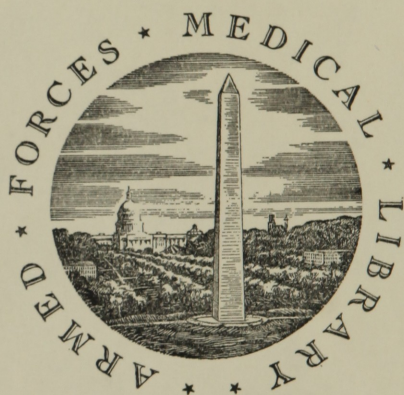


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W. Bartram del.

Phytolacca decandra Linn.

Thacker & Co. sculp.

AN
INAUGURAL
Botanico-Medical Dissertation,
ON THE
Phytolacca Decandra

OF
Feb 12 / 81
LINNÆUS.

1/13 (1110)

BY BENJAMIN SHULTZ,
OF PENNSYLVANIA,
MEMBER OF THE PHILADELPHIA MEDICAL SOCIETY.



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NON potui non mirari divitias, quas Optima Natura Americam inhabitantibus dedit, et liberalitatem insignem, qua ad morborum sat validum exercitum profligandum, omnia, vel *maxime necessaria quidem* adjumenta, regionibus illis longe lateque extensis subministravit; simul autem dolebam, tam multa et incomparabilia medicamenta indigena et euporista, in ipsa illa America neglecta fere, vel paucioribus tantum familiaria esse incolis.

*SCHOEPF, Materia Medica
Americana. Præfatio, p. iv.*

AN
Inaugural Dissertation,
SUBMITTED TO
THE EXAMINATION
OF THE
REV. JOHN EWING. S. T. P. PROVOST;
THE
TRUSTEES AND MEDICAL FACULTY
OF THE
UNIVERSITY OF PENNSYLVANIA,
FOR THE DEGREE OF
DOCTOR OF MEDICINE,

On the twenty-first Day of May, 1795.

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TO

CASPAR WISTAR, M. D.

ADJUNCT PROFESSOR OF ANATOMY, SURGERY,
AND MIDWIFERY,

IN THE

UNIVERSITY OF PENNSYLVANIA;

THIS DISSERTATION

IS RESPECTFULLY INSCRIBED

BY HIS SINCERE FRIEND AND PUPIL,

THE AUTHOR.

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TO
BENJAMIN SMITH BARTON, M. D.
PROFESSOR OF NATURAL HISTORY AND BOTANY
IN THE
UNIVERSITY OF PENNSYLVANIA.

DEAR SIR,

AS a small tribute of gratitude, I also dedicate this, my first medical attempt, to you; acknowledging, at the same time, the information which you have been pleased to favour me with, on the subjects of my Dissertation.

Believe me to be,

S I R,

Your affectionate and sincere friend,

THE AUTHOR.

TO
J. M. SMITH BARTON, M. D.
PROF. BOTANY

Explanation of the Plate.

IN THE
UNIVERSITY OF THE WEST INDIES

- A. A branch of the plant, exhibiting both the upper and the under surfaces of the leaves.
- B. The root.
- C. A transverse section of the root.

Figures 1, 2, 3, 4, 5, different views of the flower and the fructification.

Fig. 6, represents a seed.

Fig. 7, represents a berry, in the state of complete maturity.

of the Author.

INTRODUCTION.

THERE is, in this country, an immense variety of native plants, as yet but little known, which may, at some future day, furnish valuable matter to enrich the Materia Medica and Botany; sciences which, even in this enlightened age, are far from having arrived at a state of perfection.

With what enthusiasm, and at how much expence, do we send many thousand miles for exotic plants, whose virtues may, perhaps, be far inferior to many of our own, which, by a little industry, might be brought to a state of culture and perfection, of which other countries cannot boast, and of which preceding botanists have had but a faint idea!

Were we to prosecute our researches a little farther than we heretofore have done, we might extend the natural history of our country beyond its present bounds, and bring to public view an important object, hitherto unexamined except by

savages. May not diligence and industry bring to light unknown virtues in a *Spirea trifoliata*, a *Gerardia flava*, a *Podophyllum peltatum*, an *Actea racemosa*, an *Eupatorium perfoliatum*; and in many other plants, which may perhaps deserve a preference to remedies now employed in obstinate and acute diseases? May we not hope to discover other vegetables, which shall be found to possess qualities powerful enough to subdue the violent action of the arterial system in inflammatory complaints, without our being under the necessity of spending a single particle of its vital fluid?

If our medical gentlemen had bestowed upon the productions of their own country, the same attention which is paid to the plants of the old world, we might ere now have rejoiced at the discoveries of our countrymen in this ample field of natural knowledge. They might have added a solid reputation to their names, by handing down to posterity lasting benefits, which the long-explored store of Europe cannot afford. And who would venture to deny, that a genius equal, if not superior, to a Buffon, a Linnæus, or a Spallanzani, may be raised and fostered among the free-born sons of America, when European habits shall no longer influence our various pursuits?

For the subject of this Inaugural Dissertation, I have chosen the *Phytolacca decandra* of Linnæus.

This

This is one of our indigenous plants, which, of late years, has proved a valuable remedy in the cure of several very obstinate diseases.

Three other species of the same genus are known to botanists: these species are, the *Phytolacca octandra*, the *Phytolacca icofandra*, and the *Phytolacca dioica*, the medical and other properties of which have not as yet, at least to my knowledge, been discovered.

In this investigation, to avoid being misled by the colouring of fancy, or by inaccurate observation, I was induced to repeat my experiments divers times; and they were repeated with a similar result. But as the most careful may err, and as the testimony of our senses may sometimes be insufficient, I do not expect, or even wish, that the conclusion which I have drawn should be adopted, without a repetition of the experiments by others. And although some of the inferences may appear doubtful, nevertheless they may stimulate to such enquiries as will ultimately bring truth to light; and this is surely of more real importance to mankind, than all the delusive theories of a wild imagination.

I.

A DESCRIPTION

OF

The Phytolacca Decandra.

THE word Phytolacca is derived from the Greek word φύλλον, which signifies a plant, and lacca, which is a peculiar red juice, called gum-lac, because of the resemblance of the juice of the berries of our plant to this latter product.

In this dissertation I shall confine myself to the consideration of the history and properties of the Phytolacca decandra.

This plant is thus defined by the great Linnæus :

PHYTOLACCA floribus decandris decagynis.
Caroli Linnæi *Species Plantarum.*

It is the *Phytolacca vulgaris* of Dillenius. See his *Hortus Elthamensis*, p. 318, 319, and 320. t. 239. f. 309 and 310.

Solanum racemosum Americanum, of Plukenet. *Alm. Bot.* p. 353. t. 225. f. 3.

Phytolacca Americana, majōri fructu. Tournefort. *Institutiones Rei Herbariæ*, p. 299. t. 154.

