THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. VII.] WEDNESDAY, OCTOBER 3, 1832. [NO. 8.

GELSEMINUM NITIDUM OF PURSH.

Notice of some of the Medicinal Powers and Therapeutic Applications of the Gelsemium Nitidum of Pursh. By WILLIAM TULLY, M.D., Professor of Materia Medica and Therapeutics in the Medical Institution of Yale College.

[Communicated for the Boston Medical and Surgical Journal.]

IN Elliott's Sketch of the Botany of South Carolina and Georgia (published at Charleston, S. C. 1821) it is said, on the authority of the late James McBride, M.D., that the root, flowers, etc. of this shrub are narcotic. It is added, that the effluvia of the flowers sometimes induce stupor, and that a spirituous tincture of the root has been used successfully in rheumatism. From this statement I was induced, many years ago, to obtain specimens of this article, and to make a course of observations upon it, which resulted in full conviction that it was a valuable medicinal agent, and might be an important acquisition to the materia medica of the United States. Within the last half dozen years, I have again been repeatedly supplied with parcels of this plant by Isaac Branch, M.D., of Abbeville, S. C.; and I have, in consequence, resumed the use of it with much satisfaction. As it is an article but little if at all known as a medicine in the Northern States, it is believed that some account of it, even though in many respects imperfect, may possibly be a matter of interest to some of the readers of the Boston Medical and Surgical Journal.

This plant is denominated *Gelsemium nitidum* by Pursh; *Gelsemium sempervirens* by Elliott; *Gelsemium*, s. *Jasminum luteum*, etc. by Catesby; *Gelsemium nitidum* by Michaux; *Bignonia sempervirens* by Walter; and *Syringa volubilis*, etc. by Plukanet. As I have no botanical descriptive work at hand, the above synonymy is given from mere recollection; but it is confidently believed to be correct. I consider Pursh's denomination as possessing a decided preference over all the rest, for reasons which perhaps might not interest my readers generally. The popular denominations of this article are *Yellow Jessamine*, and *Carolina Jessamine*. The former seems to me to be a highly exceptionable name, from the circumstance that a species of true *Jasminum*, almost univer-

sally called *Yellow Jessamine*, is very generally cultivated in various parts of our country ; and the latter is but little, if any better, since our plant is by no means a *Jasminum*, but a genus abundantly distinct. I believe that the *Gelsemium* is arranged by Jussieu in his Natural Order *Apocynæ* ; but whether subsequent botanists have given it a new location, I do not now recollect, and just at present I have no means at hand of ascertaining. As Linnæus associated it with his genus *Bignonia*, it must thereby have fallen into his Natural Order *Personatæ*. I believe it is indigenous in the United States, from Virginia to Florida, and from the Atlantic to the Mississippi ; but it is said to be the most abundant near the sea coast, and on the banks of rivers. It is not unfrequently cultivated as an ornamental climbing shrub in the State of Connecticut ; but, unless I misremember, its foliage is deciduous, and not sempervirent, in that climate. The genus *Gelsemium*, I think, comprises only a single species.

The part of this plant which I have employed, has been the *root* exclusively ; and my sole preparation has been the alcoholic tincture, made in the proportions of four Troy ounces in coarse powder, to a pint of officinal alcohol, i. e. alcohol of the specific gravity of .835. It is true, I have not investigated whether officinal alcohol is a better menstruum for its active principles than diluted alcohol, wine, or even water ; but having made my first preparation in this manner, and finding it extremely active and uniform in its powers, and capable of being kept for a long time without any perceptible deterioration, I have never made trial of any other.

The first perceptible operative effects of the *Gelsemium* are the abatement of morbid irritability and irritation, and irritative actions generally, in all parts of the system ; as irritative frequency and hardness of the pulse, irritative cough, irritative wakefulness, irritative pain, and even some fugitive varieties of mere irritative inflammation, especially of the arthritic (i. e. the rheumatic or podagric) sort. If a quantity larger than is barely necessary to produce the above operation is administered, it produces languor and lassitude, a disposition to yawn very frequently, and indisposition for motion or exertion. A still more liberal use of it causes vertigo ; imperfect vision ; great epigastric uneasiness ; nausea and retching, especially on motion ; extremely weak, small, and thread-like pulse, and often also a very unfrequent one ; a pale and haggard expression of the countenance ; coldness of the extremities, and at last of the whole body ; and ultimately even stupor, coma, and death.

