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THE
PHILOSOPHY OF MEDICINE:

OR,

MEDICAL EXTRACTS

ON THE

NATURE OF HEALTH AND DISEASE,

INCLUDING THE

LAWS OF THE ANIMAL ŒCONOMY,

AND THE

DOCTRINES OF PNEUMATIC MEDICINE.

BY

A FRIEND TO IMPROVEMENTS.

There are three things which almost every person gives himself credit for understanding, whether he has taken any pains to make himself master of them or not.— These are: 1. *The art of mending a dull fire*; 2. *Politics*; and, 3. *PHYSIC.*

DR. REDDOES.

VOL. V.

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CURE OF PUTRID FEVER

CONTINUED.

PRACTICAL OBSERVATIONS.

SECT. I.

OF THE EXHIBITION OF ANTIMONY IN PUTRID FEVER.

For typhus, if the light that is now dawning upon physiology and pathology does not present objects to me under very illusive forms, we shall not fail to strike out an almost infallible method of cure; and this method, I think it probable, will extend to the scarlet fever also; which is perhaps the most formidable among the acute diseases of this climate. In the treatment of fevers we have, it is true, learned to avoid some fatal mistakes of our ancestors; but we can boast of little else. In those cases, in which alone there is, perhaps, occasion for the interference of art, art seems almost impotent: from attention to the single circumstance of debility, I imagine, that patients are often drenched with wine and opiates, till they are stimulated to death. If I have imputed the debility to its real cause, our chief aim should be to restore the principle of excitability; and stimulants should in the meantime be administered with a more sparing hand. Perhaps, when the proper method of restoring this principle shall have been devised, extraordinary stimulants will become unnecessary. The *Materia Medica* was once supposed to contain distinct specifics for the diseases of each separate organ; it is now re-

garded as little else than a collection of stimuli; so that medicine is become the art of administering drams. Hence it can often only amuse or palliate, and must sometimes injure, by forcing into motion, constitutions already too much worn. How would our resources be multiplied, if we could give excitability or life, as well as stimulants! "But is so salutary a revolution in medicine possible?" I do not know; but is it not worth while to enquire?

BEDDOES.

ACANDID and impartial enquiry into the merit of Dr. James's powders is of great importance to all degrees of men, as it must be presumed that in similar cases they will be productive of the like happy effects. The rich need no longer tremble at the terrible apparatus of a sick chamber, the discipline, delay, danger, repeated doses of bark, &c. &c. inseparable from the ordinary treatment of fevers, nor apprehend their lives may be sacrificed for want of judgment in distinguishing when and how such medicines may be respectively indicated. The inferior class of mankind may rejoice to hear, that, by observing the easy directions, they may become their own, or their neighbour's best physicians, and need no longer compound for their lives with the loss of half their substance.

Ignorance, indeed, and self-interest, ever willing to retain and improve every fordid advantage, have concurred to recommend this medicine by a zealous opposition, and by representing it as a violent remedy. But give me leave to ask, is this violence exerted against the constitution,

stitution, or destroyer of the constitution? Doth it not expel the grand enemy from every strong hold with irresistible force, by discharges most salutary and beneficial to the patient? This effect seems to follow, whether it acts as an emetic, purgative, or sudorific.

If this learned gentleman has discovered a certain remedy for that terrible tribe of disorders, which, by the computation of his illustrious predecessor, Sydenham, sweeps away two-thirds of mankind, he does not only deserve all the honours, rewards, and privileges his own country can heap upon him, but a statue of gold in every part of the habitable world. The historian*, in the life of Timoleon, mentions a frequent expression of that great man, “ that he thought himself obliged to express his gratitude to the gods, who, having decreed to restore liberty to Sicily, had vouchsafed to make choice of him, in preference to all others, for so honourable a ministration.” With how much greater reason may Dr. James exult, that providence, in its gracious designs to alleviate our pains and miseries, hath distinguished him as the happy instrument of conveying a more useful and extensive blessing to the whole race of mankind, and of saving the lives of millions who are not yet in being!

* Corn. Nepos.

The practice of the late Dr. James, once made as much noise in the world as the Suttonian method of inoculation, producing both violent advocates, and its no less vehement opponents.

Dr. James knew extremely well how to turn the scale to his own side, and, in his printed defence of his patent medicine, he very warmly attacks his opponents thus :

Can any one, without scorn, says he, behold such drones of physicians (I speak generally, and therefore desire no false innuendo may be made) that after the space of so many hundred years experience and practice of their predecessors, not one single medicine hath been yet detected by them, that hath the least force, directly and *per se*, to oppose, resist, and expel a continual fever, which, by their erroneous applications, is too often proved to malignity? Should any, by a more sedulous observation, pretend, or make the least step towards the discovery of such remedies, their hatred and envy would swell against him as a legion of devils against virtue; whole societies would dart their malice at him, and torture him with all the calumnies imaginable, without sticking at any thing that should destroy him root and branch; (of which I could give you a very memorable example, were it convenient) for he who professes a reformation
of

of the art of phyfic, in expofing its impof-
tures, and advancing fuch methods and reme-
dies as are beyond thofe of the art of expecta-
tion, muft refolve to run the hazard of the
martyrdom of his reputation, life, and eftate.

As an argument againft the ufe of his pow-
ders, becaufe it was empirical, and degrading to
the profefſion to encourage it, he ſays, let me re-
mind thofe who plead the dignity of phyfic, that
if this is to be the excuſe, and this, like Moloch
is to be fupported by human facrifices, it is
the duty of every civil ſociety to treat both the
art and its profefſors like the Knights Templars,
who for their transcendent villanies were extir-
pated from the face of the earth.

It is ſtill more ridiculous, he adds, to hear the
minute practitioners and the retailers of medi-
cines ſay, that they will not preſcribe or employ
Dr. James's powder, becaufe they cannot uſe a
medicine they do not know. I wiſh they would
abide by their own rule ; for then, as they know
nothing, they would do nothing. But phyſicians
are not in the leaſt intitled to the benefit of this
evasion, for I have never once refuſed to make
any one, in conſultation, acquainted with it. I
did tell the late Sir Edward Huſſe, when we met
to conſult about Colonel Stanhope, what it was ;
and to the late Dr. Shaw I made no ſecret of it,
when I ſome years ago met him at a noble Earl's,
then in Bruton-ftreet. But no people are ſo blind

as those who obstinately shut their eyes for fear of conviction.

Many of the practitioners in physic have asserted, that they have tried my powders, and find that, so far from being of any service, they are hurtful in fevers. Here, in my turn, permit me to make a dilemma. They either have not made use of my powders with ill success, or they have. If they have not, I wish them joy of all the advantages they can gain by the falsehood. I presume I may say, without ill-breeding or offence, that every attempt of this kind is an effort of interest to strangle truth. If they have, I am sorry the health of the public should be under the care of such unfortunate or ignorant practitioners; for ignorant or unfortunate they must be, or both. How otherwise could it happen, that a lady, a clergyman, or a common overseer of a plantation, besides a thousand others, without the least pretence to medicinal knowledge, should administer my powder to many hundreds with such amazing success; and yet, under the management of those who have made the study and practice of physic the business of their lives, it should have so contrary an effect?

It is also very easy for malevolence to administer a medicine in such a manner that it cannot possibly succeed; though I think there is little probability that any one of those I have been speaking of should ever give my powders voluntarily

tarily to a patient, whilst he is able and willing to swallow other medicines every four hours, and give one or two fees every day. But suppose a patient, or his friends, should insist upon trying Dr. James's powders, a little confederacy might easily blast all hopes; a little legerdemain will easily find ways and means of substituting something very inefficacious, or even pernicious, in the place of it, of which the fever powder is to bear the blame. All these tricks have, to my knowledge, been often played off, and may be played off again.

We find Dr. James soon falling into the same situation as ruined the great Dr. Brown; but Dr. James liberates himself, and turns the rancour of his enemies to his own gain. He relates the circumstance thus:

An apothecary of reputation and considerable practice came to me some time ago, and represented to me that he had a patient of some consequence, a gentleman for whom he had a very particular regard, who had for many days laboured under an acute fever, and was attended by a physician of the first character, whose method he had reason to fear would not succeed. He said he should have been glad to propose my powder, but was certain the Doctor would infallibly fall into a rage, and reject it; and upon this desired I would advise him how he should conduct himself in a case where he had so great

an interest in the patient's recovery. I told him, though I could by no means approve his giving any thing without the approbation of the attending physician, yet I was of opinion that the saving of a life superseded all other considerations, and that therefore it would be right to try it. I gave him some powders, and the best instructions I could for their use. He prevailed on the family to permit him to administer something unknown to the Doctor, without telling them what it was. The patient took it, recovered, when the Doctor wished to attribute the merit to himself.

In treating the subject of fever, Dr. James professes to avoid theoretical disquisitions, trusting the whole to experience, as of more weight than all the systems in the world. As there may be some, says he, whose lucrative views may tempt them to persecute me with all the ill humour of self-interest and malice, and think that authority can weigh down truth, I would advise them, as Gamaliel said to the Jewish Magistrates, it is better to let it alone, for if it be of men, it will come to nothing, but if it be of God, ye cannot overthrow it.

Nevertheless we find, that he had some theory of fever, and that his powder acted as an evacuant of the fomes of this disease. In his time the treatment of putrid fever was conducted upon the bad principles prevalent even at the present day; and he complains, that medical men,
who

who overcame prejudice so far as to try his powders, employed at the same time medicines by which their salutary effects were prevented. For, says he, snake-root, contrayerva, Raleigh's cordial, *confectio cardiaca*, and blisters, which all excite heat in a very great degree, and exalt the fervour of the biliary juices, already too much inclined to putrefaction, are in their operations diametrically opposite to the fever powder, which is intended to evacuate or alter the offending humours contained in the stomach, liver, pancreas, and all the intestinal glands; to separate from the mass of blood, by a salutary crisis, those humours already mixed with it, and which excite and support the febrile motion and heat; to slacken the rapid motion of the blood; and to induce that coolness and temperature which enables the vital organs to perform the respective offices assigned them, and constitutes health.

