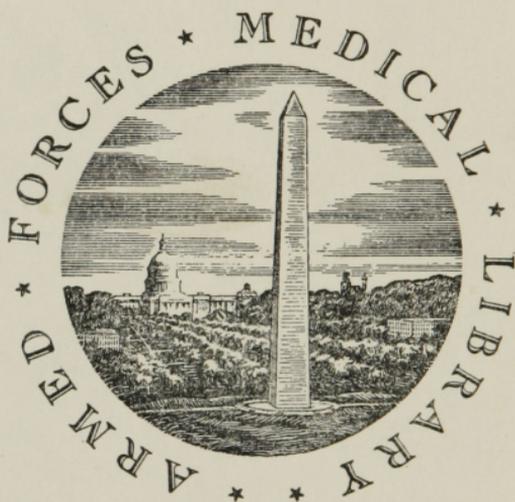


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AN

EXPERIMENTAL DISSERTATION

ON THE

SPIGELIA MARILANDICA,

OR

INDIAN PINK.

BY HEDGE THOMPSON,

OF SALEM, NEW-JERSEY,

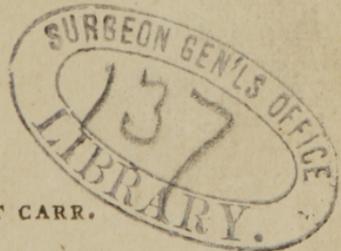
HONORARY MEMBER OF THE PHILADELPHIA MEDICAL SOCIETY.

How often are errors perpetuated by the authority of great names.

PHILADELPHIA:

PRINTED FOR THE AUTHOR, BY ROBERT CARR.

.....
1802.



J. R. Cox. M. D.

AN

INAUGURAL DISSERTATION

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

SUBMITTED TO THE EXAMINATION

OF THE

REV. JOHN EWING, S. S. T. P. PROVOST;

THE

TRUSTEES AND MEDICAL FACULTY

OF THE

UNIVERSITY OF PENNSYLVANIA,

ON THE

27th DAY OF MAY, 1802.

Doct. Martin from
his friend and fellow
graduate
The Author

TO

CASPAR WISTAR, M. D.

Adjunct-Professor of Anatomy, Surgery, &c.

IN THE UNIVERSITY OF PENNSYLVANIA.

SIR,

PERMIT me to tender you my sincere acknowledgments for the unremitting attention and care you have taken, to give me every opportunity for improvement, which your private instructions and extensive practice so eminently afford.

Accept, then, Sir, this Essay, which is offered as a small mark of the gratitude, and esteem

of your sincere friend,

and grateful pupil,

HEDGE THOMPSON.

TO

BENJAMIN S. BARTON, M. D.

*Professor of Materia Medica, Botany, and
Natural History,*

IN THE UNIVERSITY OF PENNSYLVANIA.

THIS DISSERTATION

IS RESPECTFULLY INSCRIBED :

AS A SMALL TESTIMONY

OF RESPECT AND ESTEEM,

BY HIS SINCERE FRIEND,

THE AUTHOR.

399004

INTRODUCTION

WHEN we contemplate the many re-
 sults which have been attained in the
 progress of the physical and medical sciences,
 by the adoption of the inductive method,
 we are struck with admiration, and we
 conclude, that we ought to trust nothing to
 our own conjectures, but to follow the
 path of experiment and observation.
 The foregoing remarks are particularly
 applicable to the study of physiology,
 dissections, for few articles of the kind
 as yet have been treated more fully in the
 minds of practitioners, than the subjects
 of anatomy and physiology: treated
 of considered it as extremely delicate,
 and frequently producing a state of
 and even death, and more, succeeding
 practitioners have adopted their views,
 without sparing the liberties, or
 being decided as their predecessors,
 have mistaken the symptoms produced by
 errors, for the action of the medicine.

AS A SMALL TESTIMONY

Natural History

THE DISSERTATION

INTRODUCTION.

WHEN we contemplate the many errors which have crept into Medical Science, by the adoption of false theories, and false conclusions, we ought to trust nothing to mere authority, which would not bear the test of experimental inquiry.