Solanum Virginianum, rubrum, maximum, racemosum, baccis torulis canaliculatis. Morison, *Plantarum Historia Universalis*, 3. 522.

I am unwilling to take up more time with the enumeration of other synonyma, and shall therefore proceed to give a pretty full description of our plant.

The ROOT. The root, when young, is nearly perpendicular in its direction. As it advances in age, it throws out numbers of lateral shoots, or branches. It often grows to a very large size, nearly the thickness of a man's arm. It is succulent, and of a whitish colour.

The STALK. Is frequently eight or ten feet high, branching, herbaceous, round, and smooth. In some places it is finely coloured.

The

The **LEAVES.** The leaves are alternate, sitting upon foot-stalks, ovate, oblong, acute, very entire, and smooth. In some places they are finely coloured, like the stalk, with purple.

The **CALYX.** The calyx consists of five pieces, which are subrotund, concave, patent, inflex at the apex or point, and permanent. Their colour is white, tinged with red. Linnæus, with some other botanists, considers the calyx as the corolla of this plant.

The **COROLLA.** There is none, unless the calyx is considered as such.

The **STAMINA.** The *Filaments* are ten in number, subulate, or awl-shaped, and shorter than the calyx.

The *Anthere* are subrotund, and somewhat incumbent.

The **PISTILLUM.** The *Germen*, or ovary, is orbicular, depressed, divided on the outer side by little bands, or wreaths, and terminating with ten styles, or pointals.

The *Stigmata* are simple.

The **PERICARPIUM.** A berry orbicular, depressed, having eight or ten longitudinal furrows,

umbilicated by the pistils. There are as many loculaments as there are pistils. The berries are, at first, green; afterwards they are of a fine red colour, and when perfectly ripe, they are black.

The SEEDS. The seeds are reni-form, or kidney-shaped, black, shining, and smooth. There is one seed in each loculament.

The RACEMI are solitary, having long peduncles. They are simple, supporting many flowers, disposed in form of a spike. These peduncles are nearly of the length of the leaves. The footstalks of the flowers are simple, and short, and about their middle are furnished with opposite bractææ, or floral leaves, which are lanceolate, and falling off.

The genus *Phytolacca* is arranged by the celebrated Linnæus, in the class *Decandria*, and in the order *Decagynia*, of his Sexual System. In his Fragments of a Natural Method, he has placed it in his fifty-fourth order, which he denominated *Miscellaneæ*, because the plants of this order are not connected together by numerous relations in their habit and structure, as the *natural* families are. The late Professor Murray has found for our plant a more natural situation in the order which he calls *Oleraceæ*. See his excellent *Apparatus*

ratus Medicaminum, vol. iv. The present learned botanist, Mr. A. L. de Jussieu has placed the genus *Phytolacca* in the sixth order, called *Atriplices*, of his sixth class. See his very learned work, entitled *Genera Plantarum secundum ordines naturales disposita*.

The *Phytolacca decandra* is one of those plants which are common to both the old and the new world. In Europe, it is found in Switzerland, Milan, Florence, Portugal, and Piedmont. It is also a native of Japan, as we learn from Thunberg, and other writers. In America, it inhabits a very extensive tract of country, viz. from the State of New-Hampshire to Mexico. It probably extends much farther south. It generally grows along road-sides, along hedges, and in old fields. It is seldom found in the woods, and when it is, it seems to have grown up from seeds deposited by the thrush*, robin†, mocking-bird‡, and other birds.

The *Phytolacca decandra* has received a number of names. It is called Poke; Poke-weed; Pork-physick; Pork-weed; Red weed of Virginia; Virginian Poke; Branching *Phytolacca*; Garget; Cunicum; Skoke; Cancer-root; Ame-

* *Turdus rufus*.

† *Turdus migratorius*.

‡ *Turdus polyglottos*.

rican-nightshade; and Red-nightshade. In Pennsylvania, its most common name is Poke. In the New-England States, it is better known by the name of Garget.

II.

Chemical Analysis.

IN order to ascertain the nature of the juices of the different parts of this plant, I inspissated the juice of the root, leaves and berries, expressed separately, and then digested an ounce of each extract with ten ounces of distilled water, in a temperature of eighty degrees of Fahrenheit, nearly a week, the bottles being well corked and frequently agitated. After this, each of the solutions were filtered, and then evaporated to the consistence of an extract, each to an equal degree of solidity.

I also treated the extract of the three different parts of the plant in the same manner precisely with highly rectified alcohol, prepared for the purpose; and upon weighing the residua, it appeared that an ounce of the extract of the root contained three drachms two scruples and ten grains of gum, and sixteen grains only of resin; and

and that of the leaves three drachms, one scruple and fourteen grains of gum, and one drachm one scruple and four grains of resin; while the berries yielded six drachms of gum, and one drachm and fifteen grains of resin*.

The berries yielded also a tolerable good spirit by distillation. For this purpose, I procured about a half bushel, triturated them well in a wooden mortar; and after adding some yeast or barm, I subjected them to a fermentative heat for nearly three days. After which time I distilled off six pints of spirit, some of which being set on fire burned in a beautiful manner.

III.

On the Use of the Phytolacca as a Dye.

THE juice of the berries is of a fine red purple colour, and the colouring matter of a very penetrating nature. Thus, if a branch of the tube-rose (*Polyanthes tuberosa*) when in blossom, be kept

* Part of the juice of the berries, which dissolved in water was probably sugar.

over night in a vessel containing water, impregnated with some of this juice, in the morning we shall see it coloured.

The flesh of the wild pigeons that have fed, for some time, upon the berries, is tinged of a high red colour. In the same manner it will affect poultry and other birds when eating them.

“ The Portuguese were formerly in the habit of mixing the juice of the berries with their red wines in order to give them a deeper colour; but as it was found to debase the flavour, and to make the wine deleterious, the matter was represented to his Portuguese majesty, who ordered all the stems of the *Phytolacca* to be cut down yearly, to prevent any further adulteration. The same practice was common in France, till it was prohibited by an edict of Louis the XVI. and his predecessors, under pain of death*.”

The juice of the berries gives also a fine purple tincture to paper, but it soon fades. The berries are employed in dyes by the country people, but the colours are not lasting †.

* *Encyclopædia Britannica*, vol. xiv. p. 723.

† I have always observed that linen or cotton when stained with the juice of the berries generally contracted a bluish cast after washing. Whether this will fade or not I never had an opportunity of observing, though the following case

They would make a most beautiful purple die, if some method could be found for fixing the colour.

In attempting to fix its colour, I made the following experiments.

EXPERIMENT I.

I dissolved between two and three ounces of alum in half a pint of boiling water: in this solution I immersed some pieces of cotton, linen and woollen cloth for some time; and after passing them through the juice, I dried them in the sun. But on being thoroughly washed, they faded.

EXPERIMENT II.