From repeated and careful observations, even of the very first operation of this article, I am well satisfied that it never produces any true stimulant effects ; i. e. that it never increases vital energy or strength of action in the heart and arterial system, even in the slightest degree, or in the most rapid, transient, and fugitive manner. This fact, and numerous similar facts in regard to many other narcotics, show conclusively that the Brunonian hypothesis that all *narcotics* are primarily *stimulant*, is altogether without foundation. This, and many other of Brown's errors that still pass current among medical authors and practitioners, in all probability originated from the observation of the operation of the *nervine* and *stimulant narcotics*, *opium*, *wine*, and *alcohol* ; and from taking them as

perfect types of the whole class of *narcotics*, when, in fact, they possess other and important powers in addition. I suspect that John Murray's abolition of the class of *stimulants* resulted also from his taking *alcohol*, *wine*, and *opium*, as the type of the *stimulants* also, which led him to unite the two classes. Upon the same principles he might also have abolished the class *nervines*, or antispasmodics.

What effect the *Gelsemium* would produce in phlogistic or entonic diathesis, I know not—at least from any observations which I have ever made—as I have never employed it, or seen it employed, under such circumstances. However, I see no reason to doubt that its operation in this condition of the system would be like that of other pure narcotics—i. e. it would do neither good nor hurt. A pure narcotic operation (as I learned many years ago from actual trial, as well as much good testimony) will not subdue phlogistic or entonic action in any degree. I believe that the cases in which it has been supposed to do this, have, undoubtedly, been mere irritative action, and not true phlogistic or entonic diathesis. Irritative action is too frequently mistaken for the phlogistic or entonic. On the other hand, those narcotics which are not stimulant, and which do not possess any other powers, appear to me to be wholly incapable of aggravating any phlogistic or entonic disease, and therefore they produce neither benefit nor injury in such cases, unless it is upon Cicero's principle, '*quicquid non adjuvat obstat.*'

I have likewise carefully watched the effects of this article, for the purpose of ascertaining whether it possesses any true *nervine powers*; but I have never been able to perceive any. I have never been able to discover that it obviates languor and lassitude under any circumstances, that it produces any degree of the calm, placid, and pleasurable sensation, or of the preternatural watchfulness, or of the exhilaration, which characterize the *nervines*. As far as I can judge, all its power of allaying morbid irritability and irritation, and irritative action generally, seems to depend exclusively upon its narcotic operation.

I am therefore led to consider this article as a perfectly pure narcotic, and I am in the habit of using it as such in all cases where pure narcotics are indicated; and I have seldom been disappointed in its medicinal effects. It appears to me to be perfectly analogous in its operation to the hydrocyanic acid. If this opinion is correct, the *Gelsemium* certainly deserves to supersede this last-mentioned agent, which is so liable to be variable in its strength, which is so decomposable, so difficult to be kept, and, in fact, so troublesome of preparation, at least by ordinary practitioners.

One of my professional friends has suspected this article of being deobstruent (in the strict technical sense in which I define this term), because it sometimes produces a speedy and direct resolution of certain merely irritative atonic inflammations. It appears to me, however, to be much more probable that it produces this effect solely by virtue of its narcotic, and therefore antirritant powers. Although the essence of entonic phlegmonous inflammation may not be the preternatural strength of action which attends it, yet the thorough removal of such preternatural strength of action always breaks up and obviates the disease; and, in like manner, though irritation may not be the essence of the atonic inflammation.

tions which are curable by this article, yet the perfect obviation of all the irritation in such cases may be adequate to break up the disease, precisely as the obviation of preternatural strength of action breaks up and cures entonic phlegmonous inflammation.

The medium dose of the tincture heretofore mentioned, is from fifteen to twenty minims for an adult, which may be repeated at intervals from three to six hours, according to the urgency and other circumstances of the case. As it is such an extremely active article, we should always begin with a sufficiently small dose, to preclude any possible ill effects, which dose should be gradually increased till some slight symptoms of narcosis are manifested. It should then be continued in uniform doses, at regular intervals, taking care to give each succeeding dose a little before the effect of the preceding one has entirely disappeared. It will be obvious that when the system is very much occupied by a severe disease, a much larger quantity must be necessary than under different circumstances; and the various susceptibilities of different persons must likewise cause a correspondent variation in the required doses.