Dr. Gardiner, late president of the Edinburgh College of Physicians, says that Dr. James attributed most of the virtue of his powders to their evacuating effect; for in repeated conversations with the late Sir John Pringle, on the use of his powders in fevers, he frankly owned, that their principal efficacy consisted in clearing the primæ viæ of viscid phlegm, putrid bile, and fæces. This, from long experience, he had found was an essential circumstance to be attended to in every species of fever; and, after this evacuation

tion was made, if no sweat succeeded, it was his usual practice to give small doses of his powder every four or six hours, to bring out a moisture on the skin. But, if he did not succeed in this intention, the powders were laid aside, and the cure conducted agreeable to the general practice of other physicians; and he appears to acknowledge, with more frankness and honesty than the venders of nostrums commonly possess, that all the effects of his powders were to be obtained by a judicious exhibition of tartar emetic, when the precise strength of it was known to the prescriber. For his notion of fevers was, that they all had a tendency to remit or intermit; but these changes, from a continued form, are in certain cases obstructed, either from some inflammation, or a foulness in the primæ viæ, and that his powder did not so much cure a fever, as dispose it to remit or intermit, and thereby to make way for the bark, which he properly considered to be the grand febrifuge. And, with regard to the whole of Dr. James's practice in fevers, Sir John was not only so well convinced of his judgment in his general plan of the cure of fevers, but, from the free and unreserved manner in which he answered every question put to him on that subject, that he resolved never to refuse to meet him again in consultation.

However, Dr. James, in his dissertation on fever, says many people have fallen, or rather been artfully

led into a great error, when they have thought that if my powder does not operate so as to carry itself out of the body, it is dangerous. This is so far from being true, that in at least half the cases in which I prescribe it, I give it as an alterative, without any design that it should have any, or much sensible operation; and many hundreds of people have taken it in this way for many weeks, without the least inconveniency, and to great advantage.

The supposed violence of the operation of my powder, exaggerated by those who thought it their interest to decry it, has deterred more people from taking it than any thing besides. All I can say to this is, that in general, like other medicines, it operates in proportion to the dose given; or according to what it finds in the stomach, or intestines, or to the obstruction it meets with. If I judge right, it is much actuated by the bile, when that fluid has contracted such a state as to excite or constitute a fever*; because when the

* It is not unreasonable to suppose, that some morbid alteration in the bilious juices may excite fevers, and all their symptoms, in every case but those of the symptomatical kind, and perhaps in those too. If any one is inclined to be farther informed upon this subject, let him read Frederick Hoffman's *Treatise de Bile Medicina et Veneno Corporis*. In this case, I say, any one medicine that will evacuate the offending bile, or alter it in such a manner as to render it no longer offensive, will cure the effect of it, a fever, let the cause of this defect in the bile be what it will.—DR. JAMES.

green or yellow bile is discharged, if it should be repeated for ever, it will no longer exert any emetic or cathartic efficacy, perhaps not operate at all, even in a dose much increased. I have often known it act very forcibly when the patient who took it laboured under an acute fever; and when the very same person has taken it in a larger dose, for a slight illness, it has had no tendency to excite either vomiting or stools. But, in desperate cases, I am of opinion it should be administered in such doses as may have some immediate effect; and as, upon these occasions, there is no time to lose, the sooner the operation commences the better. In other cases, however, of less urgency, it is an easy matter to regulate the doses in such a manner as to succeed without any hazard of reducing the patient, by beginning with small doses, repeating them at such intervals as the effects of the preceding shall indicate.

The only means of improving the art of healing, is either to increase the number of specific medicines, or to investigate the conduct of the natural œconomy in the spontaneous cure of distempers, so as to arrive at more certain indications, and ascertain the methods to be pursued, when nature, unassisted, is deficient, and unequal to the task.

But the case is very different where a *specific antidote* is to be administered; for here the indication is only to cure the patient by a medicine
which,

which, experience teaches, has cured twenty thousand before in the same state, when given in the same manner. Here neither the physician nor the patient hazard much. If the antidote, suppose it the bark, has cured twenty thousand, but has failed in only fifty, it is then twenty thousand to fifty, or a thousand to two and a half, that it cures the present distemper, *cæteris paribus*; and the physician has little to do, but take care of the *cæteris paribus*; and the patient little to fear, as the calculators of chances would inform him that the risque is very small. There are several *specific antidotes* besides the bark, and I make no doubt of having added one to the number.

In corroboration of this opinion, we have several well authenticated cases published by Dr. James.

THE CASE OF MISS ECCLES.

On Wednesday the 18th of March, 1748, I was directed by a lady of distinction in Westminster, to attend Miss Eccles, at her brother-in-law's, Mr. Hodges. She was about twenty-two years of age, had enjoyed a general good state of health, but was not of a very robust constitution. I understood that she came out of the country about a month before, and was soon after seized with a diarrhæa, which I had reason to believe would have terminated a fever, which now began to assail her. But it seems it was not thought proper that this should continue; for she had
taken

taken a great number of draughts and boles, in which diascordium, the bark, and other astringents and opiates were ingredients. These had the intended effect, for the diarrhæa was checked; and upon this she became exceedingly feverish, her pulse high and quick, her urine high-coloured, her countenance remarkably red and florid, and she was, at intervals, somewhat delirious*. These circumstances I collected from those about her. The morning I visited her, she had taken twenty grains of ipecacuanha, which did not operate as an emetic, but purged her copiously three times; in consequence of which she was manifestly better in all respects. I was going to prescribe, when the apothecary mentioned a physician who attended her, upon which I declined directing anything until I had seen him, and an appointment was made for our meeting the next morning at eleven. Accordingly I went at the time; but the doctor thought proper to behave in such a manner, that I left her entirely to his management. But on Tuesday, March 24, Mr. Hodges came to my house, and desired earnestly that I would see the young lady again. Accordingly I paid her a visit. Miss Eccles was at this time excessively delirious, and had been so for some days,

* Sir John Pringle constantly observes, that diarrhæa prevented putrid fever, and when stopt, fever supervened. How inattentive have physicians been to this remark!

during

during which time she had never slept ; her tongue was very much discoloured ; her pulse extremely low and quick ; her heat was excessive ; and her urine sometimes pale, and sometimes a little coloured, but crude. The medicines she had taken were *cordial* draughts, and boles every six hours, from the time I left her ; for I was informed there was some suspicion of a miliary fever, which was to be expelled through the pores of the skin. After having complained, before this lady's friends, of the hardship of attending a lady under such inauspicious circumstances, I consented to undertake the conduct of her case. I immediately applied a blister to her head, and stimulating cataplasms of mustard seed and horseradish to her feet. Meantime I took care to procure two stools by a clyster. That evening she took a dose of the fever powder, which was repeated some hours after ; but *neither had any perceivable operation*. The next day, March 25, her urine deposited a copious sediment, though she still continued delirious. I repeated the third dose of powder, which, like the preceding, had *no sensible operation*. Every body, however, about her, could perceive that she was visibly mended. In the afternoon I gave her half an ounce of Glauber's salts, which purged her twice. That night she slept. The next morning, March 26, I found her in her senses, and so much recovered, that I told the family I thought her out of danger.

ger. In a very few days the fever left her, but she remained very weak.

The following letter from the Rev. Mr. Burton of Elden, near Thetford, to Dr. James, is still more to our purpose :

SIR,

“ I have already administered above thirty
 “ dozen of powders, and they have never failed,
 “ under the blessing of God, in any one instance.
 “ They have done many surprising cures; and I
 “ cannot omit the following instance of the safety,
 “ as well as the excellency of them. A man was
 “ seized with a fever in my parish, the apparent
 “ wretchedness of whose circumstances equalled
 “ the misery of his disorder, for he was surrounded
 “ ed by a wife and seven children, who entirely
 “ depended on his labour for support, and who,
 “ in a fit of despair, had just performed, as they
 “ supposed, the last friendly act, by laying him on
 “ his side in order to die easy. In this situation,
 “ I gave him seven grains of your powder, which,
 “ by a few repetitions of that quantity, in some
 “ days perfectly restored him to health. He is
 “ now alive, and as hearty as ever. Many in-
 “ stances I have met with, wherein the powders
 “ have operated much, but removed the cause;
 “ many again in which they have been attended
 “ with *no sensible operation, yet perfected the cure.*

“ It

“ It is no inconsiderable proof of the goodness
 “ of a medicine, when the gentlemen of the fa-
 “ culty (however they publicly decry it) make
 “ use of it under a disguise themselves; and of
 “ the certainty of this I have been a witness.

“ As I have, from an experimental knowledge
 “ of the powders, the success of them at heart,
 “ as a friend to mankind in general, and to my
 “ country in particular, I should, with great con-
 “ cern, hear that the world was, by any sinister
 “ means, deprived of so valuable a medicine;
 “ and therefore I send you this to be made use of
 “ as you think proper.

“ I am, Sir,

“ Your sincere friend and humble servant,

“ GEORGE BURTON.”

It is now time I should give some account of the preparation of this famous powder.