I made different mixtures of the juice with the nitrous acid: in each of these I dipped some pieces of the above-mentioned cloths. But though I proceeded in the same manner as before, the issue was no better, for it seemingly had a greater tendency to destroy the colour than to fix it.

case seems to be in favour of the negative. A gentleman in this city accidentally stained a piece of cotton with the juice. This he attempted to wash off by a strong impregnation of soap and water; but the stain after turning from a purple red, to a deep blue colour, remained in the piece as long as it lasted.

EXPERIMENT III.

Being made acquainted with the idea, that the base of alum (the clay or aluminous earth) and not the vitriolic acid, is the principal mordant, I repeated Dr. Bancroft's experiment in a smaller scale, by dissolving six ounces of alum in a pint of hot water; and then adding to it two ounces and an half of the sugar of lead, stirring the mixture well during two or three days; and afterwards adding to it about two drachms of pot-ash, and as much of clear powdered chalk, in order to take up a superabundance of the sulphuric acid, and to obtain the earth of alum in as pure a state as possible. This method, although recommended by good authorities, proved also unsuccessful.

With the same view I immersed several pieces of linen and cotton in a strong solution of alum, and then dipped them in a solution of the caustic vegetable alkali, in order to precipitate the earth of alum upon the cloth. With this view I also precipitated a solution of alum, and obtained the earth by evaporation, which I dissolved in urine for the purpose of fixing the colour. However, with the utmost attention, I was equally unfortunate.

EXPERIMENT IV.

Having been informed* of the method used by the Indians for fixing the colour of a new species of Galium on quills, woollen cloth, &c. viz. by previously boiling them in the juice of Crab-apples; and at the same time having read a passage in Chaptal's Chemistry, where he mentions, that several vegetable colours may be fixed on certain animal substances, I was led to make the following attempt. I took an ounce of alum, dissolved it in about a gill of water, in which I boiled several quills (some were clarified and others not) and a few pieces of woollen cloth. The boiling I continued above twenty minutes; after taking out one quill of the clarified, one of the unclarified, and a piece of the cloth, I immersed each of these in three different vessels filled with the juice. After taking them out, drying and washing them well; I found to my great satisfaction, that the colour had fixed itself permanently in one of these substances, to wit, the clarified quill, which after repeated washing and friction, besides holding it above five minutes in strongly concentrated nitric acid, was not in the least affected: even highly oxygenated muriatic acid made no impression upon it. The other quill though

* By Dr. Barton, Professor of Natural History and Botany in the University of Pennsylvania.

affected in some measure, could not be compared to the former, having only attracted here and there a few visible stains. The same was the case with the cloth, being only slightly tinged as it were*.

EXPERIMENT. V.

After these trials, my curiosity led me to fix it on paper, and here also my attempt was apparently not in vain; for the mordant being lime-water, not only fixed the colour more permanently in paper, but also improved it to a great degree, by giving it a more bright and crimson appearance.

With respect to the other parts of this plant, I know of no instances of their ever having been the objects of dying, excepting the information given by Professor Kalm, in his Travels through North America. He says “ a German confectioneer told him that the dyers use to gather the “ roots, and make a fine red dye of them †.”

* In order to avoid every suspicion about the accuracy of this experiment, it will be sufficient for me to mention, that I conducted the whole process in the presence of my ingenious friends Dr. Lacoudre and Mr. Marshall.

† Vol. i. p. 95.

IV.

Its Effects on the Living Body,

With a short account of the Opinions of those Authors who have written upon it.

GOVERNOR Colden, who was bred to the profession of medicine, in a communication which he made to Linnæus, says, “that the expressed
“juice of any part of this plant, when inspissated
“in the sun, is of great service in ulcers, and that
“it has cured genuine cancers.”

I. *Of the Root.*

“The roots are emetic and cathartic*. An
“ounce of the dried root, infused in a pint of

* Dr. Griffitts informed me of a family, near Reading, who accidentally used the root instead of the horse-radish. The consequence was immediate vomiting and purging, which continued violently for several hours. The master of the family was thrown into convulsions; all their countenances were very pale, and their whole frame greatly debilitated. However the succeeding day they were all restored again, and not the least of its effects were perceptible.

“ wine, and given to the quantity of two spoon-
 “ fuls, frequently operates very kindly as an eme-
 “ tic. In some cases it is preferable to most other
 “ emetics, as it hardly alters the taste of the wine.
 “ The roots are applied to the hands and feet in
 “ ardent fevers. Farriers give a decoction of
 “ them to drench cattle, and apply them in form
 “ of poultice, for discussing * tumors †.”

Parkinson says, “ that the inhabitants of North
 “ America make use of the juice of the root as

I was also informed, by two foreigners, that after their arrival in this country, they happened to eat some of the root of this plant, not knowing what it was, because it had a remarkable sweet taste. They immediately puked violently; this continued for some time, and debilitated them exceedingly, so much so, that they were not able to walk about. They nevertheless, after taking milk and common salt, soon recovered, and the next day were both well again.

The root, from the sweetish taste which it communicates to the palate, is a favourite food with some animals. Thus hogs are exceedingly fond of it. It is, however, found to purge them when eating it.

* Mr. J. Bartram informed me, that his father frequently cured the fistulous ulcers of horses with the extract of the root, where other powerful remedies would make no impression.

† See the Rev. Mr. Cutler’s paper in the Memoirs of the American Academy of Arts and Sciences, vol. i. p. 447.

“ a fami-

“ a familiar purge. Two spoonfuls of the juice
 “ will work strongly *.”

In the disease called the “yellow water,” which, for several years past, has proved so very mortal to horses in Pennsylvania, New-Jersey, and some other parts of the United States, the *Phytolacca* is thought to have been useful. The food of the horses affected with this disease †, was sprinkled with a decoction of the roots of the plant.

The Cherokee-Indians made use of the poke-root in cases of venereal chancres. The chancres are dressed with the powder of the root, well dried. It is certain, however, that this mode of treating chancres is not always, if ever, efficacious; since many of the Indians fall victims to the

* Mr. Macon, a respectable member of Congress, informed me, that he knew a man in South-Carolina, who made a very strong decoction of the root, and drank nearly a quart of this liquor. It purged him violently, but no other effects (as he says) were in any degree perceptible.

† This disease appeared to be a true Synochus; beginning with synocha, and ending in typhus. It was called Yellow Water, from the yellow appearance which the serum had after bleeding.

ravages of the disease just mentioned*. Dr. Schoepf, in his *Materia medica Americana potissimum regni vegetabilis* †, says, that the extract of the root of the poke is used both externally and internally, in ulcers of a bad kind (resembling cancerous ulcers) of the lips and mammæ ‡.

II. *Of the Leaves.*

In many parts of the United States, the inhabitants boil the young shoots, and eat them in the manner of spinach; the stems when boiled in this state are hardly to be distinguished from it; they are nutritious and wholesome, and in taste equal to asparagus §.

Some caution, however, is necessary in this case, as the leaves and stalks, when gathered in

* From the information of Dr. Barton.

† See page 71.