The foregoing remarks are particularly applicable to the subject of the following Dissertation:—for few articles of the *Materia Medica* have created more fears in the minds of practitioners, than the *Spigelia Marilandica*. The first authors who treated of it considered it as extremely deleterious, frequently producing tremors, convulsions, and even death: and most succeeding practitioners have adopted their ideas, without enquiring for themselves, or being deceived as their predecessors were, have mistaken the symptoms produced by worms, for the action of the medicine.

There are exceptions, however, to this; for the judicious Home* distrusted what was related of its deleterious effects, and instituted an experimental inquiry (which will be noticed more fully hereafter), which confirmed that distrust.

When I took up the investigation of this plant, I was influenced by no particular opinion with regard to it whatever:—but meant to rely solely on the only true test, Experiment. This has caused me to draw conclusions contrary to the opinion of many respectable authors; but of their pardon I am sure, when the end to be attained is considered. Instead, then, of adopting their sentiments of its deleterious and dangerous nature, I hold a directly contrary opinion, founded on Experiment. This source of investigation, those authors anterior to the time of Home, had never adopted, (at least it does not appear by their writings) therefore, in the succeeding pages, I hope to explain the phenomena they have observed, without the aid of any deleterious property in the plant. How

* Vide his Experiments, page 453.

far I have succeeded, the candid reader will judge. If by endeavouring to explain in a different manner those phenomena, I should stimulate others, with more time and talents, to engage in this important inquiry, a part of my purpose will be answered.

It is with great reluctance I submit this premature production as an Inaugural Essay to the inspection of the public eye; and I cannot, in justice to myself, do this, without premising that want of time, combined with early youth and inexperience, concurs to make it what it is, not what I could wish it.

A DESCRIPTION

OF THE

SPIGELIA MARILANDICA.

THE name *Spigelia* was given to this plant by the great Linnæus, in honour of *Spigelius*, a celebrated botanist and anatomist; but anterior to its present name, he called it *Lonicera Marilandica*.

It is now defined *Spigelia Marilandica*, caule tetragono, foliis omnibus oppositis; in his *Carroli Specie Plantarum*.

It is the *Periclymeni Virginiani flore coccineæ*, *planta Marilandica*, *spicata erecta*, *foliis conjugatis*, of *Catesby**.

* Vide his *History of Carolina*, vol. page 78, for a short description of the plant, with a coloured plate.

A SHORT DESCRIPTION

OF THE

PLANT.

The Root. Is simple, unequal, and sends off many slender fibres, it grows in an horizontal direction, and is perennial.

Stalk. This generally grows about sixteen inches high, and never exceeds thirty. It is simple, erect, and nearly quadrangular; of a purple colour, and never banches unless broken off.

Leaves. It bears a large quantity of leaves, which are ovate, sessile, and somewhat undulated; entire, and of a deep green colour, and stand in pairs on the stem.

Flowers. These are large funnel shap'd, of a beautiful red colour, and terminate the stem in a spike.

Calyx. This is divided into five long, narrow pointed, smooth, segments.

Corolla. This is monopetalous, consisting of a small tube gradually swelling to-

wards the middle, of a bright purplish red colour, and divided at the mouth into five pointed segments, which are yellow on the inside.

Stamina. The filaments are five in number, and crowned with halbert-shaped antharæ.

Pistilium. The germen is small, ovate, placed above the insertion of the Corolla, and supports a round Style, which is larger than the Corolla; furnished with a joint near its base, and bearded near its extremity, which is supplied with an obtuse stigmata.

Pericarpium. Capsule is double, two-cell'd, and contains many seeds.

Seeds. These are angular, and plano convex.

The Genus *Spigelia* is arranged by Linnæus in the class Pentandria, order Monogynia, of his Sexual System.

The *Spigelia Marilandica* is exclusively a native of America, and has never been found in any other part of the world. In this continent it has a pretty extensive range, being found as far Northward as Maryland and Delaware, extending South-

ward through Virginia, the two Carolinas, Georgia, and into East-Florida*.

There is a plant considerably allied to ours, called *Spigelia Anthelmia* (or worm-grass), growing plentifully in some of the West-India isles, where it is used as a vermifuge; but it is very little known in America, and not to be confounded with the plant we are at present treating of.

The *Spigelia Marilandica*, growing in the low, rich lands of Carolina, springs up annually about the middle of March. In May, June, and July, it puts forth its beautiful flowers, to ornament the variegated fields of Nature.