Tartarized antimony, known commonly by the name of emetic tartar, was long, like James's powder, considered to be a specific in the cure of fevers. Basil Valentin, a Benedictine monk, was the first who recommended antimonial preparations to the attention of medical practitioners. This he did in a treatise, which he intitled *Currus triumphalis Antimonii*, which he published at the close of the fourteenth century. Among the first in

modern times, who introduced the use of antimony in fevers, was the famous Dr. Lisle, from whose grandchildren, says the Rev. Mr. Townsend, I learnt his preparation, of which the following is the form:

Boil a pound of hartshorn shavings six hours in eight quarts of water, then take them out, dry them and reduce them to a powder. To a given quantity of this add an equal weight of crude antimony, putting the whole well mixed into a crucible. Keep it eight hours on a brisk fire, frequently stirring the mixture with a long thin iron: then reduce it to a very fine powder, and keep it in a bottle for use. The dose is twenty grains.

This is nearly the preparation, continues Mr. Townsend, adopted by the College of Physicians, and, as I apprehend, was that used by Dr. James himself, with this exception, that he undoubtedly at first combined with it calomel, for which he afterwards substituted tartar emetic, in the proportion of one grain to nineteen of his powder. If this be true, here then is the recipe of Dr. James, or one equally good, though to be had at less expence. But I am giving a reason for its preference, which is not always a good one with the public, who, from an unaccountable imbecility, have greater faith in the virtues of any medicine vended as a nostrum, than when they come to know its exact composition.

composition. Physicians of practice, on many occasions, are obliged to avail themselves of this knowledge, otherwise the medicines they order lose their credit with their patients, whose faith in their virtues continues strong, even in the most simple remedies, whilst they remain ignorant of what is prescribed for them.

Dr. Cullen, speaking of antimony, says, that the preparations of antimony, however various, may be referred to two heads: the one comprehending those in which the reguline part is in a condition to be acted upon by acids; and therefore, on meeting with acids in the stomach, becomes active: and the other comprehending those preparations in which the reguline part is already joined with an acid, rendering it active.

Of each kind there are great numbers, but not differing essentially from one another. It will be enough for us to compare the calx antimonii nitrata of the Edinburgh dispensatory with the emetic tartar of the same. The former, as I judge, is nearly the same with what is called James's powder*. Which of these is best suited to the cure of fevers, as above explained, seems doubtful; but it appears to me, that, although the

* The Pulvis antimonialis of the London Pharmacopœia is intended as a substitute for, or imitation of, James's powder. The dose of it is 7 or 8 grains. It is by no means so sure in its operations as the emetic tartar; yet it has been much extolled by several eminent modern practitioners.

former may have some advantages from its flower operation, and may thereby seem to be more certainly sudorific and purgative, yet the uncertainty of its dose renders it inconvenient, has often given occasion to the timid to be disappointed, and to the bold to do mischief. On the other hand, the dose of the emetic tartar can be exactly ascertained; and I think it may be exhibited in such a manner as to produce all the advantages of the other.

Dr. Monro, brother to the professor, took the pains to examine the records of the Court of Chancery, where the preparation is given, the patentee being first sworn in the most solemn manner, that this is the true and only genuine receipt for preparing it.

RECEIPT.

“ Take antimony, calcine it with a continued protracted heat, in a flat, unglazed, earthen vessel, adding to it, from time to time, a sufficient quantity of any animal oil and salt, well dephlegmated; then boil it in melted nitre, for a considerable time, and separate the powder from the nitre, by dissolving it in water.”

When the Doctor first administered his powder, he used to join one grain of the following mercurial preparation to thirty grains of his antimonial powder; but in the latter part of his life he often declared, that he had long laid aside
the

the addition of the mercurial. His mercurial, which he called a pill, appears, by the Records of Chancery, to have been made in the following manner :

SECOND RECEIPT.

“ Purify quicksilver, by distilling it nine times from an amalgam, made with martial regulus of antimony, and a proportional quantity of sal ammoniac ; dissolve this purified quicksilver in spirit of nitre, evaporate to dryness, calcine the powder till it becomes of a gold colour ; burn spirits of wine upon it, and keep it for use.

Signed and sworn to by me,

ROBERT JAMES.”

Respecting the administration of this powder Dr. James gives the following directions :

DIRECTIONS.

If the patient is of a strong constitution, young, and full of blood, it is prudent to take away ten or twelve ounces ; though this is not always absolutely necessary, except in the beginning of a fever ; for at the latter end of a fever, when the patient is very weak and exhausted, bleeding may be prejudicial. If the patient is costive give a clyster, either of milk and brown sugar, or of warm water, with a large spoonful of salt ; or a stool
may

may be procured by two drams or more of lenitive electuary, half or three quarters of an ounce of purging salt, or from ten to twenty grains of rhubarb. But it is not meant here, that the patient should be purged much, but only that costiveness should be prevented. This part of the directions ought equally to be regarded in the treatment of every acute distemper, when any kind of evacuations are intended to be procured, not only by the powder, but by any other medicine whatever. The greatest of the modern practical authors assert, that a neglect of bleeding before a vomit, or a purge, has sent great numbers to the grave. This caution is of the more importance, when either this medicine, or any other is taken, because many apothecaries, and lower practitioners in physic, frequently vomit or purge, or both, without previous bleeding; alledging for a reason, that the pulse is very low. But in this state the lowness of the pulse is a cause for bleeding, not against it, for reasons very obvious to physicians who understand their business.

There are two papers of powder sealed up in each packet, containing about twenty grains each. —Let the patient take, in bed, half or a third of one of these papers, mixed in a spoonful of panada, any syrup, jelly of currants, barley-water, gruel, or any sort of tea; taking care that none of the powder is left in the spoon: or rather, let it be made into a bolus with conserve of
orange-

orange-peel, or almost any other conserve, or jelly. Let the patient be kept warm during the operation, and drink now and then, at pleasure, a basin of any thin, diluting liquor, warm; as gruel, barley-water, common milk whey without wine, or baum-tea. If it is attended with any sensible operation, as sickness, purging, or sweating, it is not necessary to repeat it till the operation is entirely over; and then another half paper, or a third, is to be given in the same manner as the first. By the time that the operation of the second dose is finished, the feverish heat, head-ach, thirst, dryness of the tongue, and anxiety, generally disappear, and the patient sleeps easily. In this case it is not in the least necessary to take any thing more, for without it the patient will hourly gather strength and recover.

But if any part of the fever remains, a third dose should be given, as soon as the operation of the second is over; and the same quantity (that is, a third, or half a paper) is to be repeated in the same manner, till the fever is quite cured.

But if it happens that the first dose has no sensible operation, a second should be repeated two hours after the first; and if the second has no sensible operation, in six hours, two-thirds, or a whole paper, should be given, and repeated every six or eight hours, till it operates either by purging, sweating, or vomiting, or the fever is cured; which often happens without any operation at all.

all. But the best general and plain direction is, to repeat half, or a third of a paper, once in six hours, till the disorder is removed.

A child of two or three years old may take three or four grains, or something less than a quarter of one of these papers of powder; a child of eight or nine, one-third, or more, if necessary; and one of fourteen or fifteen, the same quantity as a grown person.

If it purges, all possible care should be taken to avoid cold, and for this reason it is necessary to use a bed-pan. The distemper itself requires all these cautions, though neither this nor any other medicine had been taken. But they are more to be regarded when any medicine is taken that is expected to excite a sweat. And it must be remarked, that it is by no means intended that a patient who takes this medicine should be kept very hot by fires, bed-clothes, or any other means. It is sufficient that he is a little more defended from the air, and kept a very little warmer than in a state of health.

It sometimes happens, when little or no putrid bile is contained in the stomach, bowels, &c. that the powder, though given in the largest doses, will have no sensible operation of any kind whatever. In these cases, half or a whole paper should be repeated every four or six hours. But on these occasions it will be proper to procure two stools in twenty-four hours, either by a clyster, which

which is the most easy way, or by giving with every dose of powder, from five to ten grains of rhubarb, omitting it when the purpose is answered, and resuming it when it again becomes necessary. It is not to be concluded, that because this medicine produces no operation, either by vomiting, purging, or sweating, that it is in such case of no efficacy, much less that it can be prejudicial, by being retained in the body; for there are other discharges by which a crisis is often made, and the distemper cured, as by urine and insensible perspiration*. And there is great reason to believe it frequently acts so as to extinguish a fever, by a *specific quality*, discoverable only by experience, and which, perhaps, no one as yet is sufficiently acquainted with.

The head in fevers is often very much affected, and the patient is light-headed, insensible, or convulsed: these symptoms the powder generally removes in a little time; but as they are very troublesome and dangerous, it would be prudent to apply stimulating cataplasms all over the feet, in case they are not removed by the first or second dose, and let them be renewed every six or eight hours, till the senses return, and the head is relieved.

The cataplasms are thus made: Take equal parts of mustard-seed bruised, and horse-radish

* See VINDICATION of the fever powder by Dr. James.

scraped,

scraped, a little old yeast or barm, and as much of the sharpest vinegar as is sufficient to make a cataplasim ; but at sea, where horse-radish and old yeast cannot be had, a cataplasim may be made with pickled herring, beat up with vinegar and fresh mustard.

But it sometimes happens, that after a fever is subdued, the patient will be low-spirited and dejected, and labour under a kind of languor for some days. In such a case I do not think it at all necessary to repeat this medicine, or give any other whatever. But if the heat is moderated, the tongue much cleared, the pulse regular, and not too quick ; if the urine deposits an equal sediment, and the patient begins to sleep, I esteem nothing but a little care requisite for his absolute recovery ; unless in case of costiveness, where it may be prudent to give a stool or two by half an ounce of Glauber's salt, or manna, or any other gentle cathartic.

