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The Author

VERATRUM VIRIDE.

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*Reprint from the Transactions of the Medical Society of the State of Tennessee,
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Mr. President and Gentlemen of the Tennessee State Medical Society:

THIS paper is not intended to be an exhaustive treatise on the subject, but a short, practical article on the physiological action and therapeutic properties of veratrum viride, or American Hellebore.

The writer believes that a great many practitioners do not appreciate the value of veratrum. He is sustained in this statement by the fact that in reports of proceedings of leading medical societies, it is sometimes noticed in the discussions on the treatment of diseases in which veratrum is pre-eminently useful, this remedy is not mentioned. The same may be said of articles contributed by prominent practitioners to leading medical journals, and also of some of the textbooks.

To those who are practically acquainted with the therapeutic powers of veratrum, it seems strange that a remedy capable of accomplishing so much should not be in general use fifty years after its introduction. The earliest record of the use of veratrum that the writer has any knowledge of is by Dr. Bayard, of Savannah, Ga., who prescribed it for rheumatism in 1811. About 1815, Dr. William Tully, of New Haven, Conn., used and recommended it for rheumatism and other diseases. About twenty years later, Dr. Charles Osgood, of Providence, R. I., advocated its use; but little attention was given to it, however, until it was brought forward more prominently by Dr. W. C. Norwood, of Cokesbury, S. C. Dr. Norwood claims that he is entitled to priority in the use of veratrum as a cardiac sedative. According to his own statement, he first prescribed it in a case of pneumonia in July, 1844. From about 1850 to 1870, he repeatedly brought it into public notice through the medical press.

Perhaps the most elaborate and able, as well as the most practical, treatise on veratrum is a contribution to the American Medical Association by Dr. S. R. Percy, of New York, in 1864.

Among the records of this Society is a valuable contribution on the use of veratrum in the treatment of peritonitis by our honored ex-

President, Dr. Thomas Lipscomb, of Shelbyville, Tenn. He also contributed an article on the same subject to the *Nashville Journal of Medicine and Surgery* in April, 1867.

Dr. H. C. Wood, of Philadelphia, has published valuable information on the action and use of veratrum in medical journals and in his Treatise on Therapeutics.

The above-mentioned literature embraces only a small portion of the valuable publications on veratrum.

The drug is the root of an herb that is indigenous to America. It contains a resin and two alkaloids, jervia and veratroidia. Experiments have been made by Wood, Percy, and others as to the physiological effects of the resin and alkaloids. The resin is said to be inert, and the alkaloids are each both spinal and cardiac sedatives, but differ in other minor physiological effects. The sum of the effects of the two alkaloids is about the same as that of the root, so that the veratrum is the most satisfactory for use.

The most characteristic effect of veratrum is its power to control the cardiac movements. "It lowers in a remarkable manner the number and force of the cardiac pulsations." The pulse may be reduced from 120 or more to 70, 60, 50, or lower, at the same time that the force is decreased. Under its influence the blood vessels are dilated, increasing the general vascular area. These effects upon the circulation are due to its sedative action upon the vaso-motor nervous system, and also upon the muscles of the heart. It is a decided emetic, and, if pushed far enough, the emesis is prolonged and exhausting. The contents of the stomach are first evacuated, and afterward the gall-bladder. It is said that it increases the secretion of bile. The skin is moist, and wherever exposed to the atmosphere is cool. The temperature is reduced. It does not generally purge, but has been known to do so. Large doses produce great depression of the powers of life. The action of the heart becomes exceedingly feeble, the pulse small and weak, the skin cool and bathed in perspiration, the vomiting and retching extreme. There is faintness, dimness of vision, dilatation of the pupils, drowsiness, and sometimes coma. These extreme symptoms are never seen from therapeutic doses, but only where large doses have been taken by accident, or the remedy has been administered recklessly, or for purposes of experimentation; and when produced, suspension of the drug and the administration of stimulants and opium soon relieves the extreme condition.