Spigelia has received many names. The Cheerake-Indians call it *unsteetla*. In Carolina, it has been called Snake-root, Indian Pink, &c. the latter name it appears to have taken from the Indians having communicated a knowledge of its properties to the whites, about the year 1723.

How long they had known this valuable medicine, cannot be told; but they possessed a knowledge of it long enough to

* As I was informed by Professor Barton.

have contracted a great veneration for its virtues, “for,” says Dr. Barton, “the Cheerake Indians have so high an opinion of this plant, that it would sometimes be dangerous for a person to be detected digging it up, to carry it out of the country*.”

I thought it necessary before I went into a consideration of a particular part of this plant, to make comparative experiments with the different parts; viz. the roots, stalks, and leaves, and see which is the most entitled to attention. For this purpose I have used a decoction† of each part, of the same strength, in which I have put the common earth-worm, as being the nearest allied to the lumbrici of the human body.

EXPERIMENT I.

In one ounce of a decoction of the root I immersed four large earth-worms. Their

* Collections for an Essay towards a Materia Medica, page 37.

† The decoctions were made by taking an ounce of each.

contortions and twistings indicated a great degree of uneasiness on their first immersion: This soon subsided, so that in five minutes they were quite languid, which gradually increased, till the twentieth minute, when few more signs of life appeared, than contraction on being pricked with a pin. At the twenty-fifth minute they were dead.

EXPERIMENT II.

In one ounce of a decoction of the leaves, I put four large earth-worms. In this they continued sprightly for two hours, after which they gradually declined. Two of them died at the end of the fourth, and the others not till the end of the fifth hour.

EXPERIMENT III.

In an ounce of the decoction of the stems, I immersed four more, they underwent the same changes as the others, and died at the end of three hours and a quarter.

From the foregoing experiments (which were often repeated with the same result), we are at liberty to infer that the stalks, and leaves, are entitled to no attention; and that the root is the only part which evinces sufficient powers to engage the attention to an experimental inquiry; accordingly my future experiments and observations will be confined entirely to the root.

ANALYSIS OF THE DRIED ROOT.

* I submitted portions of the powdered root to examination, with the following result.

To half an ounce of the powder of the root, was added two ounces of strong spirit of wine, which, after having stood seven hours, was evaporated, and gave ten grains of resin.

To the same quantity was added some boiling water, and digested for seven hours. This process yielded thirty grains of gum.

* In this analysis, my worthy and ingenious friend, Dr. Roebuck assisted me.

One ounce being reduced to ashes by a slow heat, this lixivated and evaporated, gave about three grains of pot-ash*.



With a view to ascertain its operation on the animal system, I instituted the following

EXPERIMENT.

To a small dog I gave a decoction, made with one ounce of the root to ten of water, and evaporated one half. I gave him the whole of the clear liquor at once: It instantly proved emetic; after which he continued very restless, discharging large quantities of saliva: these symptoms went off gradually, and next morning I subjected him to the following:

EXPERIMENT.

I began to give him small quantities of the root, encreasing the dose daily.

† It was my intention to have given a complete analysis of the recent plant, but not being able to procure it, this analysis is necessarily confined.

The 1st Day. I gave him one drachm and a half, which produced no observable effect.

2d. He took one drachm in the morning; at noon, one drachm and a half more, which produced a slight discharge of tears.

3d. He took one drachm and a half in the morning; after which he appeared sick, and restless; at noon, he took another drachm, a considerable discharge of tears following.

4th. I gave him in the morning two drachms, which increased the foregoing symptoms: at noon, one drachm and a half, after which he became very sick, the internal parts of the palpabræ appeared a little inflamed, with the appearance of fullness, and swelling round their margins; and a considerable flow of tears.

5th. This morning no tears, but a considerable redness of the palpabræ. He took but two drachms and a half, which produced very little alteration in him.

6th. This morning he took two drachms, after which he was very restless; no discharge of tears, but the appearance of inflammation increased. At

noon, he took two drachms more, he now became dull and stupid, continuing constantly in one posture. At 5 o'clock, P. M. he had two drachms more; his symptoms were all encreased; the cornea of his eyes assuming a deadly appearance, indicated what shortly after took place. He died in the evening.

This experiment was urged thus far, without producing the least appearance of convulsive tremors of any kind.