In this general direction there is no mention made of bark ; although Dr. James, throughout his account and defence of his powder, extols the use of bark, after their operation, to prevent a return of fever, and to give tone. Among several, we will select the following cure published by him :

Robert Kay was taken ill of a fever on Saturday, July 9, 1774. On Sunday evening he went to bed without any violent symptoms ; but in the night he was seized with a delirium, insomuch
that

that very early on Monday morning he came down stairs naked, and behaved in every respect like a person light-headed. All Monday and Tuesday the delirium continued in such a manner, that he was very outrageous; and it was with great difficulty that two or more persons, whom his master placed about him, could keep him in bed.

Tuesday morning, July 12, he took a dose of seven grains of Dr. James's fever powder, which was repeated three times during the same night. It operated principally by sweat, yet gave him four or five stools.

Wednesday morning, July 13, he was better, though not entirely free from delirium: it was, however, thought proper to give him the *bark*. This morning he had two hours sleep, which he had not had for three days before. In the evening, about seven, the violence of the delirium returned. He immediately took ten grains of the fever powder, and repeated it in six hours. He had three or four hours sleep in the night, and was quiet.

Thursday, July 14, his delirium left him. The bark, however, was still continued, and he had no signs of fever the whole day. He passed the night with great ease and much sleep, and has been ever since perfectly well.

The observation which Dr. James makes on the following cure is: "The above is very
"worthy

“ worthy the attention of the public, as it is an in-
 “ stance of the great efficacy of the *fever powder*
 “ and the *bark*, when mutually employed to assist
 “ each other. It is a remarkable property of the
 “ powder, that in the very worst cases, if it does
 “ not effect a cure itself, it generally brings on a
 “ remission, so as to give an opening for the *bark* ;
 “ and by continuing this during the remission, and
 “ the former during the fit, the most dangerous
 “ and difficult fevers will be generally subdued in a
 “ very short time.”

In the Medical Dictionary, published by Dr. James, he endeavours to insinuate that the preparation of his powder much resembles, if it be not the very same, as what is called the AL-CHEMISTICAL REGULUS OF ANTIMONY.

PROCESS.

1. Take of iron nails, half a pound; put them into a strong, large, sound crucible, cover it with a tile, place it in a wind-furnace, and cautiously raise a fire till the nails are perfectly ignited. Then, by a little at a time, add to the best powdered antimony, made very dry and hot, sixteen ounces, and cover the crucible a little with a tile. As soon as ever the antimony is thrown in, it emits a white fume; and, not a great while after, is put into fusion, and at the same time causes the iron to melt also. When they are reduced to a very
 liquid

liquid state, which may be examined by a long tobacco-pipe, throw in, gradually, of the hottest, driest powder of nitre, three ounces. Upon every injection, there is excited a prodigious ebullition, noise, and conflict, and sometimes a crackling; and if a person should unwarily throw in the nitre damp, the whole would fly about with imminent danger to the operator. When they have stood in this condition some time, the matter casts out lucid sparks. Let it flow, like water, for the space of four or five minutes, and then pour it out into a melting cone, which strike gently; and when the mass is grown cold, knock it out. In this manner I have had eleven ounces six drams of regulus, and eleven ounces of scorix; so that, with what stuck to the crucible whilst it was pouring out, there were lost four ounces two drams.

2. Put this regulus into another crucible, set it in the fire, melt it, and, when it is in fusion, add to it three ounces of antimony, reduced to powder, and made very hot and dry; and when this is melted, throw in, by degrees, three ounces of powder of nitre, very hot and dry also; and then fuse them with an intense fire, and keep the matter in a perfect liquid state for the space of five minutes; after which pour it into a melting cone as before. By this means I have procured ten ounces and six drams of regulus, which were purer than the former.

3. Take

3. Take this second regulus, put it into a fresh crucible, melt it again, and throw into it three ounces more of nitre, with the same caution as before. Melt the mixture with a very intense fire, for otherwise it will not flow, and then pour it into a cone. By this third fusion I have had nine ounces two drams of an exceeding white silver-coloured regulus, that was surprisingly starry, and two ounces seven drams of scoriæ; so that there was lost one ounce five drams.

4. Once more melt this third regulus in another crucible, and then add three ounces of nitre as before, which will then require a prodigious strong fire to melt it, though the regulus flows at the bottom of the crucible like water. Keep them in perfect fusion for the space of an hour, and then pour them into a cone. Thus then I have obtained seven ounces three drams of an exceeding pure and beautiful starry regulus, that looked just like silver, together with two ounces seven drams of scoriæ, of a golden colour, and a perfect fiery taste; which is a pretty extraordinary phenomenon.

5. For this operation, the crucibles must be very found, strong, and large, and must be heated very gradually: the fire must be equally kept up to its greatest strength, for otherwise the nitre will not melt; and the cones must be moderately warm, very clean, and perfectly dry, and, within, rubbed
over

over with tallow. If you attend to these cautions, you will meet with success.

REMARKS BY DR. JAMES.

There are many useful things to be learned from this operation: iron, which is extremely difficult of fusion, melts in antimony, as all other metals do in lead; and then the iron, being corroded by the melted antimony, becomes combined with its sulphur; whilst both the mercurial part of the iron and the antimony are expelled, and, uniting into one mass, fall to the bottom; and the sulphur of them both rises together to the top. The nitre that is thrown in burns furiously with these sulphureous bodies, agitates the melted elements to their very inmost parts, and hence unites those that are similar, and separates the heterogeneous: by the force of the antimony the iron is destroyed, and its metallic sulphur, which is the gold of the alchymists, unites with the internal metallic sulphur of the antimony, and thus both remain combined with the mercurial part of the antimony; and hence you have a regulus, which is beautified with a star, and by its fine silver colour teaches us the exceeding purity of its mercury. The scoriæ contains iron, sulphur of antimony, and nitre, united together, and changed into a wonderful body, whose secret medicinal virtues, when it is properly managed, and rightly applied, those who are acquainted with

with these things greatly extol. These scoriæ puff up surprisingly in the air : but let this suffice concerning the first fusion. In the second, the external sulphur is still farther extracted, and the metalline sulphurs of the iron and antimony are more fixed, with their mercuries, into a purer regulus. In the third fusion, the surprisng powers of the sulphureous metallic fire, that lies concealed in the regulus, begins to discover itself, which, by fixing the nitre, renders it exceeding difficult of fusion, though it was before melted by a more gentle fire than any other native salt ; and impresses upon it a remarkable igneous quality, so that, upon being applied to the tongue, it truly burns it, though its proper taste is naturally exceedingly cold ; it makes it, moreover, alcalescent, without the addition of any vegetable substance, and causes it to run spontaneously in the air, though it would remain dry in it before. The fourth fusion discovers the same things more evidently : here the pure sulphur, only by its odorous exhalation, as it were, and simple contact, changes the nitre more powerfully, and thus demonstrates the secret power of metallic sulphurs. This regulus has almost turned the heads of some of the profoundest chymists. Consult Paracelsus, Suchtenius, Philaletha, Pantaleon, Becher, and Stahl. *For my own part, when I reflect upon the time and pains I have employed in examining into the nature of this regulus, I cannot forbear being surpris'd at my own patience, and can scarcely help being ashamed*

to think, that so great a part of my life should have been spent in this enquiry.

Thus it was that every art was used to prevent the detection of the composition of this famous powder. The public mind was prepossessed greatly with the idea that it was composed of nineteen parts diaphoretic antimony*, and two of tartar emetic †. To obviate this opinion, Dr. James published the following case.

Mr. Atree, a person I had some intimacy with when he practised as a surgeon, man-midwife, and apothecary, at Wolverhampton, some time after settled in London. He one day, in conversation, told me that he had certainly discovered the preparation of my powders. I promised him, upon my word, that if he had, I would on no account disguise it to him. He informed me, with an air of triumph, that it consisted of nineteen grains of *diaphoretic antimony*, and two of the *tartar emetic*. There was something too ridiculous in this to deserve a serious answer. Mine was, that I was surprised to find he understood chemistry enough to make the discovery. The Doctor, very certain that he was in the secret of my powder, practised with it during a few months with success not much to be boasted of. But at last he himself contracted a fever. He did not fail to take his diaphoretic

* Calx antimonii.

† Antim. tart.

antimony and tartar emetic, till in a few days he became delirious. His family then called one of the most eminent and sensible of the faculty, who pronounced the case desperate, and he very soon died by his own imprudence, aided, I am sorry to say, by my too ludicrous treatment of a subject that required more seriousness.

Antimony was a great favourite of Dr. Cullen. He used to exhibit it in small doses, at distant intervals, and it appeared to him to relax the spasm on the surface, which he made the proximate cause of fever; but whatever was the theory of its operation, its successful application made it afterwards be followed by other practitioners*.

* The dose of the antimonium tartarifatum should never exceed three grains. The best method of giving it is, to dissolve three grains in six ounces of water; and of this mixture give two table spoonfuls: if no vomiting ensues within twenty minutes, repeat the dose, and continue to give a table spoonful every ten minutes till the vomiting is excited, which must be encouraged by drinking plentifully of chamomile tea, or a thin water gruel. If the emetic tartar be intended for a sudorific, two table spoonfuls of the following solution every two or three hours, will perhaps be more proper than small doses of the other.

R. Antimonii tartarifati, gr. 2.
 Aq. Cinnamom. simpl. unc. 2.
 — Font. unc. 6.
 M. F. julap.

That is,

Tartarized antimony, two grains.
 Cinnamon water, two ounces.
 Common water, six ounces.
 To be made into a julep.

Lind was also much attached to antimonials. Having, says this eminent physician, made very frequent mention of the virtue of antimonials in fever in all his works, I shall now, he adds, take this opportunity of delivering my sentiments fully upon them. He proceeds thus :

Antimony appears to possess a virtue eminently febrifuge, which it frequently exerts independent of any evacuation.