From the physiological action of veratrum, we see that it is indicated

whenever a cardiac sedative is needed. A safe and efficient cardiac sedative is a great *desideratum* in the treatment of those inflammatory diseases which are characterized by increased frequency and force of the heart's action. Hyperæmia is the first appreciable accompaniment of inflammation and a constant attendant upon inflammation. The old phrase "redness, swelling, heat and pain," applied to inflammation gives a very fair idea of its pathology. While increased vascularity is not the essence of inflammation, yet the cellular changes occasioned by the inflammatory process are due mostly to too much blood in the tissues. The systemic disturbances associated with inflammation are manifested by increased temperature and excitement of the vascular system. It has long been a maxim in the treatment of inflammation to diminish the blood in the tissue involved. With a strong, bounding heart, driving the blood like an engine into the inflamed tissues, is not a remedy indicated that will control the heart, and in its effect say to the heart, "Thus fast shalt thou go and no faster?" Veratrum will do this, and it will dilate the blood vessels, thus increasing the general vascular area and diminishing the blood-pressure. This dilatation of the blood vessels and increase of the vascular area has been likened by Fothergill to bleeding the patient into his own vessels, thereby securing the beneficial effects of blood-letting without the loss of blood. Such a remedy is demanded where the inflammatory process imperils life, and, if not speedily arrested, will destroy life. Veratrum is a valuable remedy in *pneumonia, peritonitis, meningitis, and all that class of diseases, and for inflammation following injuries and surgical operations.* It has the power, when administered in connection with opium during the first stage of these diseases, to limit the extent and duration of the disease, and in some instances to abort it.

The history of cases could be presented here showing the successful use of veratrum in the the treatment of these diseases, but it would be tedious, and the writer considers it unnecessary.

Dr. H. C. Wood, in his Treatise on Therapeutics, says: "When true sthenic arterial excitement is to be combatted in any disease, except it be gastritis, veratrum viride may be employed as a prompt, thoroughly efficient, and at the same time very safe remedy." Bartholow says: "Excellent results are sometimes obtained in aneurism by the use of veratrum. It is a powerful adjunct to rest and other means of treatment. It acts by lessening the force with which the blood is propelled and the number of cardiac contractions. In this way coagulation of the blood in the aneurismal sac is greatly favored."

Veratrum is highly recommended for puerperal eclampsia. Dr. S. S. Boyd, of Dublin, Ind., contributed an interesting article to the Indiana State Medical Society in 1874 on the use of veratrum in puerperal eclampsia. He gives the history of several cases in which veratrum proved successful in doses of ten to twenty drops, repeated every half hour until the pulse was lowered to sixty, when the convulsions ceased. In an article published in the *American Practitioner* of January, 1878, Dr. Boyd reports other cases which confirm his former experience. It has been recommended by Barker, of New York, and Sullivan, of San Francisco, and others, in the treatment of puerperal convulsions. Its favorable action in this disease is due to a sedative influence upon the spinal column and its power of controlling the circulation.

Veratrum has been recommended to control the circulation and reduce the temperature in typhoid fever and other adynamic diseases. This is ill advised, and is due to a mistaken notion of the pathology of these diseases.

Cardiac weakness, whether functional or organic, or caused by a state of adynamia incident to disease, is a contra-indication for the use of veratrum.

In rare instances an idiosyncrasy of the patient may prevent the characteristic effect of veratrum, and it may produce unpleasant nervous phenomena.

Some patients may be made to bear the use of veratrum who would not otherwise do so by giving stimulants in connection with veratrum. In these cases stimulants sustain the heart while veratrum exerts its peculiar effect. The writer has frequently administered stimulants with veratrum with a happy effect, especially in pneumonia.

In cases where veratrum lessens the frequency and force of the pulse without lowering the temperature, it will generally do no good, and ought to be abandoned.