I could not well account for the death of the animal, until I opened him: when I was immediately satisfied as to the cause, by finding within the cavity of the abdomen a worm of enormous size; the head being attached to the liver, in which it had made several small holes. This worm was no doubt the cause of the dog's death; for so large an extraneous substance, dead in the abdomen, was sufficient certainly to produce this effect.

This experiment was useful in two ways, first it convinced me that this medicine never produced convulsions, &c. (of which more hereafter), and secondly, that it was a powerful vermifuge: for although this

monster had taken so secure a retreat, the powers of this valuable vermifuge, reached him, and would have relieved the animal, had it not been for his situation; which, by its death, where it could not be expelled, facilitated the death of the animal.

ITS EFFECTS ON THE HUMAN BODY.

EXPERIMENT.

At ten o'clock, two hours after a light breakfast, I took two scruples of the powdered root, in an ounce of water, my pulse beating 80 strokes in a minute, when the following changes were observed: In five minutes, it beat 82, 10, 82. 15, 84. 20, 88. 25, 88. 30, 82. 35, 82. 40, 76. 45, 72. at which it continued until the 105th minute: at the 110th, it fell to 70. 115, 62. 120, 60. 125, 58. 130, 58. after which I did not notice it.

My pulse, when I took the medicine, was full and natural; but after the 50th minute, it became much smaller, and at the 115th minute, preternatural; so as to

be with difficulty numbered. This decrease of force was observed by some of my friends, sometime after we had ceased to number the strokes.

A very slight nausea was present during the first hour, which gradually went off, and heaviness of my eyes came on; and very slight flushings of my face succeeded.

EXPERIMENT.

Thirty minutes after 10 o'clock, my friend Dr. James M. Taylor took two scruples of the medicine in sugar and water, his pulse beating 82 strokes in a minute, when the following changes were observed; in five minutes, it beat 82. 10, 82. 15, 84. 20, 84. 25, 86. 30, 84. 35, 78. 40, 78. 45, 78. 50, 78. 55, 78. 60, 76. 65, 76. 70, 73. 75, 73. 80, 73. 85, 73. 90, 73. at which time, he took one scruple more, which raised it in five minutes to 76. 10, 78. 15, 80. 20, 80. 25, 78. 30, 78. 35, 78. 40, 74. 45, 69. 50, 68. 55, 66. at which it continued three hours. From the 70th minute of the first dose, his pulse, from

full and natural, became extremely small, which continued during the whole of the experiment.

A very slight nausea was produced by the first dose, which continued until the 35th minute of the second, when it was considerably augmented, which induced him to lay down. This relieved him. The palpabræ of his eyes were a little inflamed, and felt stiff; no dilation of the pupil, or preternatural appearance of the ball of the eye whatever.

EXPERIMENT.

Thirty minutes after 10 o'clock, two hours after a light breakfast, I took one drachm of Pulv. Rad. Spigelia; my pulse beating 76 strokes in a minute. In three minutes 78. 5, 80. 10, 74. 15, 70. 20, 68. 25, 68. 30, 66. at which it continued until the 85th minute, at the 90, 64. 95, 62. 100, 62. 105, 60. 115, 60. 120, 58. 125, 54. 130, 54. 135, 52. 145, 56. at which it continued until the 165th, when it fell to 45. again: at the 185th minute, it had raised

to 62, at which time I dined, which increased it to 68, after this, I did not observe it. After the 66th minute, it became very small, and scarcely perceptible: from the 85th minute, I became drowsy, with a slight stiffness of the palpabræ; at the 125th minute, I became more drowsy, and lay down, and my pulse was numbered by my friend, Mr. Taylor, who observed that singular effect it had in all my experiments, of decreasing the force as well as frequency.

EXPERIMENT.

A quarter after 10 o'clock, I gave to my friend, Mr. Thomas Walmsley, two scruples of the powdered root, in some jelly; his pulse beating 80 strokes in a minute, when the following changes were observed. In three minutes, it was 82. 5, 84. 10, 86. 15, 84. 20, 76. 30, 74. 35, 74. 40, 70. 45, 68. 50, 68. 55, 68. 60, 68. 65, 68. 70, 68. 75, 68. 80, 68. at which time, I gave him two scruples more; in five minutes, it raised to 72. 10, 76. 15, 72. 20, 70. 25, 70. 30, 70. 35, 70. 40, 70. 45, 70.