The uncertain operation of antimonials, and the profuse evacuations which they have been, in some cases, known to produce, have been urged as objections against their use in fevers ; but such objections arise merely from an injudicious administration of the medicine, or from an ignorance of the proper method of managing it.

Large doses of antimonials, or even smaller ones, too frequently repeated, have sometimes brought on evacuations which have sunk the patient ; it is, therefore, always adviseable to begin with a small dose, in order first to judge of its effects on the constitution.

Should antimonials, notwithstanding this precaution, prove unexpectedly violent in their operation, opium will always effectually check them. The opiate may be given either alone, to restrain evacuations already too violent, or may be combined with the antimonial to prevent them. Antimonials thus guarded, may be administered with success, even in fevers attended with a purging.

An opiate, given after the too severe operation of an antimonial, checks all further evacuation, recruits the patient's exhausted strength, and in such a case seems requisite to the entire removal of the fever; it allays the febrile anxiety, and brings on a state of perfect ease, without which the success of antimony would not be complete.

Some preparations of antimony contain this febrifuge virtue in a high degree, as tartarum emeticum, and Dr. James's powder. Others contain it in a less degree, as vinum antimoniale.

By an order from the Admiralty, the navy of England, and the naval hospitals, were supplied with a medicine, called Doctor James's Fever Powder; with instructions to observe and report the effects of it in fevers. In consequence of that order, this powder has been given at Haslar Hospital, in various cases of fevers, to several thousand patients. A third or fourth part of the powder contained in one paper was commonly prescribed at first, and repeated every four hours. When the whole quantity in a paper, which varies in weight from 24 to 30 grains; had been thus administered, without producing any sensible effect, half a paper was given in one dose, and repeated every six or eight hours. After which, if the patient still remained costive, and it was judged that an evacuation would be useful, a whole paper was administered at once: that quantity having been frequently found a mild and efficacious
 purge,

purge, even after the recess of the fever. If the patient could swallow a bolus, this powder was mixed with *conserva fructus cynosbati*, except when there was a diarrhœa, or too frequent stools; in which case it was administered in the *philonium Londinense*. When there was a *subfultus tendinum*, four or five grains of camphire were added to the powder; and other medicines occasionally. This powder was given with most success, when the head was affected with violent pain, or stupor, and often when the patient was delirious or comatose, or both; in which last state, after he had continued several days, there were many instances of an apparent and salutary effect from this medicine, even when it acted merely as an alterative. The *tartarum emeticum*, from repeated trials, I find to be possessed of a virtue similar to that of Dr. James's powder. Like that powder, it requires also to be occasionally compounded with other medicines, with camphire or nitre, to improve its efficacy, or with opiates, to prevent its irritation of the stomach and bowels. Half a grain* of it will be quite sufficient for the first dose, which may be repeated every six hours; and to produce evacuations, may be occasionally increased.

* *Recipe aquæ Alexiteriæ simplicis drachmas decem, aquæ Alexiteriæ spirituosæ, syrûpi e corticibus aurantiorum, singulorum drachmam unam, tartari emetici granum dimidium. Misce. Fiat haustus, cui pro re nata adde nitri grana tria.*

The vinum antimoniale, upon several comparative trials, I have found to be possessed of a less degree of febrifuge virtue than the tartar emetic. I have, however, sometimes prescribed with success the vinum antimoniale in large quantities, when a patient in a fever had continued for several days in a doubtful state of recovery, comatose, and insensible, with a continual stupor on the brain, and a violent strugle and oppression of the vital organs. In this case, I give a drachm of it diluted with water, and repeat it every two hours, with the increase of half that quantity, until an ounce is taken, or some sensible effect produced. If it brings an inclination to vomit, this evacuation should be promoted by drinking warm water; and if there be a tendency to a looseness, forty drops of the tinctura opii should be added to each ounce of the wine.

A DIGRESSION.

A DIGRESSION.

SECT. II.

ON THE PROGRESS OF QUACKERY.

I CANNOT help here observing, that although the world is greatly indebted to Dr. James for the introduction of antimony, that his conduct has introduced a system of *quackery* most baleful to mankind. The most dangerous remedies are now publickly vended, and find patrons, and the people swallow them down with greediness, seeing that Dr. James had his enemies, why should not the same be the case of _____, who for sixteen pounds, or less, has purchased a St. Andrew's degree. Hence young men educated to the profession, have quitted the paths of honour, and the line of their ancestors, to deceive a credulous people with a pretended nostrum. When practitioners thus league themselves with cobblers, tinkers, Jews, linen-draper, dancing-masters, keepers of brothels, and mountebanks, they deserve the reproach of the faculty, with the public indignation.

In

In vain are colleges endowed, and called *royal* foundations, if this growing evil be not checked. Bacon has too well observed, that the length of diseases, the sweets of life, the illusive flattery of hope, and the recommendations of the patient's officious friends, are sufficient reasons for the vilest and most ignorant *quacks* being often preferred to the best physicians.

Friend, who at a very early time of life acquired the reputation of a great physician and a fine writer, adopted the same reasoning, and met with the most unjust fate.—The reader will see what is said on this subject by this physician, (who was so despised by *empirics* and the *vulgar*, and so much cherished by all respectable people) in his letter to his friend Mead.—The esteem, says he, in which *quacks* are held, is the reason why men of true genius, who might have distinguished themselves in physic, have sought for reputation, by attaching themselves to other sciences; and in these they have often excelled those who seemed to be particularly destined by nature to this cultivation.—In good truth, they who look up only at glory and reputation, have surely good reason for abandoning an art, in which the prejudices of the vulgar give as much to mediocrity as to the rarest and most accomplished merit, and the practice of which is distinguished by the public only in proportion to the boastings of the practitioner.

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The *quack* has a considerable advantage over the regular practitioner.—If any one of his promises become realized, he is applauded to the skies; and if the patient finds himself deceived, he is obliged in honour to be silent, that he may not expose himself to blame, for having confided himself to a *wretch* who gains much by deceit, as the number of simple people is always the greatest.—Besides, this *daring man* risks no loss of reputation; because, as it exists only amongst ignorant people, the blame will always incline towards those who have listened to him.—Men are so fond of the marvellous, that the *quack* has, above all others, the power of making the vulgar relish novelty.—The more absurd his promises are, the more he is attended to.—He applies a strange name to a medicine he has just gathered at the entrance of the village, and then giving the detail of his miracles, this medicine is adopted as the cure of every infirmity.

BUT IS IT NOT UNACCOUNTABLE, THAT THE STATE SHOULD SUFFER THIS DESTRUCTIVE BREED? FOR SURELY THE PEOPLE, BLIND AND IGNORANT AS THEY ARE, OUGHT NOT TO BE ABANDONED TO THE PREY OF THESE IMPUDENT AND DANGEROUS MEN.—IF SOCIETY CLAIMS A RIGHT TO OPPOSE THE DESIGNS OF ANY INDIVIDUAL, WHO WISHES TO RENDER ANOTHER UNHAPPY, WHY SHOULD NOT SHE PRESERVE THE SAME PRIVILEGE, WHEN THE

SAFETY

SAFETY OF A GREATER NUMBER OF HER MEMBERS BECOMES CONCERNED?—IF SOCIETY HAS SUCH A RIGHT, SHE IS SURELY BLAMABLE FOR NOT EXERCISING IT.—THE SOVEREIGN WILL ALWAYS BE DISPOSED TO INCLINE A FAVOURABLE EAR TO REPRESENTATIONS WHICH MAY BE MADE TO HIM ON THIS SUBJECT.—THE COLLEGES OF PHYSIC OUGHT TO UNITE IN THE REFORMATION OF THESE ABUSES, BY REPRESENTING THEM TO THE LEGISLATURE.

The life of a negro slave is valued at an hundred pounds, and if we calculate the deaths occasioned by *quack medicines*, there is no difficulty to calculate the vast loss to the community by these *legal murderers*;—I should give them too fair a title to call them only *purse-takers*.

THE SMALL ANNUAL SUM THESE *wretches* PAY FOR THEIR INDULGENCES* SURELY CAN BE NO COMPENSATION TO THE LOSS SUSTAINED BY THE DESTRUCTION OF THE LIVES OF SUCH A NUMBER OF THE COMMUNITY.— BESIDES, IT HAS BEEN BEFORE PROVED,† THAT *get money* IS NO EXCUSE FOR *mal-administration* IN ANY GOVERNMENT:

* The LICENCE is One Guinea.

† Vide POLITICAL EXTRACTS, Vol. II. and III. which investigates the administration of governments, by the author of this work.

THIS IMMENSE EVIL OUGHT THEN IMMEDIATELY TO BE CHECKED BY A PATERNAL LEGISLATURE, AND REWARDS GIVEN FOR ANY NOBLE DISCOVERIES IN MEDICINE; JUST AS AN ADEQUATE RECOMPENCE FROM PARLIAMENT WAS FORMERLY BESTOWED UPON MRS. STEVENS FOR HER SOLVENT, AND HAS BEEN GIVEN TO SOME OTHERS, WHERE PROPER APPLICATION HAS BEEN MADE FOR EMINENT DISCOVERIES.

PRACTICAL

PRACTICAL OBSERVATIONS.

SECT. III.

OF MERCURY IN PUTRID FEVER.