‡ In Pennsylvania the inhabitants frequently substitute an ointment made of the root boiled with hogs lard, instead of the extract. This they say is also of great service in different eruptions of the skin.

§ Indeed in some cases it may be said to be preferable, as it is a well known fact, that it does not affect the urine with that foetid odour, which so commonly occurs after the eating of asparagus.

a more advanced state, sometimes have a violent cathartic effect. Professor Kalm, in his *Travels*, mentions this fact, and it is now familiar to most of the people of the United States*.

The powdered leaves are used by some as an emetic †. But the root is generally preferred for this purpose, as it appears to be much more powerful, and consequently smaller doses of it are requisite.

* See vol. i. p. 197.

† My ingenious friend Mr. Cooper (the present apothecary of the Pennsylvania Hospital), in order to ascertain the effects of the leaves, made several experiments upon himself. In a letter with which he favoured me, he says, "I took two scruples of finely powdered leaves of the *Phytolacca*. A slight nausea ensued, which soon went off; it returned, and about an hour after I took the medicine, vomiting was produced. I vomited three times; the intervals were short, with less straining and disagreeable sensation than I ever experienced from taking tartar emetic or ipecacuanha. I felt somewhat drowsy afterwards." For the purpose of trying their effects in decoction, he adds, "I took two ounces of the green leaves of the same plant, and boiled them in a quart of water down to a pint; of this I took about eight ounces, and felt little or no nausea afterwards. It operated gently by stool." He also adds, that after applying some of the powdered leaves on an ulcer for a short time, it produced slight eschars.

Profefſor Allioni, in his *Flora Pedemontana* *, ſays, that in Piedmont, the leaves of the poke are uſed in cancerous ulcers; but he adds, that they produced no other benefit than that of mitigating the pains ariſing from theſe ulcers †,

III. *Of the Berries.*

Theſe, when perfectly ripe, are extremely ſmooth, and of a dark reddiſh colour. They of courſe are very tempting to eat, but this gratification can ſeldom be enjoyed to any degree, without great inconvenience ‡. Man is not the only

* Vol. ii. p. 132.

† They ſometimes, however, have more efficacy, as appears from the following caſe communicated to me by Dr. Wiſtar. A negro (in the ſtate of New-York) had a cancerous ſore in his upper lip and noſe, which was conſidered as incurable. He one day covered it with a poke-leaf, merely to keep off the flies, which were exceedingly troubleſome at that time of the year. On finding himſelf eaſier in conſequence of this new application, he continued it for ſome time, which produced a ſenſible amendment of the ulcer, and finally a cure; but during the winter, when the leaves could not be procured, he applied the bruifed root.

‡ Profefſor Kalm, however, mentions (ſee his *Travels*, vol. i. p. 197-) that “the berries are eaten in autumn by children, without any ill conſequence.” Mr. Macon alſo informed me, that he had ſeen ſeveral French gentlemen eat them,

animal to whom these berries are unfriendly; many birds are observed to be purged by them. The flesh of those who eat them acquires a high red colour, a disagreeable flavour, and is destitute of adipose substance*.

Dogs also appear to be much affected by it. Thus Sprögel found that some drops of the expressed juice of the berries, when put into the mouth of a dog, excited a violent cough, also a tremor, and some convulsive motions; and that two drachms of the same juice excited in a dog much more violent effects; the animal, however, recovered in a short time. Sprögel *experimenta circa venena*, p. 24.

them, without any inconvenience, as if they were cherries, grapes, or any other innocent fruit. Instances of a similar nature may sometimes occur; but this is not generally the case. Whole families are often excessively purged merely by eating the flesh of birds, which have fed upon the berries; although their effects must have been rendered much milder by the dilution, and perhaps decomposition, of their juice in the bodies of these animals.

* There are a number of birds which are observed to feed on these berries, such as the robin, the thrush, the mocking-bird, pigeons, and many others. Poultry are also very fond of them; likewise insects, such as grass-hoppers, &c.

The extract of the berries, when applied to cancerous ulcers, has frequently proved an effectual remedy; particularly in those of a long standing*.

The expressed juice of the Poke-berries, externally applied, is said to cure corns: scabies and herpes have been often removed by it. In these cases, a solution of the extract in water is generally substituted, where the expressed juice cannot be had.

In rheumatism the whole substance of this plant has at different times been of essential service; although the berries have generally been preferred †. In those rheumatic affections which

* Dr. Rush informed me, that his preceptor, Dr. Redman, used the extract of the berries to a number of old ulcers with success. He particularly noticed a case of a Mrs. C. in this city, who had been afflicted with a cancerous ulcer in her breast for several years. Every thing almost had been attempted, but in vain. The extract of the berries was at length tried; and by repeated applications, supporting the system at the same time with tonics, a cure was finally obtained.

† Mr. William Matlock of this city, is said to have been recovered, by this treatment, from a very distressing case of chronic rheumatism. Dr. Barton informed me, that a severe case of rheumatism, which had baffled the skill of several

sometimes occur to syphilitic patients, its virtue far exceeds that of opium*.

Being desirous of enquiring more particularly into the nature of this plant, as well as of ascertaining which of its different parts was most powerful, I tried the following experiments upon animals.

EXPERIMENT I.

I gave an ounce of the expressed juice of the leaves to a middle sized dog, of about three or four years old, on the seventh of October. The consequence was, that about five minutes after the exhibition, he began to puke most violently, and continued doing so near an hour; during which time it operated no less than fourteen or fifteen times, and appeared to excite extreme nau-

seas. A gentleman, who had been cured by several physicians about Albany, was at length cured by the expressed juice of the root of the Poke-plant. The berries would have been preferred, but they were not to be had at the time.

* Dr. Griffiths, who has lately been particularly attentive to the *Phytolacca decandra*, related in his Lectures, that in cases of syphilitic rheumatism, where he tried this remedy, he was always remarkably successful.

sea. He, at the same time, appeared to be very drowsy, particularly in the intervals of puking. The abdomen was also much distended. It likewise operated in some degree as a cathartic and diuretic, besides occasioning a very troublesome cough, which tormented the animal in such a manner, that it had but little rest during the operation. I also observed, that, in the slightest fit of coughing, an enormous quantity of vapour was always thrown from the lungs; more so than ever I observed in these animals, even during the severest exercise they have undergone. However, as soon as the operation was over, which continued about an hour and an half, the dog appeared to be as well as ever, except that the cough and dullness did not abate immediately, though they were much less violent.

EXPERIMENT II.

On the seventeenth of October, a week after the first experiment, I gave an ounce and two drachms of the juice of the berries to the same dog: he puked soon after; and though a larger quantity had been given, yet he vomited nine or ten times only: the other symptoms were nearly similar to those before-mentioned, but less violent. Its diuretic and cathartic effects, however, were more evident.

EXPERIMENT III.