I have found it often useful to conjoin a moderate quantity of opium with this article, and sometimes even a large quantity. Such a combination is certainly far more antirritant than either article separately, even in larger quantities. Besides, opium seems to counteract the power which this article has of producing ultimate narcosis, in contradistinction from a remedial degree of this operation; and this often enables a patient to take a much larger quantity of it than he could otherwise tolerate; and while it prevents the disagreeable effects, it augments its true medicinal powers, and enhances that operation for which it is employed. In low states of the vital energies, it is sometimes useful also to conjoin it with aromatics, alcohol, and tonics. These, in like manner as opium, counteract its liability to produce ultimate narcosis, and, instead of lessening, often greatly augment its useful effects in certain conditions of the system. I suspect that the failure of the pure and simple narcotics to produce beneficial effects in certain cases to which they have been supposed to be appropriate, which is so often complained of, not unfrequently results from a deficiency of skill as respects conjoining them with proper adjuvants and corrigents. It appears to me to be certain, that the aggregate of symptoms which I am in the habit of designating by the phrase *ultimate narcosis*, is never of any remedial utility, any more than ptyalism from mercury. At all events, these symptoms may certainly be counteracted and prevented by acrids, aromatics, and stimulants, without diminishing a particle the useful medicinal effects of any individual narcotic within my knowledge. It is very often the fact, that such a quantity of a given narcotic may be necessary to obviate the symptoms of a particular case of disease, as would produce a troublesome degree of ultimate narcosis without some counteracting agent along with it. Now I am confident that this ultimate narcosis may be perfectly counteracted without at all diminishing the remedial influence of the narcotic employed. Hence the entire fallacy of Dr. Paris's notions in regard to the medicinal incompatibility of stimulants with digitalis, etc.

As the whole of the effects of the *Gelsemium* are merely those of a pure narcotic, so its sole dangerous or deleterious operation consists in

excessive narcosis merely. Now I consider it as well established, that pure, but excessive narcosis, may always be relieved with the greatest certainty by active stimulants, provided they are entered upon before the exhaustion is too extreme, and are given in sufficient quantities. However, when there is reason to think that any material quantity of the substance of the poisonous article remains in the stomach, it ought always to be evacuated at once, and at the very commencement of our treatment, provided the exhaustion is not too extreme to admit of any sufficiently active evacuant process. Under such circumstances, it would be proper to enter immediately upon the freest use of the stimulants, and not to attempt any evacuation till the vital energies are so far increased as to permit the use of such a process, without endangering the instant extinction of life. The rapidity and perfection with which active stimulants give relief under the dangerous operation of the pure narcotics (and this even without the evacuation of the noxious article), is very remarkable ; but, at the same time, it appears to be well ascertained. I have repeatedly witnessed it myself. The stimulants which are to be preferred for the relief of the dangerous operation of excessive quantities of the pure narcotics, and among the rest of the *Gelsemium*, are the water and spirit of alkaline ammonia, the infusion and tincture of capsicum, the spirit of the *monarda punctata*, or of the *laurus cinnamomum*, and, above all, alcohol. Some one, or better, a combination of several of these agents, must be given at regular and short intervals, and in such quantities as to produce speedy and decided effects. When these have been produced, the subsequent exhibition of the remedies must be regulated altogether by the condition of the patient, and the symptoms which remain. In an extreme case, while the patient is under this internal treatment, frictions of the extremities, and even of the body, with spirit of ammonia, or of the *monarda punctata*, or of the *laurus cinnamomum*, or of the fixed essential oil of capsicum, should be sedulously employed. These preparations should be of just such strength as to produce moderate irritation, and moderate rubefaction, without vesication, and they should be repeated and continued as occasion seems to require. The continuous applications of napkins, kept constantly wet with cold water, to the head, will always be a useful auxiliary to the foregoing medication, except when the powers of life are very nearly extinct, under which circumstances the cold is liable to accelerate the fate of the patient. The foregoing course, it will be perceived, is adapted to a case attended with immediately urgent symptoms. Any judicious physician will easily be able to graduate it to the exigences of a particular case ; and these, it is obvious, may vary very greatly in degree.

In the autumn of 1829, one of my patients, for whom this article had been prescribed, perceiving no very particular effects from the quantity which had been recommended, took, in pretty quick succession, several rather large doses. Soon after even the first dose, she was sensible of a preternatural propensity to yawn ; and after the second, she complained of a distressing sensation in the epigastric region : but not being aware that these symptoms had any connection with the medicine, she took two additional doses, at no very long interval, in the hope that they might relieve the symptom above mentioned. Very soon after swallowing the

last, the distress in the epigastrium was considerably increased ; vertigo, dimness of sight, faintness, constant nausea, and frequent vomiting, took place; the countenance became pale, and had rather a haggard expression; the extremities, and even the whole surface, became preternaturally cool, and the pulse was scarcely perceptible. Being near at hand, I was immediately summoned. Speedy relief was obtained by two or three doses of nearly undiluted brandy (the only stimulant that happened to be in the house), though the patient did not perfectly recover her natural state till after about twelve hours. At the expiration of that time, she was just as well as before the occurrence of the symptoms now detailed.