As Dr. Crawford, brother to the late celebrated Dr. Adair Crawford, inventor of a most ingenious doctrine relative to animal heat, of whom we may justly say,

————— par nobile fratrum,

was returning to England from India, in the year 1770, on board the Earl of Middlesex, an epidemic fever broke out among the crew, which seemed to threaten an alarming mortality*. Thirty of the men were seized with the characteristic symptoms of this disease. Three of the unhappy sufferers early perished. On each side the eye was now saddened with the despondence which was visible in every countenance: and the ear was distracted with the groans and difficult respiration

* For an account of this fever, vide *An Essay on Fever, accompanied with a Disease of the Liver, hitherto but little known, though very frequent and fatal in warm Climates.*—Published by Kearfley.

of those who suffered, or by the foreboding of such as had hitherto escaped. Nor was the situation of this compassionate physician less lamentable than the rest. The uplifted eye implored for help in vain! He had no clue to conduct him in his present difficulty. But the man of science does not soon yield up to despair. He investigates the hidden causes of disease, and Nature in her bounty not unfrequently blesses the laudable endeavour. Dr. Crawford opened one of the bodies of the dead, and had a demonstrative proof that the liver was the chief seat of the present disease. It was not only enlarged, but externally shewed a florid appearance. Upon this discovery he had instant recourse to bleeding and mercurial cathartics, and he observed, that where the mercury produced salivation the recovery was more striking, and he therefore exhibited mercury also with this intention.

On the 20th of May this fever attacked John Mason, a strong athletic sailor. I ordered, says Dr. Crawford, sixteen ounces of blood to be taken from him. The pulse rose immediately in fulness, and his respiration became easy. Three of the aperient pills (these were composed of mercury, aloes, soap, and jalap) were administered, and the same quantity repeated in the evening, which produced a sufficient effect. These were continued each day, so that he had taken now about half a drachm of calomel. On the 25th, his
mouth

mouth was a good deal affected, and all uneasiness in breathing was instantly removed. On the 27th the salivation abated considerably, when his respiration became proportionably oppressed, he therefore returned to the use of the pills. On the 28th the salivary discharge was again abundant, and it is not a little remarkable, Dr. Crawford adds, "that as this increased, the difficulty of breathing, and all the other symptoms of the disease diminished." This observation led me, he adds, to keep up the spitting for a few days, at the same time care was taken to prevent it from being too copious*. On the 29th, 30th, 31st, the soreness of the mouth was the only disease, and this decreasing, the sailor was soon restored to sound health.

Dr. Wade, in the East-Indies, in the year 1791, adopted the plan of Dr. Crawford, and speaks equally favourably of the febrifuge action of mercury. His plan was to evacuate the intestinal canal, and if this failed of removing the fever, he then called into his aid mercury. Mercurialunctions, says this able practitioner has been attended with very general success in the slow typhus fever, as also in the violent, acute, burning fever, which has been denominated by a variety

* When violent salivation came on, this able practitioner had recourse to opium. This often occasioned violent torment in the bowels, which was as instantly removed by juice of limes.

of appellations in the West Indies, such as yellow fever, black vomit, &c. as particular symptoms seemed most prevalent to each practitioner. This fever, with every symptom by which Doctor Lind and other authors have characterised it, has often occurred with us. In some unfortunate cases, the dissections exhibited proofs of a violent affection of the liver. After this discovery, mercury, exhibited so as to affect the mouth as soon as possible, with occasional laxatives, proved uniformly successful. In this instance, the disease is so quick in its progress to destruction, that the exhibition of mercurials should be equally rapid and vigorous. But the happy effects of a more gradual course of mercury are just as striking in those slow fevers, which would be called nervous, by European physicians, but which in our country would be esteemed the consequence of neglect or mal-treatment of preceding fevers in the continued, remittent, or intermitting forms. It will generally be found that these chronic fevers, whether they afflict the constitution without any sensible periods of absence, or only return in occasional relapses of more severity, will yield equally to the operation of mercury on the secretions, with the intervention of purgatives; they will also be found, during their first attack, to have resisted the utmost efficacy of the bark, and other medicines in common use. It may be necessary,

fary, however, to suggest a caution to the practitioner, that he should not think himself disappointed, if the operation of mercurials do not always appear to be attended with decisive effects, though the salivary glands should be considerably affected; for the ultimate benefit from this course may not be very evident for sometime after its cessation; at last, however, returning health will convince the practitioner of the success of his efforts. During the treatment, the restoration of the secretions of the bowels, particularly of the liver, is sometimes attended with such apparently disagreeable symptoms, that the practitioner may be led to form an unfavourable judgment of the plan. The formation, or the discharge of bile, which has been suppressed, deficient, or irregular for a long time, will not unfrequently be attended with severe symptoms of dysentery. To a person of experience these will afford the most favourable omen of the ultimate success of his remedies. Nothing, however, assists the salutary agency of mercury with such power, as opium, and frequent changes of air, with a diet of mild vegetables and water only.

Dr. Wade adduces several cases in confirmation of this practice.

The next physician who adopted this practice was Dr. Chisholm, who had been resident in the East Indies, and afterwards fixed himself at Grenada. He speaks of the exhibition of mercury in the
strongest

strongest terms. The way in which this physician was led to the application of mercury, was from exactly the same cause as induced Dr. Crawford. I was encouraged, says Dr. Chisholm, to this practice, by the appearances I observed in the two first bodies I opened. The liver was evidently the most diseased part, and I knew that mercury was a specific in all affections of that organ; besides it was, at all events, better to try a doubtful one than remedies of no efficacy. I accordingly administered calomel, either combined with nitre, camphor, and the antimonial powder, or in the form of a pill. After many trials of both, I preferred the last, chiefly on account of the nitre and camphor disagreeing with the stomach. The pill was generally composed of five grains of calomel, two of the antimonial powder, and one of opium; and repeated four times in the twelve hours, or eight in the twenty-four hours. I confess it was with no small degree of anxiety I ventured on this practice, unwarranted by any other authority than dissection and my own observation*; but its success justified my temerity. If salivation was speedily raised, the danger was removed, and the patient recovered. But in order to effect this, it was frequently necessary to increase the quantity and number of the doses; and, in seve-

* Dr. Crawford had long before recommended this practice, and was resident in India at the same time with Dr. Chisholm.

ral instances, I have pushed it to an almost incredible length, with astonishing success. In one case in particular, a gunner of the royal artillery, named Thomas Smith, in whom signs of recovery did not appear till the twenty-first day, fully 400 grains of calomel were given before the salivary glands were affected.

For sometime the question respecting the propriety and impropriety of this practice was much agitated among my fellow-practitioners. The principal arguments offered against it were founded on its novelty; its militating against the received theory of the nature of malignant and pestilential fevers; and on the very limited duration of the disease, which, it was said, did not admit the administration of a quantity large enough to excite salivation, whereby, even was mercury useful, time sufficient was not given it to act. To these I had to observe, that the mere novelty of a practice was no sufficient objection to it. That we were taught, by frequent experience, that medicines not long since considered as dangerous, and even poisonous, have been proved to be among the most efficacious in certain diseases: in the present instance, it was evident that there was a change brought about in the system by it, when pushed to salivation, which obviated inflammatory diathesis, without weakening, in a dangerous degree, the powers of the living principle: that this effect was illustrated by what

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has constantly and uniformly happened to those who have been cured of hepatitis by salivation, their strength having been comparatively increased after the mercury had ceased to act: that the nature of pestilential fevers was by no means generally well understood: that a remarkable peculiarity appeared during the inflammatory stage of pestilential fever, in the inflammation seizing particular organs; in its often affecting them without any external signs of such affection; in its extraordinary tendency to gangrene; in its aptitude to run into the putrescent state, when much debility was induced; in its exciting an increased afflux of blood to the brain, whereby an uncommon exhalation of serous fluid from the extremities of the arteries of that organ taking place, compression ensued, of which the dilatation of the pupils of the eyes was an incontestable proof: that as the fever was new, it could only be from what has been found useful in disorders of a nature nearly similar, we could make our selection of the means of cure; that the consideration of certain states of inflammation of the liver; of the confluent small-pox; and of the hydrocephalus internus; led us to give the preference to mercury: that the medical maxim "de quo dubitare in ejusmodi re non oportet: fatius est enim anceps auxilium experiri, quam nullum,"* of try-

* Celsi Medicina, lib. II. cap. 10.

ing even a doubtful assistance, should always regulate our practice in dangerous and dubious cases: that however short the time might be, we found salivation was often induced early enough to save the patient; and that although, in certain states of the body, and in other climates, much difficulty might arise from the tardy action of mercury; yet that, in every species of inflammation, and perhaps more especially those, the tendency of which to terminate in gangrene is great, and in a hot climate, no such difficulty existed in general, unless the medicine were to act on the intestinal canal, and consequently pass off without entering into the circulating mass. These observations had their due weight on many; *but the powerful influence of prejudice operating with all its baneful force on others, precluded conviction*; although they had the mortifying experience of the fatal tendency of the disease treated in their way. To multiply arguments and proofs drawn from analogy would be useless; those already offered are surely sufficient to justify even the *empirical* administration of mercury in the malignant pestilential fever, as it appeared here; wherein the danger was so imminent, when recourse was not had to a bold practice. I shall only add a few words on the cause of the successful treatment of the sick of the 45th regiment. I might remark, that the small number of deaths in that regiment arose from the mode of treatment adopted by Mr. White, a very ingenious young gentleman,

tleman, who attended the sick in the absence of the surgeon. The disease being new, its symptoms remarkably insidious, and its fatal tendency very uncommon, Mr. White did me the honour to consult me, and request my opinion and advice. I mentioned to him the difficulties I had for sometime laboured under, the result of my observations, and the treatment I found alone useful in the more violent cases; and recommended it to him as the most likely to be successful among his patients. He immediately adopted it, and has since frequently declared to me, that he did not lose afterwards one man, who had taken a sufficient quantity of calomel to excite salivation. *Mr. White and myself were striking instances of the efficacy of the practice; we were both infected, were very dangerously ill, and cured by exciting salivation.*

In every case wherein *salivation* took place, little farther was required than the plentiful use of nourishing simple food, and wines. But when the mercury had not this effect, or when its action was so tardy as to give room for the most serious apprehensions of the event, it was necessary to have recourse to the bark. This medicine, in remittent bilious fevers, is seldom uncommonly disgusting to the patient; for although the stomach is very often irritable in these fevers, and consequently incapable of retaining the bark, yet the patient seldom expresses any dislike to swallowing it. In putrid fever, however, this medicine

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is extremely disagreeable to the patient, and the irritability of the stomach at the period when it became necessary is so great, as very frequently to baffle every attempt to render it retentive. Nature, therefore, seemed to point out the impropriety of administering the bark, by not only rendering the palate abhorrent to it, but exciting such a degree of spasm in the stomach, as made that organ totally unequal to even the reception of it. Hence we are not to be surprised that the bark did so little in this fever. In fact, except in the third, and part of the second stage, it was not a medicine to be depended on; and even in these, the success was obtained chiefly by the agency of other medicines in restoring some degree of tone to the stomach.