50, 70. 55, 70. 60, 70. 65, 70. 70, 70. 80. 70. 85, 68. 90, 64. 95, 64. 100, 60. 105, 60. 115, 62. 130, 64. at which time he dined and used exercise; therefore, I had not an opportunity of observing it farther. From the 40th minute of the first dose, his pulse, from full and natural, became preternaturally small; no nausea or sickness present. He complained of languor, which continued until he took the second dose, immediately after which, he felt revived, and his pulse became fuller and stronger. But after the 60th minute, it became extremely small and irregular. At the 70th minute, a slight headach came on, and the languor encreased, and continued until he took exercise, which dispelled the foregoing symptoms, and he returned to his ordinary state of health.

EXPERIMENT.

At 10 o'clock, one hour and a half after breakfast, I took one drachm and a half of the powdered root, in some jelly; my pulse beating 70 strokes in a minute; in three minutes, it beat 72. 5, 76. 10, 66.

15, 66. 20, 64. 25, 62. 30, 62. 35, 62. 40, 60. 45, 60. 50, 60 55, 60. 60, 60. 65, 60. 70, 60. 75, 58. 80, 56. 85, 54. 90, 54. 95, 54. 100, 54. 105, 54. 110, 54. 115, 52. 120, 50. 125, 50. 130, 52. at which it continued until the 190th minute, when, at the 195th, it was 54, at the 200th, 56. at which it remained until the 230th.

From the 20th minute, it began to decrease in force, as well as frequency, and at the 120th minute, it became extremely small and intermitting. I became somewhat drowsy and lay down: a slight flushing in my face was perceptible at intervals, during the experiment. The palpabræ of my eyes felt stiff, and were slightly inflamed.

PRIMARY EFFECTS OF SPIGELIA ON THE HUMAN BODY.

CONTRARY to the opinion of most authors who have wrote on this subject, we find its primary effects to be stimulant.

Garden, in speaking of this plant, says, that in continued and remitting low worm fevers, it is a most powerful sedative. To refute such ideas as those, it is only necessary to recur to our experiments; where we find its first operation was to raise the pulse in every instance.

That they should have fallen into this error, is not at all surprising, when we consider that till lately many of our now acknowledged powerful stimulants were ranked in the class Sedantia.

This is to be attributed to their overlooking or not attending to its first operation on the arterial system: because the secondary effect of every stimulus is to decrease arterial action, which is obviously the case with the medicine we are now considering. If we were not to attend to the action of medicines until the depressing effect was produced, we

should consequently pronounce every medicine a sedative; and the one we are now treating of as entitled to, and justly ranked in that class.

But as we now attend to the first effects produced upon the system, I have no hesitation in considering it as a stimulus, for which we likewise have the authority of Dr. Barton, who says, "that *Spigelia* is a sedative taking this term in the sense it generally is, and ought always to be employed, I do not believe, notwithstanding the very respectable authority of Dr. Garden, and the high authority of Dr. Darwin*."

That we have the most undoubted authority for placing it among the incitantia, I think no one can deny. But we observe, that like every other powerful stimulus, its first operation on the system is of short continuance.

In this respect it is nearly allied to some of our most powerful incitantia, viz. opium, stramonium, digitalis, &c. the latter of which, both in its primary, and secondary effect, it very nearly resembles.

* Vide his Essay towards a *Materia Medica*, Second Edition, page 60.

II. OF ITS EFFECTS ON THE SYSTEM GENERALLY.

IT has been said to act on the nervous system, particularly, by the first authors who wrote upon it; viz. Chalmers, Garden, and Lining: from the two former of which I shall extract their opinions, in their own words, and see how far they accord with my experiments. Chalmers* says, “of all the vermifuges he is acquainted with, *Lonicera*, or Indian Pink, is the best, but it must be properly guarded, to prevent drowsiness, violent pain of the forehead and eyes, and a temporary loss of sight, which often ensue from the use of it; at such time, the pupils seem much dilated; nay, it affects the nervous system to such a degree, that convulsions supervened, as happened (and they proved mortal on the same day) to two lusty children in one family, of seven and five years of age, owing to the too free use of this plant, before its properties were known known to us.”