The writer believes the reason why veratrum is not in general use is that those who do not use it have not tried it sufficiently to prove its value. They have not tried it, either because they think a cardiac sedative is not needed, or because they consider veratrum to be an unsafe remedy. A case of interest on this point is found in the appointment of a committee by a Massachusetts Medical Society to investigate the properties of veratrum. The committee adopted the plan of sending samples to physicians. It is said that "four hundred two-ounce vials of the tincture were distributed within the bounds of

the Society, accompanied by a circular asking co-operation in the researches. But thirty responses were received, and a large portion of the replies were unsatisfactory. Some were afraid to thoroughly test the drug; others had too little faith in its virtues to give it a fair trial."

When intelligently administered, the writer believes veratrum is as safe a remedy as any in the materia medica that possesses such positive and certain therapeutic properties. There are but few fatal cases reported as caused by veratrum, and they have occurred where it has been recklessly administered or taken through mistake in enormous quantities. As much can not be said of some remedies that we unhesitatingly use in our daily practice

Dr. S. R. Percy, in reporting an extensive series of experiments with veratrum upon dogs, says that when the drug was pushed in poisonous doses until the dog was reduced to a condition of extreme prostration, the animal when left to himself invariably rallied slowly, and under the influence of stimulants rapidly recovered. He states that tincture of cantharides is the best stimulant for prostration caused by an overdose of veratrum. He also gives the history of a case in which veratrum produced long-continued vomiting, which alarmed the patient's friends, who, in Dr. Percy's absence, summoned another practitioner, who was not acquainted with the properties of veratrum, and he was also alarmed. Dr. Percy, arriving soon afterward, assured the friends there was no danger, and would not allow any restoratives to be used, and the unpleasant effects soon passed off without any treatment.

Dr. H. C. Wood says "it is almost incapable of producing death in the robust adult, unless used with great recklessness and in repeated doses." Wood also says that it is a safer remedy than aconite.

The investigating committee of the Massachusetts Medical Society report that "not a single instance is found in which serious harm has resulted from the use of veratrum viride."

Upon the proper *administration* of the remedy depends its efficiency and its safety. It should be commenced in small doses. Give from three to six drops of the tincture to an adult, and repeat the dose every three hours, increasing the dose one drop every three hours until the desired effect is produced. In robust cases, where the symptoms are extreme and time is important, this dose may be exceeded. The object in commencing with small doses is to avoid undue effect of the remedy, as some persons are more susceptible to its influence than others. It has been recommended to give smaller doses and re-

peat the dose every hour or every two hours; but the writer thinks every three hours the best interval, because it about reaches its full effect in an hour and a half, and maintains its effect for another hour and a half, and, if repeated at intervals of an hour or two hours, it is liable to accumulate in the system, and a fuller effect be produced than is desired. When the pulse has been lowered to 80, or 70, or 60, as may be desired, it should be continued in the same dose, or diminished as may be necessary to keep the pulse controlled. If vomiting should at any time ensue, the quantity should be reduced to the original commencing dose; and if the pulse has not been sufficiently lowered in frequency and force, the dose should again be gradually increased as before. Opiates, alcoholic stimulants and aromatic spirits of ammonia are the best remedies in the author's experience to relieve vomiting and prostration caused by veratrum. It is always best to administer an opiate with veratrum unless opium is contra-indicated. Opium alone is a good remedy for inflammation, and given with veratrum it prevents the nausea and vomiting that sometimes attends the use of veratrum alone.

The author desires to emphasize the following conclusions: A cardiac sedative is indicated in the treatment of a certain class of inflammatory diseases as defined in this paper, and experience corroborates this physiological indication.

Veratrum viride is the best cardiac sedative we have, because it is a safe remedy and is almost certain in producing its physiological effect.

Opium should in most cases be administered with veratrum. Stimulants need to be given with veratrum in some cases.

Veratrum administered with opium, and especially with opium and stimulants, will rarely be attended with nausea and vomiting, and in this way does not interfere with taking nourishment.

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