On the twenty-first of the same month, I exhibited ten drachms of the expressed juice of the root to the same dog. This part of the plant appeared to be much more severe in its effects than either of the others. It not only operated more violently as an emetic and cathartic, but also occasioned much more stupidity*.

Wishing to know the comparative strength of the gum and resin of this plant, I tried the following experiments.

EXPERIMENT IV.

I dissolved four scruples of the gummy part of the leaves in about four ounces of water. One half of which I gave to a dog, with the assistance of Dr. Lacoudre. Some nausea and drowsiness were produced, but no vomiting. The other effects were almost the same as above described †.

* It is very remarkable, that when I procured this dog, he was very scabby, and affected several persons who touched him; but after these experiments were concluded, he was so perfectly cured, that not a single scab was perceptible on his whole body.

† Viz. Cough, diaphoresis, &c.

EXPE-

EXPERIMENT V.

With the resinous product I proceeded in the same manner as I did with the gummy, and exhibited an equal quantity of it to the same dog. The consequence, however, was in some respects different, as the animal not only vomitted several times; but the soporific effects were also much more evident.

EXPERIMENT VI.

In order to try the effects of the spirit, which I had distilled from the berries, I gave about two ounces of it to a middle sized dog. Some nausea and drowsiness came on, followed by slight convulsive motions, but no vomiting succeeded. The other effects were nearly similar to those above-mentioned*.

* I repeated these experiments upon young dogs, and was surpris'd to find that they were not affected by any preparation of this plant, even when given in three or four times the quantity used in the above experiments. The same circumstance was observed with respect to dogs of twelve or fourteen years of age.

V.

*Remarks on the preceding Facts and Experiments.*I. *On the Chemical Analysis.*

THE juice of this plant appears to contain a true gum-resin, as may be inferred from the analysis which I have made. The proportions of the gum and resin are, however, very different: thus we see the quantity of resin from the root, is very small in comparison to that of the leaves, or berries, and the gum also less than that of the berries. A question therefore, may naturally occur in this place, Why is the root more powerful than the other parts, as we find it to be in the preceding experiments? Of this however, I shall speak presently in its more proper place. The resinous part of the leaves, we may observe, is greater in proportion to the gum, than that of the root or the berries. It is therefore very probable, as authors have not unfrequently conjectured, that the green colour of vegetables is in a great measure owing to this product; and I have particularly observed that the odour, which is so peculiar to the green parts of vegetables, especially when

when drying, appeared to me much stronger in the resinous than in the gummy part.

Whether the *Phytolacca* contains any thing besides gum and resin, I have not had sufficient time to ascertain; though it seems evidently to contain a large proportion of saccharine matter, as appears from the remarkable sweet taste, especially of the berries.

Should the spirit which may be procured from the berries, be found to retain some of their peculiar qualities, it may probably serve as an excellent menstruum for the other preparations of this plant.

II. *On Dying.*

With respect to the *Phytolacca* as a dye, it may, perhaps, become an article of a very interesting nature, particularly as it grows in such great abundance in our own country. Several attempts have lately been made to fix its colouring matter upon linen and cotton; but these attempts have as yet proved unsuccessful.

In the preceding experiments on dying, I have succeeded in two articles only, viz. quills and paper. Of the quills the clarified only were properly

perly affected. Hence it appears in some measure evident, that those substances, which are perfectly purified from foreign matters, particularly of the unctuous kind, are the most proper subjects for dying. Instead of alum we may probably substitute many other astringents, particularly those of the vegetable kind, which perhaps, are far superior; and who knows but that by repeated trials we may discover these to be the substances best suited for this purpose, as has already been hinted at concerning the Indian dye?

Lime-water seems to be a mordant for fixing the colouring matter of the juice of the berries on paper; though on cloth this has very little effect. The juice when thus impregnated and applied sunk in it, similar to our black ink when prepared without gum arabic. It is therefore, not improbable, that by adding a proper quantity of gum arabic to this solution, and evaporating it to the consistence of an extract, we may obtain an excellent and durable painting colour, useful for many valuable purposes*.

* Gum Arabic itself, when added to the juice, was thought by one of my friends (who tried the experiment) to have this property.

III. *On its Operation on the Animal Body.*

The principal effect of this vegetable, when applied locally, seems to be that of a mild escharotic. This I infer,

1. From its producing eschars when applied to ulcers.
2. From its property of dissolving tumors.
3. From its being of an emetic and cathartic nature. For we shall generally find such substances when applied, possessed of a caustic or escharotic power.

It also appears evidently to possess an anodyne quality, which may be inferred from the drowsiness it occasions, and perhaps from the ease in its operation as an emetic. Its anodyne effects seem, however, less evident and powerful than the evacuant*.

* I believe the *Phytolacca* will never prove fatal as a narcotic, because when given in large doses, it will always procure its own rejection by its emetic power.

The emetic power seems so counteracted by the narcotic, that it will not act violently unless taken in an immense quantity.

It

It is diaphoretic, cathartic, and diuretic. These effects probably proceed from the narcotic and anodyne qualities above mentioned; for when an emetic is exhibited in small doses, diaphoresis generally is the result, especially if combined with an opiate; and frequently emetics when they pass unchanged from the stomach into the intestines, prove cathartic: such substances often stimulate the kidneys, and thereby shew diuretic effects.

This vegetable as an emetic, combined with an anodyne, far exceeds any other yet discovered. It is owing to this admirable property, that it is not so liable to occasion nausea and sickness when exhibited in small doses, as is the case with other diaphoretics, and for this reason also we do not perceive that excruciating pain when applied to ulcers, particularly of the atonic kind, which arises from other escharotics.

The different effects of the different parts of this plant are remarkable. Why the root is more powerful than the other parts, since it contains a smaller proportion both of gum and resin, I cannot well ascertain. But it seems highly probable that it contains, in a greater quantity than the other parts, something of a volatile and corrosive property (which exists throughout the whole plant) as when tasted, it is evidently stronger and more acrid, than either the leaves or the berries.

This corrosive and volatile property, appears also to be much more evident in the green than in the dry state of this vegetable, and is least sensible when it is boiled. Hence persons who used decoctions of this plant were not only frequently disappointed, although the decoctions were strong; but had to swallow immense doses, before any cathartic effect could be produced. Physicians therefore, in my opinion, ought to be extremely cautious of exhibiting substances prepared in this way. Indeed were they in general to make less use of decoctions, than they hitherto have done, I believe they would be much more successful in their management of diseases*.

Whether the *Phytolacca decandra* is a sedative or a stimulant, is a question of too much importance to be neglected in this place. But I wish to state a few propositions respecting stimulants and sedatives in general, before I proceed to say any thing on this subject.

* Decoctions are said to be particularly useful in cases of debility, where the stomach is scarcely able to retain any thing offered: In such cases I should prefer cold infusions, when given in small and repeated doses, as the irritability of that organ is frequently so great as to reject substances which are only in a small degree stimulant. For want of this precaution, physicians have in my opinion rejected substances from the *Materia Medica* as inert, which perhaps, are really valuable.

