ON A
NEW PREPARATION
OF
CROTON TIGLIUM.

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COMMUNICATED BY MR. EARLE.

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IT is now some years since the expressed oil of croton tiglium was introduced into Europe as a medicine, and during this time its effects have undergone considerable investigation, both in this country and on the continent, the general result of which has been so far satisfactory as to obtain for it a place in the *Materia Medica* of the London College of Physicians. The article commonly in use is known by the name of Croton Oil, and is a highly drastic purgative, hot and pungent on being swallowed, and producing great and painful irritation on the mouth and fauces, which continues sometimes for many hours. It is generally admitted to be a medicine of the greatest efficacy, but considerable difference of opinion exists as to its specific action, and the precise cases in which it may be most advantageously employed. This

uncertainty principally arises from an improper mode of preparing the oil, which has hitherto been by expressing the entire seeds; but from numerous experiments I have found that the husk or shell of the seed, and more especially the epidermis or coat more immediately enveloping the kernel, contain that acrid irritating property, which forms the principal objection to the use of the tiglium oil, while from the medulla alone of the seed a perfectly safe and efficacious purgative may be obtained.

The medulla is universally employed in India in SUBSTANCE, as the ordinary purgative of the natives, and their mode of employing it is, by carefully separating the husk and epidermis, and also by taking out the eye of the seed, or, more correctly, the rudiments of the seminal leaves, in all of which the acrid principle intensely resides. The medulla thus prepared is then mixed with a native preparation of antimony, and formed into pills; one seed, weighing from two to three grains, being sufficient for as many doses. This mode of employing the seed in India was detailed to me by a medical friend who was nearly twenty years resident there; and as it agrees with the results of my own examination, I have been induced to subject the seeds to a similar preparation, and have by that means obtained an oil, which I submit with some confidence to the medical world. The dose is from one to two drops, either formed into

pills, or diffused by means of egg or mucilage in a small quantity of fluid.

The best mode, however, of exhibiting the oil is by dissolving it first in a little alcohol, in the proportion of about one drop to half a drachm, in which state it may be more easily diffused in some simple fluid ; for by acting on an extended surface, the purgative effect is more speedily insured. This fact has been fully established by the successful exhibition of the *alcoholic tincture* of the seeds. The particulars of a case have been obligingly furnished me by Mr. Tucker, in which a dose of this tincture produced a speedy action of the bowels, after a violent constipation of nine days, which had resisted every other means. The following was the form in which it was administered.

Take of the

Alcoholic Tincture of Tiglium Seeds, 25 minims,
Compound Powder of Tragacanth, one drachm,
Distilled Water, one ounce ;
Mix, and form into a draught.

The draught acted in about an hour and a half, unattended by vomiting or any unpleasant symptoms.

The alcoholic tincture has been successfully employed in various other instances, particularly in the case of children. It affords great fa-

cilities of giving this medicine in small doses. The following is the form for its preparation.

Take of the

Seeds of *Croton Tiglium* carefully deprived of the husk and epidermis, and bruised, two ounces,

Alcohol (sp. grav. 836°.) twelve ounces ;

Digest for six days, and strain. The dose of the filtered tincture for an adult is about 20 minims.

The oil of *tiglium* is soluble in æther, and in oil of turpentine. It is only partially soluble in alcohol, which dissolves rather more than two thirds of it, but takes up the whole of the purgative principle, the residuum exerting little or no action on the intestinal canal.

The acrid property of the epidermis is of a very peculiar nature. It is scarcely at all acted upon by alcohol or æther. In the latter menstruum, after it had been digested for some weeks, not more than one part in thirty was taken up, and very little more by alcohol. It gives out its acrimony, however, readily to oil of turpentine, and also to olive oil, especially if assisted by heat. On applying a small quantity of these solutions to the tongue, they appear at first to be almost tasteless, but after some minutes a burning heat is felt in the

mouth and fauces, which continues with increasing violence for many hours, producing in some instances nausea and vomiting. By lightly rubbing on the skin a little of the solution of the epidermis in oil of turpentine, after it has been concentrated by evaporation, a pustular eruption is produced similar to that caused by the use of tartrate of antimony ointment. When given to animals in powder, a few grains commonly produce vomiting, followed by purging, and accompanied by great heat and itching of the rectum. It is found, that even in weighing or bruising the seeds, the dust which is dispersed in the atmosphere occasions violent irritation of the mucous membrane of the nose. Its inhalation should therefore be carefully avoided.

Five or six grains of the kernel of the seed introduced into the stomach of a dog invariably produces abundant watery evacuations in one or two hours, and oftener in a much shorter time. The same effects are produced if one or two drops of the oil be applied to the tongue, or injected into the rectum. It does not usually cause vomiting unless in excessive doses. In several cases the animals were killed after the exhibition of the oil in doses sufficient to produce the purgative effect, but no traces of inflammation presented themselves.

With regard to the effects of the epidermis alone, I regret that the experiments I have hitherto made

have not been conclusive, owing to the readiness with which it was uniformly rejected from the stomach. Future attempts, however, may probably be more successful. Some interesting cases of dissection after the exhibition of croton tiglium, accompanied with a variety of remarks on the use of this medicine, have lately been published in Paris, by W. E. E. Cornwell, M.D., to whose paper I would beg to refer all who are interested in this subject.

It is a fact deserving of mention as of some importance in a pathological view, that croton tiglium is admitted, after ample investigation, by several veterinary surgeons of eminence, to be the best known purgative for horses, as it acts with uniform effect, and without griping and irritation, which are the usual attendants on the use of aloetic purgatives. I am much indebted to Mr. John Field for the facilities which he has afforded me in prosecuting this part of the inquiry, and for the great attention it has received at his hands.

I beg in conclusion to say, that it is my intention to follow up the investigation of this subject, with a view of obtaining the peculiar acrid principle of tiglium in a detached form ; and if my attempts should be successful, I shall have the honour of laying the results before the Medical Profession.

96, Oxford Street,
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