Before I conclude this part of the task I have imposed on myself, I cannot help observing, that as the majority of the most useful part of society are daily exposed to the ravages of one of the most destructive calamities mankind are subject to, we have reason to consider ourselves as extremely fortunate in possessing a remedy which, under certain circumstances, may be depended on in the cure of contagious fever. There is, no doubt, the influence of old habits, and medical authority to be combated, ere the practice I have recommended can be generally adopted; but it is to be hoped that these will yield to facts and experience, the physician's only certain guides in the treatment of disease.

The following year this pestilential fever broke out afresh. On the re-appearance of this disease, I was determined, says Dr. Chisholm, to give the calomel earlier, and in much greater quantity than the preceding year. Accordingly, instead of preceding the administration of this excellent remedy with the usual evacuating medicines, I began with it, and continued it without the interposition of any other, till salivation took place. *The success attending this practice exceeded my most sanguine expectation; so great indeed was it, that I did not lose a single patient in whose case it was pushed to the full extent.* My practice will, no doubt, by many be considered as unwarrantably bold; but as its *wonderful success* has been now experienced by several other practitioners, who can bear testimony to it, I feel not the smallest hesitation in recommending it with all the fervor which an earnest wish to save the lives of men, and the fullest conviction of its power, can give rise to.

My present mode of using the calomel, is to give ten grains to an adult patient as soon as possible after I see him. This generally acts as an aperient in the degree required, about an hour or two after it is given. At the end of three hours I repeat the same dose without opium, if the first has not purged more than twice. At the end of three hours more, the same quantity is given, adding opium or not, as the preceding doses have acted. In this manner ten grains are given every three hours till the salivary glands become

come affected ; which generally happens in less than twenty-four hours from the commencement of the treatment. The effect of the medicine given in this manner, may be perceived after the third dose in general ; *the patient becoming calmer, less restless, less anxious ; his skin being softer, and possessed of an agreeable heat ; the stomach being perfectly retentive, however irritable it might have been before ; and the eyes recovering their former lustre and sensibility.* When, at length, *salivation* takes place, the patient is left *free from disease*, with a moderate warm moisture on his skin ; and very soon after, signs of returning health are indicated by calls for food, &c. The recovery of strength is proportionally rapid to that from disease ; nor is it at all necessary to have recourse to *bark*, or any other medicine whatsoever : a circumstance truly gratifying both to the patient and physician, in a disease wherein Nature revolts at the very idea of it. In fact, *calomel* is the only medicine, except the occasional addition of opium, I have latterly given ; of course the practice has been as *simple* as it has been *efficacious* : an additional encouragement to the unhappy sufferer, and to those whose situation may render them liable to receive the pestilential infection.

On my way to Europe, in the month of July last, I was detained, says Dr. Chisholm, a month at St. Christopher's, waiting for convoy. During that time, I had frequent opportunities of conversing on the malignant pestilential fever with
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some ingenious and eminent practitioners of that island; who informed me, that the want of success they experienced in the various modes of treatment they adopted during the prevalence of that epidemic, in the latter months of 1793, made them dread a second visit of it as the greatest calamity that could befall the colony. At this time the arrival of a ship at Basseterre from Martinico, with the malignant pestilential fever on board, gave me an opportunity of displaying the efficacy of the mercurial treatment; which had never before been thought or heard of there. Dr. Armstrong, who to the most pleasing manners of a gentleman adds uncommon medical ability, and the candor which usually accompanies both, attended the sick on board this vessel. The first patient was a strong, robust man, sometime before arrived from Europe, and who had the further disadvantage of having been three days ill before medical assistance could be called in. The worst symptoms had already appeared; such as continual vomiting, coma, and the delirium peculiar to the disease. The Doctor, by my advice, began with ten grains of calomel, and repeated it without opium, as it did not purge, every three hours. *To his astonishment, and contrary to the prognostic of the other medical gentlemen who saw the case, a salivation coming on before the expiration of twenty-four hours, the usual signs of returning health immediately after succeeded.*

Since

Since my arrival in England, I have had peculiar satisfaction in finding that a treatment nearly similar to the above had been adopted with great success in the malignant pestilential fever, which so fatally prevailed at Philadelphia during the autumn of 1793. Dr. Rush's medical talents and merit are too well known and too generally acknowledged to require the feeble efforts of my pen to extol them. If any thing, however, could add to the excellence of this gentleman's character, it must be his benevolent exertion, and unwearied perseverance during the existence of this dreadful calamity, in relieving his helpless and afflicted fellow-citizens, and in pursuing the mercurial mode of treatment, with the weight of prejudice and malignity in opposition to him. Such fortitude is rarely met with in the medical profession; and when it is, it must secure our admiration and respect. Whether the disease described by Dr. Rush, under the name of the "Bilious Remitting Yellow Fever," was produced in the manner the malignant pestilential fever was in Grenada, is a matter of no great importance; it is sufficient to know, that the diseases were exactly the same*; and that a similar treatment proved successful in both.

During

* Fevers have had various appellations, as the nervous fever, the jail fever, the hospital fever, the ship fever, the petechial fever, the putrid fever, and the malignant fever, yellow fever, &c. The first appellation it receives from its attacking the sensorium

During the course of my extensive practice, says Dr. Rush, the exhibition of calomel purges produces frequently *salivation*. By this accidental effect of mercury,

forium and nerves more immediately and more violently than other fevers generally do: the second, third, and fourth, from its being apt to arise in jails, hospitals, and ships, where numbers of men are often obliged to be crowded together, and where sufficient care is not always taken to have them well ventilated and cleansed; the fifth from certain spots which sometimes appear on the skin of patients labouring under this disease; the sixth, from a putrid state or tendency, supposed to take place in the blood and juices; and the seventh, from the dangerous nature and malignity of the disease, and the last, from a yellow suffusion over the skin. Of all those epithets, that of putrid, which is by much the most universal, seems, in the eyes of some, the most improper, as it implies that the same change takes place in the blood during this fever, that happens to animal substances after death, when they are in a state of putrefaction. Some physiologists have imagined that this putrescency is the cause, others that it is the effect of the fever now in question. But either as the cause or effect, the established opinion was, that the blood acquires a state of putrescency, or becomes quite putrid during this fever. Medical opinions, which are deep-rooted by time, and sanctified by authority, are received at last as unquestionable truths, which it would be folly to doubt, and presumption to investigate—the bulk of mankind are too timid for the one, and too lazy for the other. But there are some who are so much struck with the number of absurdities which have been handed down to us through ages, that their minds seem little disposed to adopt any opinion merely on account of its antiquity. Such men endeavour to bring all opinions to the test of experiment and strict observation; and if they are found not to stand those tests, reject them from their creed without further ceremony, although they should be sanctified by all the medical apostles who have written since the days of Hippocrates.

Who would not be alarmed on being informed that such a formidable

mercury, I was taught to administer it with other views than merely to cleanse the bowels, and with a success which added much to my confidence in the power that this medicine has over putrid fever. I began by prescribing the calomel in small doses, at short intervals, and afterwards I directed large quantities of the ointment to be rubbed upon the limbs. The effects of it, in every case where the mouth was affected, was very salutary and speedy, and even several persons appeared to be benefited by the mercury introduced in the system in the form of an ointment, where it did not produce salivation. In the month of October, adds Dr. Rush, I attended a gentleman in a bilious fever, which

formidable band, such a februm cohors as the following, had invaded the earth—*Nova februm terris incubuit cohors: febris inflammatoria, scorbutica, soporosa, putrida, nervosa, typhus petechialis, flava, sudatoria, colliquitiva, ardens, hectica, cephalalgica, biliosa, erysipelacea, synocha, synochus, paludosa, verminosa, maligna, &c. &c. &c.* To lay hold of the occasional symptoms which arise from the differences of constitution and other circumstances, and erect them into new diseases with terrifying names, burdens the memory, and tends to darken rather than elucidate the subject. To give terms instead of ideas, is a practice not confined to physicians: from long established custom, however, such counters seem to pass more currently, and are oftener received in exchange for gold, from them than from others. Those who are solicitous to be thought profound, do not always wish to be intelligible; they gain their purpose more effectually without it. My chief aim, on the present occasion, is to be useful. I have endeavoured to be understood, and have, therefore, included all contagious fevers under the same denomination.

ended

ended in many of the symptoms of a typhus mitior. In the lowest state of his fever, he complained of a pain in his right side, for which I ordered half an ounce of mercurial ointment to be rubbed on the part affected. The next day he complained of a sore mouth, and in the course of four and twenty hours, he was in a moderate salivation. From this time his pulse became full and slow, and his skin moist. His sleep and appetite suddenly returned, and in a day or two he was out of danger. The second precedent for a salivation in a fever, which occurred to me, was in Dr. Haller's short account of the works of Dr. Cramer*, and which I had a year before copied into my note book. The practice was, moreover, justified in point of safety, as well as the probability of success, by the accounts which Dr. Clark has lately given of the effects of a salivation in the dysentery†. I began by prescribing the calomel in small doses, at short intervals, and afterwards I directed large quantities of the ointment to be rubbed upon the limbs. The effects of it in every case in which it affected the mouth, were salutary. Dr. Woodhouse improved upon my method of exciting the salivation, by rubbing the gums with calomel, in the manner directed by Mr. Clare. It was more speedy in its opera-

* Bibliotheca Medicinæ Practicæ, vol. iii. p. 491.