* On the Climate and Diseases of Carolina, vol. i. p. 67.

Garden says, " I have known half a drachm of this root purge as briskly as the same quantity of rhubarb ; at other times I have known it, though given in large quantities, produce no effect upon the belly ; in such cases, it becomes necessary to add a grain or two of sweet mercury, or some grains of rhubarb ; but it is to be observed, that the same happy effects did not follow its use in this way, as when it was purgative without addition. The addition, however, of the purgative renders its use safe, and removes all danger of convulsions of the eyes, although neither *Ob. Rutæ Sabinæ*, or any other nervous substance, is given along with it. It is, in general, safer to give it in large doses, than in small ; for, from the latter, more frequently the giddiness, dimness of sight, and convulsions, &c. follow ; whereas, from large doses, I have not known any other effect than its proving emetic, or violently cathartic*."

I have made the foregoing quotations to shew the opinions of those authors who

* *Essays and Observations Phy. Litte. vol. iii. 146.*

first introduced this medicine to the *Materia Medica*; and whose opinions of its operation has been adopted by almost every succeeding practitioner. We find they have considered it as a dangerous and deleterious medicine. How far those opinions are just, we shall examine.

1st. Our experiments do not justify the conclusions they have drawn, because, in no one instance, was there any tendency to convulsive motions of any kind: no dimness of sight, or dilated pupil: and in no instance, was any purgative combined or cathartic effect produced. How then are we to account for the production of symptoms, which have so long marred the reputation of this “invaluable medicine?” This is easily done by recurring to the nature of the disease, produced by worms, the most prominent symptoms of which they have delineated, viz. convulsions tremors, dilated pupil, &c. But who has not seen all these symptoms in children labouring under this disease, who had never taken a grain of *Spigelia*? and we all know that those symptoms are enumerated in every description of affections from worms.

Why then brand a safe and valuable medicine with the epithet of deleterious, because the symptoms of a perplexing disease have been mistaken for its operations on the system.

That this has been the case, I think must now clearly appear, from the foregoing experiments and observations. It is further corroborated by the testimony of Home, who performed a number of experiments with it, and says "that in none, not even in those cases where the body was bound, did it produce vertigo, dimness of sight, or convulsions, as we have been told; nor did it (though given in considerable doses) excite any of the effects of narcotic poisons."

"That children of eight years of age may take ten grains, twice a day, and adults may go to the length of half a drachm, four times a day, with safety*."

* Home's Experiments, page 465.

ON THE
USE OF SPIGELIA MARILANDICA
IN MEDICINE.

PREVIOUS to entering on a consideration of its use, I shall premise a short enumeration of the symptoms, and diseases, which are produced by, and are characteristic of the presence of worms in the human body.

In addition to those symptoms before related, viz. convulsions, tremors, dilated pupil, &c. There are vomiting, purging, fainting, slender, intermitting, pulse, itching of the nose, grinding of the teeth, pain in the stomach and bowels, fœtid breath, paleness, weakness, tumid abdomen, livid countenance, sunk eyes, great voracity, giddiness, and remitting fever. In every case of worms, it is probable, that some of the foregoing symptoms will occur. But as some of them are characteristic of other diseases also, certain diagnostic symptoms have long been wanting in practical medicine.

A late ingenious author says, he has discovered this desideratum, which has never been mentioned by any one before him: it is “ an oedematous swelling of the alæ narium, upper lip, and often of the contiguous parts of the cheeks; and the apertures of the nostrils are diminished, and at last they are not half their natural size. This diagnostic is certain, as I have trusted to it, chiefly since that time, and it has faithfully served me*.

Cullen says, that apoplexy is frequently symptomatic of worms†.

DISEASES PRODUCED BY THEM.

EPILEPSY. That they have frequently produced this dreadful disease, is, I believe, now universally admitted.

Marchand cured two cases of this disease, by expelling the worms. Dr. Barton says, he has seen cases of it that would

* Homes' Experiments, p. 459.

† Nosology, Class II. Genus XLII.

yield to nothing, until anthelmintic medicines were prescribed*.

Cullen defines his *Epilepsia Occasionalis*, as arising from a manifest irritation, and ceasing on the removal of it.

