a much lower toxicity. (Solution of Novocain can without harm be directly injected into veins.) *Second*, greater stability (solution can be sterilized by boiling without deterioration.) *Third*, greater diffusability.

Novocain solutions are as sensitive to sodium salts as are those of cocain and therefore instruments and utensils which come in contact with the solution must not be boiled in Soda. Recently a synthetical substance called homorenon, having the same physiological action as adrenoline but not deteriorated by boiling has been introduced. Novocain homorenon tablets are on the market and are extremely useful.

All reported cases of gangrene following the use of a local anæsthetic have resulted from using old solutions. All solutions must therefore be freshly prepared and the above mentioned tablets readily lend themselves to this end. Unfortunately none of these substances have been properly introduced into Canada, so that at present they are a little difficult to procure. The ordinary formula for infiltration is:—

"Cocain .1 gramme or Novocain .5 gramme

Adrenaline 5 drops of the 1-1000 sol.