

Let the last eleven words (italics my own) of this quotation, then, for the time being, explain how it is that 20 or 30 minim doses of the tincture of the chloride of iron abort coryzas.

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ACTION AND USES OF CROTON-CHLORAL HYDRATE.

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I have the honor of directing attention to a new remedy, which serves to corroborate the theory I have propounded with respect to the action of hydrate of chloral.

When chlorine gas acts on aldehyde, croton-chloral is formed, as has been demonstrated by Dr. Krämer and Dr. Tinner. In order to avoid a mistake which is apt to be caused by the name, I must here remark that this body possesses no relation whatever to croton-oil, although its chemical constitution proves it to be the chlorated aldehyde of crotonic acid. Croton-chloral differs in its outward appearance from hydrate of chloral, differs widely from the latter with regard to its physiological effects. Four *grammes*, or a drachm, of this substance, dissolved in water, and introduced into the stomach, produce in the course of from fifteen to twenty minutes a deep sleep, accompanied by anæsthesia of the head. Whilst the eyeball has lost its irritability, and the nervus trigeminus shows no reaction whatever on being irritated, the tone of the muscles remains unaltered.

I have experimented with this remedy on maniacs during an attack of mania. They remain quietly sitting on their chairs in a deep sleep, their pulse and respiration being unchanged for two whole hours together. If anæsthesia had reached so high a degree in consequence of the application of hydrate of chloral, the patients would have dropped from their chairs, and both their pulse and respiration would have been considerably retarded. I have seen croton-chloral acting in the same way on healthy individuals. In some cases of tic douloureux, the remarkable phenomenon is exhibited that pain ceases before sleep sets in. I am sorry to say, however, that this remedy acts only as a palliative in this dreadful disease. I nevertheless prefer its action to that of morphia, because it has effects as good as the latter remedy, without being so detrimental to the constitution in general. I have never observed any unfavorable effects of croton-chloral on the stomach or any other organ, although I have made frequent experiments with it.

The indications for the use of this remedy are to be found—1. In cases where hydrate of chloral is inapplicable on account of heart-disease; 2. In cases of neuralgia in the district of the nervus trigeminus; 2. In cases where very large doses of chloral are necessary to produce sleep. I there recommend the addition of croton-chloral to hydrate of chloral.

Whilst examining the difference between the action of hydrate of chloral and that of croton-chloral. I have discovered the remarkable fact that it is not

the first, but the second, product of decomposition of the latter substance which is brought into action, on account of the first being rapidly destroyed. Croton-chloral, when subjected to the influence of an alkali, first forms allyl-chloroform, a trichlorated body, which is rapidly decomposed into a bichlorated substance which is called bichlor-allylene. Now, both chloroform and trichlorated substances act, as I have shown, in their first stage on the brain, in the second on the spinal cord, and in the third on the heart. The retardation of respiration is to be explained by the agency of these substances on the last mentioned organ. Bichlorated substances act differently, as is proved by bichloride of ethylene. Even if the circulation of the blood in an animal have been stopped by this latter agent for one minute, life may be restored by artificial respiration, which is impossible whenever trichlorated substances have produced this effect, in which case the muscles of the heart remain paralyzed. Well, in animals poisoned by croton-chloral to such a degree that both circulation and respiration are stopped entirely, artificial respiration is able to restore the action of the heart immediately, and the life of the animal may thus be saved. Bichlor-allylene, inhaled by the lungs, produces the same effect on animals as croton-chloral. We thus see these bichlorated substances acting on the brain, spinal cord, and medulla oblongata, but not on the heart, which explains the fact that both respiration and circulation remain unaltered in a man by a medicinal dose. It is a highly interesting fact, however, that under favorable conditions, we still are able to produce in animals the effects of the first product of decomposition of croton-chloral—i. e., of the trichlorated substance or of allyl-chloroform. In order to observe these effects, it is necessary to introduce immense doses of croton-chloral into the body, when paralysis of the heart actually does ensue.—*From the British Medical Journal, Dec. 20, 1873.*

THE APPLICATION OF COLD IN SCARLET FEVER.

Dr. George Bayles says, in the *New York Medical Journal*:—The extraction of heat by the application of cold is a recognized principle in practice, and the extraction of superfluous heat by the application of a heat-absorbing agent of any description, would not violate the principle. Through my friend, Dr. James R. Leaming, I have been made acquainted with the wonderful heat-absorbing properties of *theobroma* (cocoa-butter). I do not venture too much when I say that, for its refrigerent action in fevers of the major kind, it is an agent cognate to ice water. Its application must be frequent and lavish all over the cutaneous surface. It is absorbed so rapidly that a considerable time is required to so modify the general surface heat that any of it will remain upon the skin, thereby showing (when that is accomplished) the skin to have become, for the time being, supersaturated. The effect upon the patient is agreeable beyond expression, and I hope to see it supersede all other forms of inunction. That tossing violence of unrest and