1. There

1. There is no substance in the *Materia Medica*, which may not be classed under one or other of these two heads, viz. Stimulants and Sedatives.

2. Each of these substances in producing its effects upon the living body, acts particularly upon some system or part of the body*.

3. That many stimulant substances thus acting upon the different systems of the body, produce sedative effects †.

4. That sedatives when applied in certain situations, prove stimulant and tonic ‡.

* As an example of such substances as act upon different systems it will be sufficient for me to mention, that *ipécacuanha* acts primarily on the stomach; *jalap* more particularly on the intestines; mercury on the lymphatic and glandular systems; bark on the arterial; *assa-fœtida* on the nervous; oil of amber on the nervous and muscular; hemlock on the brain and nerves, and opium on them all.

† For instance, *ipécacuanha*, *jalap*, mercury, &c. Stimulants which produce sedative effects are only suited for a mixed state of fever, for if given in a state of excessive action they frequently fail, and aggravate the disease by adding more stimulus; and vice versa in an atonic state.

‡ For instance, cold, bleeding, &c. Cold in producing tonic effects under different circumstances when applied to

Stimulants, I define to be such substances as increase action, and the force of action, whether of the arterial, the nervous, the lymphatic, or any other system of the animal body.

Sedatives are such substances as lessen it.

Before I proceed any further, I wish to make a few observations on emetics and narcotics.

1. Emetics, I believe may all be considered as stimulants. In producing sedative effects they stimulate the stomach into action, and thereby to throw out its contents. Their sedative effects by this operation, are however, less considerable and evident than their stimulating. Hence, they are

the living body, has been very improperly styled a tonic itself. That it produces tonic effects by its sedative quality may be easily explained. Thus we know, that a temperature of sixty two degrees of Fahrenheit's Thermometer is the natural standard of health. Now if a person be surrounded by a temperature of ninety or ninety six degrees, it will naturally stimulate his system to excess, and thereby bring on indirect debility. But if the same person be removed into a temperature of fifty or sixty degrees, which is considerably lower than that he was in before, a great load of stimulus will be removed, his muscular fibres which were before expanded beyond natural bounds, will now contract, and he will perform his different motions with ten times the alacrity he did before.

so very useful in diseases of a typhoid nature, or such as are composed of acute and chronic states of fever*.

Substances which act in this way, generally act on most other systems at the same time; for instance, on the lungs, skin, kidneys, liver, &c.

2. Narcotics †, in my opinion, may safely be said to be stimulants. They seldom produce even sedative effects, unless combined with an evacuating, or some other similar, power. They are stimulants because they increase action, either in the arterial, the nervous, or other systems. In the arterial, they show their effects by increasing the fullness and force of the pulse; in the nervous, by indirectly stimulating them, and thereby bringing on first ebriety, and then drowsiness. The almost only objection of any importance that has

* Dr. Grant makes use of the term semi-acute-ailment in this state of fever.

† Narcotic and anodyne medicines have generally been thought to be different. For instance, an anodyne is supposed to be such a substance, which will ease pain and procure sleep; while a narcotic eases the patient by stupifying him. This distinction in my opinion is tolerably just, in so far that a narcotic acts more essentially on the brain and nerves; while an anodyne acts almost equally on all the other systems, thereby throwing them into indirect debility and suspending pain for a certain time.

ever been offered against the doctrine that anodynes are stimulants, is, that they diminish the frequency of the pulse. This feeble argument however, I think may easily be confuted, by a single experiment; for instance, if, after the exhibition of opium (that is, as soon as it begins to operate) we take off about ten or twelve ounces of blood; we shall generally find, that the pulse will instantly rise about ten or fifteen strokes in a minute. Now this we will find, is never the case, when proper sedatives are administered. A comparison will, I think, strengthen this opinion; for instance, when we give wine to a patient in a typhus fever, where the pulse is fluttering and the strokes so frequent as scarcely to be counted; we shall find that the wine (allowed to be a stimulus by almost all physicians) will always lower the pulse considerably.

Thus far, I have given a few preliminary observations on stimulants and sedatives in general; if our ideas upon this subject are any ways just; our conclusions respecting the Phytolacca, will in my opinion be fair and easy, to wit, that it is in its own nature a direct stimulant; proving in some measure indirectly sedative, by acting principally on systems destined for secretion.

VI.

Pharmaceutical Treatment.

THE leaves should be gathered about July, (when the foot-stalks begin to assume a reddish colour), dried in the shade and powdered for use. An extract may easily be obtained from the leaves when gathered at this period, by gently evaporating their expressed juice to a proper consistence*.

A tincture may be made by dissolving either the extract, or the leaves, in their green or dry state in common brandy; or in the spirit distilled from the berries.

An ointment is also made by powdering the dried leaves, and mixing them well with hog-lard, or simple cerate; or by boiling some hog-lard and bees-wax with fresh leaves, and straining the mass. The proper time for gathering the berries in this climate, will be in October, when

* When the leaves are gathered for the purpose of an extract, care should be taken to use them immediately; otherwise they will soon be spoiled, as they are very subject to fermentation.

they become soft and ripe, and are of a blackish colour. They are generally used in tincture, made by infusing them in Brandy. An extract may easily be made by evaporating their expressed juice.

The root is to be gathered about November or December, when the stalks of the plant are perfectly dead. It may be prepared in the same manner as the leaves are; but to facilitate drying, it should be perfectly divided into small pieces.

With respect to the doses of the different preparations of the *Phytolacca* that have been given internally, I may recapitulate first, (upon the authority of Mr. Cutler), that when an ounce of the dried root is infused in a pint of wine, and given to the quantity of two spoonfulls, it frequently operates very kindly as an emetic. Parkinson also says, that if two spoonfulls of the expressed juice be given, it will operate strongly*. In a note under the same article, I took notice of the case of a gentleman (related to me by

*. Whether dogs can bear a greater quantity than men, I have not ascertained. However, should this be the case, the difference in my opinion, does not seem very great, especially if we compare the account of Mr. Parkinson, with the experiments which I have made with the expressed juice of the root on these animals, with nearly a similar result.

the honourable Mr. Macon) who was violently purged, by drinking nearly a quart of a strong decoction which he made from the root.

2. Of the leaves. Very little is known respecting their doses, since the other parts are generally preferred for internal purposes. Two scruples of the powder of the leaves taken by Mr. Cooper, vomited him only three times, and from eight ounces of a strong decoction of them he felt very little inconvenience.

3. Of the berries. The extract and tincture are generally made use of. Mr. William Matlock, who tried the effects of the tincture for a considerable time, infused about a pint measure full of the berries in a pint of brandy. Of this he took a common wine glass full every night and morning; he says it purged him considerably. Others for the purpose of a diaphoretic, take a table spoonfull of a tincture, somewhat weaker than that made use of by Mr. Matlock. Dr. Griffiths informed me, that in cases of rheumatic pains, he used to exhibit to adults from two to four grains of the extract of the berries, with great advantage.

