An inaugural botanico-medical dissertation, on the Phytolacca decandra of Linnaeus / by Benjamin Shultz, of Pennsylvania, member of the Philadelphia Medical Society.

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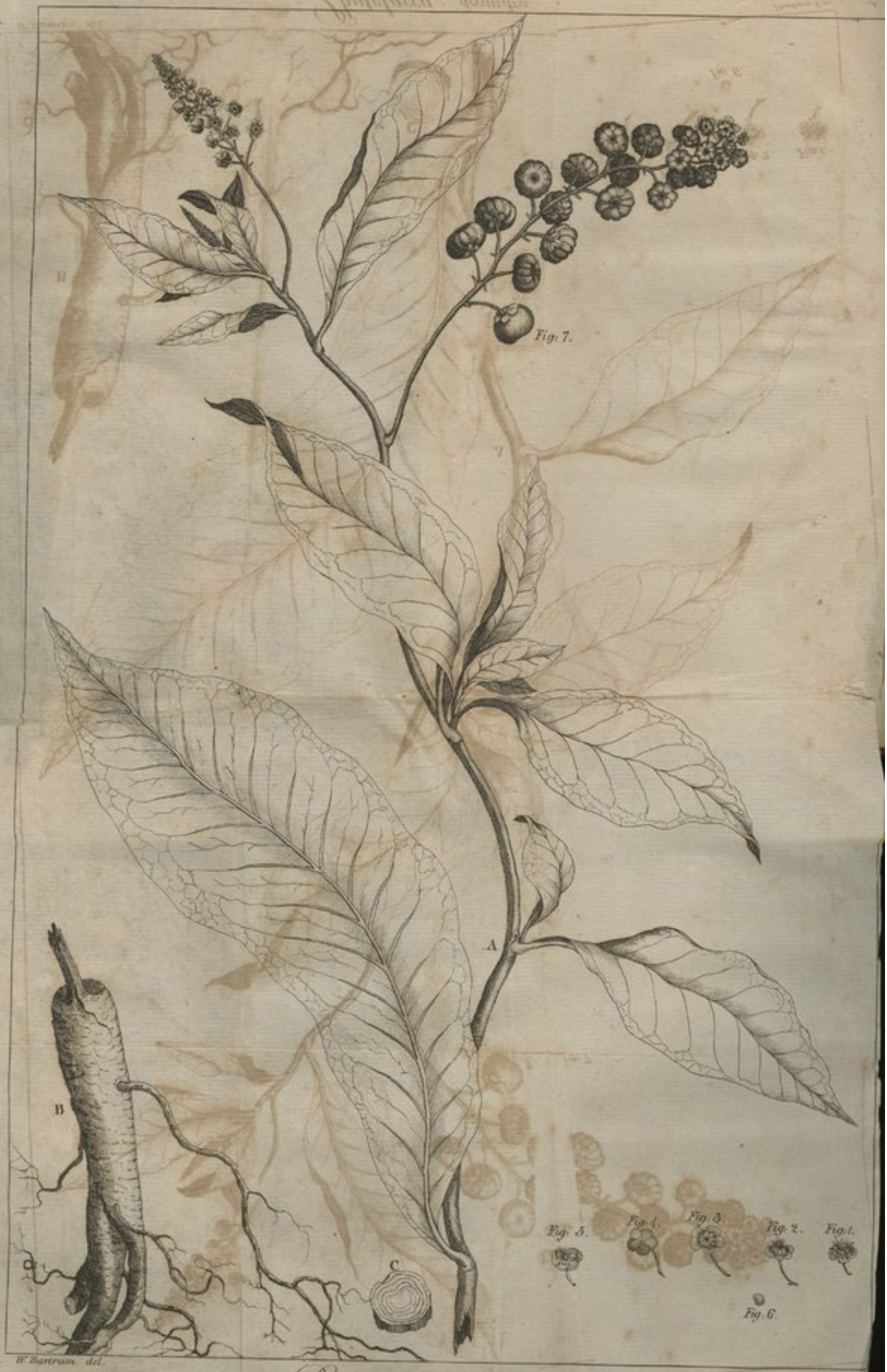

Phytolacca decandra Linn.

AN

INAUGURAL

Botanico-Medical Dissertation,

ON THE

Phytolacca Decandra

OF

LINNÆUS.

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.

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.

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,

SIR,

Your affectionate and ſincere friend,

THE AUTHOR.

Explanation of the Plate.

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.

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 icoſandra, 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 φύτον, 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, majori 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 *Antheræ* 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 foot-ſtalks of the flowers are ſimple, and ſhort, and about their middle are furniſhed with oppoſite bracteæ, 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 *Appa-*

ratus

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 numberr 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-

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 alchohol, 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, he kept

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

over

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 pidgeons 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.

Expe-

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 confec-"tioner 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 fœtid odour, which ſo commonly occurs after the eating of aſparagus.

a more

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 pro- "duced. I vomited three times; the intervals were ſhort, "with leſs ſtraining and diſagreeable ſenſation than I "ever experienced from taking tartar emetic or ipecacu- "anha. 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 after- "wards. 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.

Profeſſor 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 bruiſed root.

‡ Profeſſor 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 occcur; 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-

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. Griffitts, 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.

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 vomitting ſucceeded. The other effects were nearly ſimilar to thoſe above-mentioned *.

* I repeated theſe experiments upon young dogs, and was ſurpriſed 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 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 diſcuſſing 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 ipecacuanha acts primarily on the ſtomach; jalap more particularly on the inteſtines; mercury on the lymphatic and glandular ſyſtems; bark on the arterial; aſſafœtida on the nervous; oil of amber on the nervous and muſcular; hemlock on the brain and nerves, and opium on them all.

† For inſtance, ipecacuanha, 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 hogslard, or ſimple cerate; or by boiling ſome hogslard 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

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. Griffitts 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

of

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 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

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 lythotomy 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 reapplication 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 introverſa, 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 the

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 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.