

## ON THE USE OF OXALATE OF ALUMINA IN THE PURIFICATION OF SUGAR.

M. MIALHE has proposed a process for separating the lime remaining in combination after being used in the manufacture of sugar, which is founded on the property possessed by oxalic acid of completely precipitating the alkaline earth from its solutions.

The oxalic acid is used in combination with alumina, as oxalate of alumina, so that while the acid forms an insoluble compound with the lime, the alumina, which is also insoluble in the syrupy solution, carries down with it all the colouring matter of the impure sugar.

This process, should it prove economical, will possess advantages over that consisting in the use of charcoal, as it ensures the entire separation of the lime, which the other does not.—*Journal de Chimie Médicale.*

## CHROMATE OF CHROMIUM.

BY M. RAMMELSBERG.

WHEN solution of chrome alum is mixed with solution of neutral chromate of potash, a reddish-brown colour is at first produced, and afterwards a brown precipitate is formed in a very yellow liquid.

This precipitate dissolves in hydrochloric acid, forming a yellowish-green solution; ammonia precipitates oxide of chromium from it, leaving chromic acid in solution. Digested with potash, it readily yields chromate of potash and oxide of chromium.

The following formula represents its composition:—



*Journal de Pharmacie.*

## ANIMAL MAGNETISM SUPERSEDED.—DISCOVERY OF A NEW HYPNOPOIETIC.

WE learn on the authority of a highly respectable physician of Boston, U. S., that a Dr. Morton, a surgeon-dentist of that city, has discovered a process whereby in a few minutes the most profound sleep may be induced, during which teeth may be extracted, and severe operations performed, without the patient being sensible of pain, or having any knowledge of the proceedings of the operator. The process simply consists in causing the patient to inhale *the vapour of ether* for a short period, and the effect is to produce complete insensibility—or, as the writer says, intoxication. We quote the following case on the same respectable authority:—"I took my daughter last week to Martin's rooms to have a tooth extracted. She inhaled the (vapour of) ether about one minute, and fell asleep instantly in the chair. A molar tooth was then extracted without the slightest movement of a muscle or fibre. In another minute she awoke, smiled, and said the tooth was not out, had felt no pain, nor the slightest knowledge of extraction. It was an entire illusion."

\*.\* The facts are here so candidly stated that any one may put the new process to the test of experiment. Dr. Morton has made no mystery of his proceedings, like the tribe of hypnotic quacks who have lately perambulated the country. Some caution must, however, be observed in employing the vapour of ether in the way suggested. Ether is a strong narcotic, and its vapour speedily produces complete lethargy and coma; it is exceedingly volatile, and rapidly absorbed and diffused through the body, especially when brought into contact with the extensive surface of the air-cells of the lungs.

In one case it has destroyed life, and in another caused apoplexy. Thus an individual may not awaken so readily as the young lady whose case we have here quoted.\* It must be regarded as producing a state of temporary poisoning in which the nervous system is most powerfully affected; and, as in concussion or narcotic poisoning, sensibility may be so destroyed that operations, which in the healthy state would occasion severe pain, may be performed without any consciousness on the part of the patient. The respectability of the source from which we derive our information prevents us from doubting that the writer has accurately described what he saw. The awakening exactly *one minute* after the operation must of course be regarded as an accidental circumstance, depending on the dose of ethereal vapour inhaled. One statement, however, appears to us to require explanation. We can understand the production of insensibility and the temporary loss of consciousness from the effects of ether; but we do not comprehend how, when the individual was perfectly roused to consciousness, there could be the slightest doubt as to whether the tooth was in or out of the mouth! All who have undergone this operation know that from the imperfect sense of touch possessed by the tongue, that the gap occasioned by the loss of a tooth appears about ten times as large as it really is. Then, again, we can believe that no pain might be felt during the operation; but how can any narcotic annihilate pain *in futuro*, when its effects on the nervous system have entirely ceased? Ordinary sleep often produces a temporary loss of sensation of pain; but this immediately returns in the waking state.