VII.

*Of the Use of the Phytolacca Decandra
in Medicine.*

PREVIOUS to any conjectures as to the use of this plant in diseases, I beg leave to offer a few sentiments.

1. I believe all the variety of universal diseases which we meet with at different times, are originally but one and the same disease, viz. a fever.

2. That this fever by assuming different types at different periods, may be divided into three distinct states, viz. ; the tonic ; typhoid ; and atonic ; or in other words, into the acute, mixed, and chronic states of fever.

The Phytolacca therefore, reasoning *a priori*, appears to be principally adapted to the second or typhoid state ; and may be exhibited with considerable advantage, in the tonic or inflammatory state, after sufficient evacuations have been premised, such as blood-letting, purging, &c. But it promises the greatest success if applied in the typhoid state, when inclining towards the atonic.

In proceeding to speak of diseases in which it seems to be indicated, I shall begin with the consideration of the

INTERMITTENT FEVER.

This fever appears to be the original form of the whole tribe of febrile diseases we are at present acquainted with; as they all, more or less, and at different periods, assume this type. It is, when in the form of a simple tertian, a perfect typhoid; and from this circumstance I should expect the Poke to be of peculiar service. It will further appear particularly indicated, when we reflect, that other medicines of nearly similar properties, have at different times been applied with singular success, such as arsenic, tartar emetic, ipecacuanha, and a number of others. To these remedies, however, I should believe it to be superior, as it is endued with an anodyne power. Now when we give an anodyne, such as opium, immediately before a paroxysm, it will sometimes prevent it entirely, and by repeating it, will in many instances effectually cure the disease. These two principal qualities of emetic and narcotic being combined in the *Phytolacca*, render it, I think, a medicine superior to any yet discovered for curing this state of fever; for we may give it at all times with perfect safety. This we know is
by

by no means the case with either opium or tartar emetic; for opium, when given uncombined in the commencement of this state, which is generally attended with a degree of inflammatory diathesis, will do more harm than good. The same will be the case with tartar emetic, if given at a time when there is a deficiency of action.

To the Peruvian bark (which is so universally applied in intermittent fevers) I also prefer this medicine, and on this account; the bark, when given without any previous evacuations, often fails; and if we wish to perform a cure, we must continue it a great while, and exhibit it in large quantities; so that our patients often become tired before we can obtain a complete cure.

II. OF CANCERS.

Many instances of this disease have occurred, in which the use of this plant has been attended with extraordinary success, when applied in a stage and period suited to the application of a substance of this nature. As this substance, as well as innumerable others, has often proved unsuccessful in the hands of empirics, and of many eminent physicians, I am induced to make a few observations on cancers in general; and here, as in other parts of my subject, I shall take the liberty
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of thinking for myself; and though the ideas which I offer may appear strange, they may, I think, excite reflections which may lead us to a more successful investigation of this hidden and obscure part of pathology.

Cancers have certainly too often been considered as incurable; and this idea alone is enough to render them so. I believe this idea of cancers has arisen, not so much from our want of proper remedies, as our ignorance of the real nature of the disorder. My belief will be rendered probable by the history of the improvements which have taken place in the cure of diseases. It is not long since even the dysentery was considered as a mortal disease. We cure this, as well as many other diseases, with more ease now than formerly, because we are acquainted with their nature and causes. The ancients defined every tumor which they could not dissolve to be a schirrus, and every ulcer cancerous which they could not cure; and at present our writers confine this name to only one single genus. But the name is unfortunate, as it conveys an idea, as if something foreign had been introduced into one affected part of the body, where it is supposed to effect those fatal consequences that sometimes occur; and there have been authors who referred its proximate cause to poisonous insects. One of the principal causes which has so long retarded the cure of this disease

disease is, that it has frequently been considered as a local complaint. The only argument of any importance that has ever been advanced in favour of this assertion is, that this disorder may be radically cured by the mere removal of the part, without exhibiting, at the same time, any medicines internally. I however imagine there are but few cases that are radically cured by this treatment. The late Dr. Monro, whose authority I believe no one will doubt, has given us a most dreadful and discouraging account of near sixty cancers, almost all of which, after extirpation, returned again. Indeed he has been accused of making use of mercury after the operation, and thereby of taking the most efficacious steps to excite and reproduce the complaint, while his design was to prevent it. But, in my opinion, this could not have been the case, had the cancer been a local disease; for I believe we could never produce a cancer merely by giving mercury, if there were not something of a cancerous diathesis at the same time.

Mr. John Hunter is of opinion, that cancer is a topical complaint, similar to a chancre on the glans penis, or to the inflammation and ulceration of the arm from inoculation. This idea I think cannot be admitted, unless we admit also, that cancers may be produced by mere external application, as in the case of chancre and small-pox; whereas

whereas, there are few or no instances of their being produced in this manner.

From these considerations, besides others which might be adduced, I am inclined to believe, that cancer is a disease of the system in general, terminating in tumors of different kinds, somewhat analogous to the state of general inflammation which produces local inflammatory affection. I believe also, that this general diathesis, upon which the local cancerous affections depend, is of an inflammatory nature, because it occurs particularly when we would expect plethora and inflammation, (as about the cessation of the catamenia in women); and because cancers are best treated by means which are calculated to remove inflammation *. This idea of the origin of these tumors is rendered probable by considering that they are often the obvious effects of inflammation in glandular parts †. The inflammation some-

* Dr. Rush informed me, that Dr. Tate (an eminent physician for curing cancer) assured him, that he could not do any thing with the tedious ulcers or tumors, unless he had recourse to remedies that would previously change the system.

† I consider scrophula as a disease somewhat analogous to cancer; it may assume a different appearance, and may be less violent on account of a difference in the structure of its subjects, who are more delicate than persons subject to cancer.

times ceases, and leaves them indolent ; but when they are irritated, the disease resumes its progress.

Considering cancer as a general disease producing a local affection, the remedies to be applied should be general and local.

In all cases where the arterial system is affected with too much tone, the general remedies should be,

1. Blood-letting. This remedy when used should be small and frequently repeated *.

2. Purges. For this purpose the neutral salts should be preferred, such as Sal Glauberi, sal sod. phospherat. &c. †

* Mr. Henry Fearon says, " I am inclined to think, that " were we to treat cancerous complaints at an early period, " as proceeding from inflammation, we should be much " more successful in practice." His mode of cure consists in bleeding, either topical or general, according to the seat of the complaint, which must be persevered in for a sufficient length of time ; to which must be joined, a milk and vegetable diet, an open belly, and saturnine applications, avoiding wine, spirits, and fermented liquors.

Memoirs of the Medical Society, London, 1789.

† Crawford uses his muriatic of barites with astonishing success in cases of this kind. It purges, acts as a diaphoretic

3. Diaphoretics. As medicines of this class are in general principally suited to this state, the *Phytolacca* deserves particularly to be mentioned. Although it has in no case (to my recollection) been given internally, yet from analogy I should suppose it would be of singular service*.