In his enumeration of the causes, which produce this occasional irritation, he considers worms among the first, that, by their presence, may produce this effect†.

DYSENTERY. Cullen mentions worms, as frequently accompanying this disease‡. Suavauge describes an Epidemic Dysentery from worms, which yielded only to anthelmintic medicine ||.

Pringle and Monro mention them as frequently occurring in Dysentery.

Worms have also produced Aponia (or loss of voice): in this case, their expulsion is the only cure for the disease**.

Dr. Rush says, that the diseases most commonly produced by them, belong to the class of Neurosis. And that there is

* Lectures.

† Vide his Nosology, LIII. Genus.

‡ Nosology, Genus XLI.

|| Vol. II. page 329.

** Cullen's Nosology, Genus CX.

scarcely a disease or symptom of disease, belonging to this class, which are not produced by them.*

When by the foregoing symptoms and diseases the presence of worms in the human body is indicated, it becomes necessary to endeavour by means of medicines to remove them from that asylum where they have the power of doing so much mischief.

For this purpose the *Spigelia Marilandica* was first introduced into practice, and has ever since held a distinguished place among the list of anthelmintics.

In cases of worms it is considered by Home, as an effectual and valuable medicine, from whose work I shall relate a case which at once shews its power in expelling worms, and to what extent it has been given without injury to the patient.

“Christian M‘Allister, aged 27, labouring under a tertian, has passed several worms, within these five months, and at present has pains in her belly, swelling of the upper lip and nostrils, grinding of her

* Inqu. and Observ. vol. I. page 154.

teeth and picking of her nose. She had a dose of rhubarb and mercury, after which, on the 22d, she took half a drachm of the Indian Pink thrice a day. It kept her body constantly loose. On the 25th she passed a round worm. The powder was repeated four times a day. On the 29th she passed two worms, and the symptoms were much diminished. The lip and nose were less swelled. The Spigelia was encreased to two scruples each dose. June 2d, all the worm complaints are gone," &c. &c.

Another case of its efficacy related by Lining, we shall notice. He says, "I was sent for to a negro child, about four years of age, on the seventh day of a continual fever; and, as I suspected that the fever was kept up by the irritation of worms, I ordered the following that morning.

R. Aq. Theriæ. drach. ii.

Aq. Font. Une. ii. p.

Pulv. Rad. Anthelmiaë (for so I called the Indian Pink), Ana. scrup. i.

Tart. Regenerat.

Pulv. Croci Anglic. gr. v.

Sacchar. q. s. M. Sumat. Coch. unum secunda quaque horæ.

Next morning, I ordered a repetition of the same ; and, in the afternoon, when the child had a stool, thirty large worms, the teretes, were at once voided ; and that afternoon, the fever went entirely off, and did not return. Next, morning I repeated the same mixture ; and that day the child voided nine more of the same kind of worms*.

Many more instances of its efficacy in cases depending on worms, are related : but I think it unnecessary to enumerate them.

It has been found useful in many of the complaints of children, which do not depend on worms. Lining says, “ that though it does not always succeed in expelling worms, yet I have observed, that children’s complaints were remarkably relieved after having taken it for some days†.

Dr. Barton says, “ a pretty extensive use of the Spigelia, has now convinced me, that this medicine very often affords relief, and indeed effects a cure, in cases,

* Essays and Observations, Physical, and Literary, vol. I. page 386.

† Ibid.

in which worms are supposed to be present, but in which none are discharged. If I do not greatly mistake, this will be found a highly useful medicine, in some of the febrile diseases of children, unaccompanied by worms, especially in the insidious remittent, which so frequently lays the foundation of dropsy in the brain*.

If the Experiments, &c. in the preceding part of this Essay, should produce a conviction, that the *Spigelia Marilandica* is a safe medicine, then it will follow: 1st. That it is a valuable vermifuge; and 2dly. That there is much to be expected from its application to cases of fever, when we consider the power it is shewn to possess (by the different Experiments), over the heart and arteries.

With this, then, I conclude my observations on the subject of this Essay. But, before I take a final leave, I wish to pay the tribute of gratitude to the Professors

* Barton's Collections for an Essay towards a *Materia Medica*, part I. page 60.

of this University ; and present them my sincere thanks for the numerous opportunities of improvement they have afforded me, while a student in this institution.

THE END.

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