Dr. Branch, before mentioned, communicated to me the following imperfect account of a case of death from this article. He says, 'a death occurred in this vicinity, twelve months ago' (probably in 1828), 'from the accidental, or rather ignorant swallowing of the *Gelsemium nitidum*. I have the statement from the father of the child. A girl, aged about eleven years, procured a portion of the stem of this plant, about two and a half feet long, and three fourths of an inch in diameter. After detaching the outside bark' (epidermis), 'she scraped off and eat the inner bark with the sap. In about half an hour, she took a hearty dinner; but before she arose from the table she complained of being partially blind. This symptom increased rapidly, and in a short time she could scarcely see at all. In about three quarters of an hour she had an inclination to lie down, and at the same time complained of considerable nausea. A little cream, oil, etc. were given to her by her parents, which probably neither retarded nor expedited the full effect of the poison. She died in an hour after taking it.'

From my knowledge of this article, I have no doubt that the life of this patient might easily have been saved by a proper use of the stimulants, which are so effectual in relieving pure narcosis, had a skilful physician been at hand to administer and manage them.

The diseases in which I have employed this article, with the greatest apparent advantage, are *Bex idiopathica*, or simple idiopathic cough—*Bex dyspnœica*, or dyspnœal cough—*Bex convulsiva*, or whooping cough—*Dyspnœa exacerbans*, or exacerbating dyspnœa—*Phthisis*, of various species—*Arthritis Rheumatismus v. acutus-atonicus*, or acute atonic rheumatism—and *Arthritis Rheumatismus v. sub-acutus*, or sub-acute rheumatism. In the case of a lady more than sixty years of age, whose disease was the sequel of repeated attacks of either acute-atonic or sub-acute rheumatism, in which the joints were permanently enlarged, and not unfrequently painful, and the lower limbs very nearly paralytic, I once employed the tincture of *Gelsemium* with considerable advantage, though a cure was utterly hopeless. This patient was constitutionally very susceptible to the impression of medicine of every sort. From fifteen to twenty drops of the tincture of this article, repeated five times in the twenty-four hours, kept up a slight degree of vertigo the whole time, and rapidly subdued the pain and soreness of the topical affection. That it did not effect a radical cure, cannot be mentioned as any reproach to the remedy. I once employed the tincture of the *Gelsemium* in the case of a young lady, whose disease was probably hysteria, which threatened to pass into epilepsy. It appeared to control and keep off the parox-

ysms better than anything else which was tried. Recovery ultimately took place under the use of this article, in conjunction with various tonics. The tonics had been previously used for a long time, and with very little if any benefit.

Upon the whole, from my present knowledge of this article, I am inclined to consider it as a good succedaneum for the hydrocyanic acid. At all events, it has a superiority over that article in the facility with which it may be obtained—the uniformity of its strength—and the perfection with which it may be kept (as would appear) for any length of time.

September 20, 1832.

NON-CONTAGIOUSNESS OF TYPHOUS FEVER.

Remarks on the Non-Contagiousness of Typhous Fever. By JOHN ROSE, M.D., Rensselaerville, N. Y.

[Communicated for the Boston Medical and Surgical Journal.]

MR. EDITOR,—I see an article in your paper by Jonathan Sibley, M.D. endeavoring to produce arguments in favor of the contagiousness of typhous fever. It would seem rational, before coming to the conclusion that typhous fever is contagious, that we should have some idea of fever, and come to some definition of typhus. In the first place, what is a fever? Is heat, as was supposed by the Greeks, a pathognomonic sign of idiopathic fever? I can readily answer, No. Heat is not always present in fever; and in some it is below the natural temperature of the body, from beginning to end. The number of the pulse, preternaturally augmented, is another symptom, by the help of which some define fever; but as the number of the pulse is not always augmented, it cannot be set down as one of the infallible signs of fever. Many other things accelerate the circulation without producing fever, such as running, speaking, or any great exertion of the body. So will the mind cause an increase in the frequency of the pulse, as may be perceived in a public speaker, who makes a mistake while desiring to excel. It is likewise quickened in the lady who suddenly meets the object of her love. In these cases they cannot be said to have an idiopathic fever. (I may be understood to mean idiopathic fever, whenever fever is mentioned in these remarks.) Thirst is not a pathognomonic sign of fever, for in many instances it has been entirely wanting.

The essence of fever may be said to be those symptoms that constitute the access—the patient may be taken suddenly or not. These symptoms can hardly be described to one who has never seen a case of fever; because there are appearances which cannot be made sensible to another, from the bareness of words. Hence, it is impossible to describe the peculiar appearance of the countenance of a person when about to swear to a falsehood. We cannot convey the idea of the odor of a rose to a man by description; and to obtain a correct idea of its flavor, it must be applied to his own nose. Those who have had a fever may receive some idea of what I mean by the access, if they will call to mind