\* We have since learned, from another quarter, that the respiration of the vapour in the manner described has been tried in numerous cases without the occurrence of any accident.—*Medical Gazette*, pp. 1085, 6.

[Many years ago, when experimenting on nitrous oxide gas, we became acquainted with the effects of ether when inhaled. The supply of gas being exhausted, a teaspoonful of ether was introduced into the bladder and inhaled in the same manner. Several persons present tried the experiment, and the result in most cases resembled that produced by the gas. The action of the ether is however more sedative. During the first two or three inspirations the pungent taste of the ether is perceived, after which a peculiar kind of exhilaration is felt, which increases until external objects are no longer observed, and a state of coma ensues, which continues for a few minutes. The sensations are very much like those produced by inhaling the nitrous oxide, and the result resembles that of spirits when taken into the stomach, with this exception, that it subsides much more speedily, and produces less depression afterwards.—Ed. Ph. J.]

#### THE SEDATIVE EFFECT OF ETHER TESTED IN THE OPERATING THEATRE OF THE NORTH LONDON HOSPITAL.

SINCE the above was in type, we have been favoured by Mr. Ransome, the house-surgeon of the North London Hospital, with the particulars of the following cases:—The first is that of Frederick Churchill, a patient, who had been for some time in the hospital with a disease of the knee-joint. Amputation being found necessary, he was taken into the operating theatre for that purpose at two o'clock on Friday, the 18th of December.

The vapour of ether was inhaled by means of a vessel resembling an ordinary inhaler. At first the patient appeared not to understand the method of effectually inhaling the vapour into his lungs; but as soon as this was pro-

perly explained, two or three complete inhalations produced a state of unconsciousness. As soon as this was observed, Mr. Liston lost no time in amputating the limb, and the patient was removed to his bed insensible of pain, having been in the theatre very little more than five minutes, including the time occupied in inhaling the ether, as well as the subsequent tying of the arteries. It is a curious circumstance, that the patient replied to several questions during the operation, but afterwards, on being interrogated, declared that he had suffered no pain at the time.

When consciousness returned his first remark was that he felt cold, and his subsequent sensations are described as being similar to those of patients under ordinary circumstances after a similar operation. When the stump was dressed ether was not inhaled, as it was considered unlikely that the effect would continue a sufficient length of time.

The second case was that of an out-patient, who had a painful operation performed on his toe, while under the influence of ether, and apparently insensible. He afterwards described his sensations as having been peculiar, but not attended with pain. The subject will be further investigated at the North London Hospital.

We have been informed that some experiments have been made at other hospitals, but hitherto with less marked success than in the above cases.

### APPARATUS FOR INHALING ETHER.

MR. SQUIRE has contrived an apparatus for this purpose. It resembles a Nooth's apparatus — a sponge wetted with ether being placed in the upper part, the vapour being heavier than atmospheric air, descends through the tube to the lower vessel, to which is attached a flexible tube and mouthpiece. In this tube there is a valve to prevent the expired air returning into the vessel. Mr. Squire informs us that the ether should be washed with water in order to purify it.

The apparatus used in America was more simple, being more like an ordinary inhaler, with the valve in the tube near the mouthpiece. A common Mudge's inhaler, with the addition of the valve, would answer the purpose, in the absence of Mr. Squire's improved apparatus.

The old plan of introducing a teaspoonful of ether into a bladder or silk bag, and inhaling it in the same manner as nitrous oxide gas, is not nearly so effectual as the above; since the same air is inhaled repeatedly, either with small additions, which dilute the ethereal vapour, or in a vitiated state, without the requisite oxygen.

By means of the above apparatus, the supply of ethereal vapour mixed with a due proportion of fresh atmospheric air, is constant, and the effect is more uniform and speedy.

We are informed that Dr. A. T. Thomson has been in the habit of exhibiting to his class the effects of ether when inhaled, in order to demonstrate the analogy in its effects with that of the nitrous oxide gas. The practice has recently been discontinued, as it was found to irritate the lungs of some persons, and in one case produced inflammation. Mr. Squire considers that this arose from the ether not having been previously washed with water.