4. Low diet. This Mr. Fearon recommends strongly, and it has not unfrequently had the desired effect in cases where it was rigidly observed †.

and diuretic. In cases of debility he always joins some preparation of iron to it.

* Diaphoretics appear to be the only medicines suited to cure this disorder, particularly in this state, considering occasional bleeding and purging only as auxiliaries. For this purpose I have no doubt, but that if we could point out such medicines, which would act principally on the skin and other glandular parts, in which this disorder terminates, we could remove it as certainly as we could a gangrene from a wound by bark and wine. Whether the *Phytolacca* has this property, I have not as yet sufficiently ascertained; but in such cases I would not neglect its use, unless I could discover a remedy of superior efficacy.

Arsenic, though recommended by some, I should avoid as much as possible, and for this reason; these complaints always require a long time to be perfectly cured; and arsenic is too great a stimulus to be continued for any considerable period, without showing some deleterious effects.

† The following case seems in some measure to confirm the use of low diet in the cure of cancers, viz. A lad in this

5. Rest. The advantage of rest in this and similar complaints is so obvious, that I need not dwell upon the subject.

The local applications in this state are simple and familiar. They ought to be of a cooling and mild nature. The saturnine applications seem to be chiefly indicated for this purpose.

The general remedies in the atonic state are tonics. For this purpose the preparations of steel ought to be chiefly depended upon: among these the Ferrum ammoniacale of Justamond is a very excellent preparation, as having been of great service, not only when exhibited by himself, but also by several others.

city, of about fourteen years of age, had a cancerous sore in his upper lip, being at the same time affected with a stone in the bladder, for which he took very large doses of opium. Dr. Tate, who attended him for the cancerous complaint, desisted from the use of his medicine a few weeks before the operation of lithotomy was performed; in consequence of which the sore increased rapidly. However, after the operation, the patient being put upon a low diet, and the doses of opium gradually lessened, the cancerous sore soon shewed evident signs of amendment, and which, with a re-application of the aforesaid medicine, has almost completed a cure.

The local applications for this state should be stimulants, particularly such as are in some degree of a caustic nature, yet mild in their operation. For this purpose some of the vegetable caustics ought to be preferred, as the *Phytolacca*, and others. The *Phytolacca* I would always try fully, especially as it has been of essential service in other similar instances.

III. OF SCROPHULA.

From the analogy between scrophula and cancer, I suppose the *Phytolacca* might be useful here, provided it be applied in its proper state and time.

IV. OF RHEUMATISM AND GOUT.

Rheumatism is a disease, in many instances of which, this plant may be employed with great propriety. It has lately drawn the attention of many inhabitants of the United States, by its effects in similar complaints; and they speak with astonishment of the success which they obtain*.

* The case of Mr. William Matlock, who was cured by the use of this valuable remedy, deserves to be mentioned. He informed me, that he was afflicted with this disorder for about eight or nine years; during which time he had been attended by a number of physicians, but in vain: they tried every thing they could think of (though

Gout has also, in a number of cases, been supposed to be equally relieved by it ; and I do not know what objection we can have to use this medicine in these affections ; particularly when the mixed state is present, and the vital organs are not in any ways affected.

V. OF DYSENTERY.

Here after previous evacuations, such as purging or bleeding, the *Phytolacca* would be one of the principal remedies to which I would trust a cure ; especially as this disease is so often the result of an intermittent fever ; or, in other words, a *febris introverta*, as mentioned by Dr. Sydenham.

never, to his recollection, had they recourse to phlebotomy.) Some remedies gave relief for a short time, but their effects were soon over. In this condition his case really became desperate: he was for a considerable time unable to move, his jaw became locked, (which once continued above ten days), and his appetite failed. He at last had recourse to the tincture of the berries, prepared as above described. In about a week after the use of this remedy, his appetite began to return, and his pains to subside: when the medicine purged him too much, he discontinued its use for a few days. By persisting in this remedy for about three months, he was perfectly restored, and is now able to follow his business (being a watch-maker by trade), with as much ease as ever he was before.

VI. OF PHTHISIS PULMONALIS.

In this disease, although the mixed state may frequently prevail, I would seldom, if ever, make use of this remedy. My reason for this precaution is,

1st, That I believe very few such cases have ever been cured by diaphoretics.

2dly, That this mode of treatment, provided cases are favourable, generally requires a very long time for this purpose.

3dly, That medicines of this nature are endued with a power of acting in a great degree on the lungs, thereby producing expectoration, which in many instances may aggravate the disease.

VII. OF SYPHILIS.

If it has been found that opium, when simply exhibited, has ever cured the venereal disease, or even a symptom of it, the poke ought certainly be used in preference to it; and this has, of late, fortunately been the case with several patients. In discussing buboes, I have no doubt of its efficacy, provided we properly regulate the system at the same time; but I should more generally prefer
it

it in venereal ulcers of a long duration, and destitute of inflammatory appearances.

VIII. OF ERUPTIONS.

There are a number of cases of this nature which have been perfectly cured by different preparations of this plant, when applied both externally and internally; and, as Dr. Rush very justly remarks (in his Clinical Lectures) that they are fevers turned inside out, or *febres retroversæ* (as much so as dysentery is in most cases a *febris introversa*), and the whole tribe of a typhoid nature, I think we may easily account for its *modus operandi*.

IX. OF MANIA.

In mania, epilepsy, and a number of other nervous disorders, I would as much omit the use of this remedy, as in all febrile diseases, where the vital parts are principally affected. Medicines of this kind are calculated to redouble the violence of such disorders (especially when possessed of a large share of narcotic or anodyne power, such as hemlock, camphor, opium, &c. *)

* Could we point out such remedies to cure nervous diseases as would produce the effect by an impression upon some other part of the body, without acting directly upon
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the nerves, we should, in my opinion, be much more successful than we hitherto have been. For this purpose I have no doubt, but that mercury, when used a considerable time as a sialogogue, (especially after previous evacuations, where the cases are febrile) would prove a very serviceable remedy. This has lately been, in some measure, the case with epilepsy, where patients have actually been cured. Dr. Hugh Smith of London, who started the use of mercury in this disease, was followed by Dr. Rush of this city; both of these gentlemen point out cases which seem to confirm its use. Other remedies, I have no doubt, will be of equal service, provided they have a tendency to bring on inflammation in the muscles or the arterial system, such as friction with stimulating substances, particularly after the use of the cold bath, or any other remedy of this property.

The effects of the intermittent fever, when it cures melancholy and madness, may be explained upon these principles.



P. S. Since I wrote the foregoing Dissertation, I have learned that the industrious Mr. L'Heritier has figured and described, in his *Stirpes Novæ*, &c. a fifth species of *Phytolacca*, under the name of *Phytolacca dodecandra*.

THE END,

Med. Hist.

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