† Diseases of long voyages to Hot Climates, vol. ii. p. 334.

tion in this way than in any other, and equally effectual. Several persons appeared to be benefited by the mercury introduced into the system in the form of an ointment, where it did not produce a salivation. Among these were the Rev. Dr. Blackwell, and Mr. John Davis.

The practice, however, of using mercury in putrid fever, existed prior to these gentlemen, as appears from a communication to the philanthropic Dr. Beddoes, by Mr. Hammic, on the practice of the late Dr. Geach, physician to the Plymouth Naval Hospital, in low fever.

I do myself the honour of communicating to you the following sketch of treatment pursued by my late learned and truly invaluable friend, Dr. Geach, for several years past, in the typhus, low, nervous, contagious, or putrid fever, (as it is generally called,) with great success; an account of which treatment, had he fortunately lived, it was his intention to have published the ensuing summer. The reason of its being prevented we must all most seriously lament; for a treatise issuing from his pen, on the beneficial effects of calomel and antimony in this disease, would, no doubt, have been so amply stored with facts and observations, as to have roused the universal attention of medical men to the subject.

The Doctor used candidly to confess, that he was led to this practice at first, about thirty years since, whilst attending the crew of a large Russian
ship,

ship, which had been driven into Plymouth in the greatest distress, After encountering several gales of wind, her people, from great fatigue and uncommon exertions, had become very sickly, and the typhus fever raged with great violence amongst them, accompanied with symptoms of great malignity. He then observed that the only men who escaped the contagion on board, were men under the influence of mercury. This fact made great impression on him, and ever since that time he had been accustomed to give mercury in such fevers, but not with such freedom till the last seven years of his practice, and for the last five years whilst I had the honour of being an assistant surgeon placed under him in Plymouth hospital. I have seen him prescribe it, and have prescribed it myself under his own immediate eye and controul, whenever any person was seized with this fever in the surgical wards of the hospital; and as I always attended him during that time in his visits of the wards, the number of cases has been considerable: and I have also seen it very successfully administered in some very alarming cases of typhus gravior among the poorer class of inhabitants of Plymouth Dock, and Stonehouse, whom humanity induced him to visit in those places, and to whom he had the goodness to conduct me, in order to be thoroughly convinced of the efficacy of this remedy, and thereby induced, from actual observation, to give this
medicine

medicine with confidence in my future practice ; for the doctor thought this plan only wanted publicity to obtain a preference to those usually employed in such diseases.

The following is only an imperfect outline of the plan, but even as such, I trust it may not be deemed unworthy of your perusal, imperfect, as I have not had access to his notes and observations, but at the same time I pledge myself for its faithfulness.

Whenever the doctor was called to a person labouring under symptoms of typhus fever (if within two or three days of its first attack) he used constantly to prescribe fourteen or sixteen grains of ipecacuanha, assisting its operation with chamomile tea ; three hours after the cessation of the vomiting (if the patient was delicate), a bolus of five grains of calomel, with a scruple of rhubarb was given, but if the patient was of a strong habit, a scruple of jalap, with eight or ten grains of calomel, were administered. If evacuations were not thus produced within eight or ten hours, castor oil, or some other laxative, were given occasionally till the desired effect had taken place. The windows of the room were opened in such a manner, that the room was kept perfectly cold, without subjecting the patient to a current of air ; the bed-curtains nearly all withdrawn, so that free circulation was admitted, even in winter ; taking care to have (where it
could

could be procured) frequent changes of linen. After the stools, the following boluses were immediately ordered:—calomel eight grains, pulv. antimonial. four grains, conf. cynosb. q. f. ut f. bol. to be taken every six hours when the symptoms were slight, but when the case was very urgent, or he had not been called in till the fever had made some progress, then the above quantity was given every four, three, or even every two hours, permitting weak lemonade, tamarind, or cream of tartar water to be taken for the common drink. If the fever still went on, and the patient's strength became exhausted, a little port wine, diluted with water, was allowed; usual quantity half a pint, seldom or never exceeding one pint in twenty-four hours.

To any person unaccustomed to give these boluses, diarrhœa, ptyalism, or vomiting, would naturally suggest themselves as the inevitable consequences in almost every case of their exhibition; but the fact, in a multiplicity of instances, directly proves the reverse; for in general we were obliged to order rhubarb, with kali ppt. or an electuary, made of equal parts of cream of tartar and conferv. cynosb. Ptyalism has seldom, as I have before said, followed their use, notwithstanding they have been continued to some patients every three hours, for a length of time: *but when they did affect the salivary glands, the cure was always certain and more expeditious after that*

event, appearing to check immediately the progress of the disorder.

When diarrhœa supervened, the doctor was cautious how he checked that discharge, never attempting it, unless the patient was very feeble or low; for in several instances where numerous stools have been procured, the patients have found themselves relieved of a delirium which had been on them for three or four days before, but when the diarrhœa continued profuse, exhausting the patient's strength, then means were employed for its removal, commonly a scruple of conf. opiat. or an ounce of poppy syrup sufficed: if they did not, half a grain, or a grain of opium was combined with the calomel and antimony, but seldom were we necessitated to seek the assistance of opium, and in no other way did the doctor ever administer opium in this disease.

Vomiting, when excited, was commonly allayed by the saline mixture in the state of effervescence; when this symptom much harassed the patient, the antimonial powder was reduced from four to two grains: this was the system pursued throughout the whole of the stages of this fever, *never administering any other medicine*, unless any extraordinary occurrence took place; therefore the whole dependence for a cure may be clearly perceived to be entrusted to the calomel and antimony.

In some few cases, when delirium was great, and the head much affected, a blister was applied
to

to the nape of the neck ; as soon as signs of amendment appeared, the boluses were discontinued, and not till then ; and a decoction of bark, with bals. tolu, was given ; but the bark, in substance, was never given by the doctor ; for the bad effects of it in this form, when exhibited to weak stomachs, far outweighed, in his opinion, any good it ever produced. It is well worthy of remark, that in all those cases where the symptoms were very urgent, and the putrid appearances more apparent, that there the boluses* scarcely ever were observed either to ruffle the bowels or stomach.

Now, Sir, after the above statement, it may be expected that there was some theory to defend this innovation of practice, and that I ought, after troubling you in this manner, to attempt accounting for the *modus operandi* of this medicine, which, in a variety of instances, I freely confess myself incompetent to accomplish, and even were I capable, unwilling ; for in theory we may be overthrown in various ways, but in the above account we never can ; for who can overthrow us *when truth is our foundation?* Feel assured, Sir, this was the mode of practice pursued by Dr. Geach in those cases, not only in this hospital as first surgeon, but also in a most extensive range of

* We would advise beginning with one or two grains of *calomel*, thinking that the dose mentioned by the author is too large, or it is, probably, a mistake of the press.

private practice, and of course nothing but the success attending it, could have induced him to persevere in a treatment so widely different from that pursued by other practitioners.

I beg leave to state, that my father, about five years since (in the absence of the physician), at the recommendation of Dr. Geach, pursued the above plan, with very great success, in a number of cases of typhus gravior, received into this hospital from his Majesty's ship Squirrel, on board of which ship the fever had been so violent, that the Board of Admiralty gave an order for destroying the bedding and clothes of the men, supplying them anew at Government's expence, and also, that my friend, Mr. John Fryer, visiting Assistant Dispenser at this hospital, who, when a fever of the worst species of typhus was raging among the French prisoners confined at Mill-Prison, Plymouth, about three years since, and at a time when most of the assistants there employed were confined by the fever, nobly and humanely volunteered his services, found that calomel and antimony triumphed over this common foe to all. Of their testimonies, it was the doctor's intention to have availed himself in the purposed pamphlet*.

* We are happy to announce, that it is in the press, the M. S. having been revised by Mr. Knighton, surgeon, for that purpose.

In Dr. Trotter's *Medicina Nautica*, there is a very interesting cure of yellow fever treated with calomel. I gave, says Mr. Downey, surgeon of the *Dædalus*, calomel to a sailor who was seized with the yellow fever, and as the patient passed over three days without any very dangerous symptoms supervening, I persisted in its use till 150 grains were taken. No other effect followed than the pulse becoming more soft and slow, which before had been quick and contracted: the skin also, which, previous to its use, had been hot and dry, became more soft; but the patient lay in a state little better than comatose three days. He was removed on shore, where he recovered, a plentiful salivation taking place as the symptoms of fever declined.

Upon the whole, the weight of evidence in favour of the mercurial treatment brought forwards by Dr. Clark, Dr. Rush, Dr. Wade, Dr. Geach, and particularly Dr. Chisholm, in circumstances nearly similar, must surely impress every mind, even those most influenced by prejudice, with a conviction not only of its utility, but of its certainty, if judiciously conducted.

In India, in North America, and the West India islands, medical gentlemen, totally unconnected with each other, have recurred to the same practice, and hesitate not to declare to the public, that the event has been uniformly the same. Why should not pestilential infection have its

its antidote, as well as other poisons equally fatal?
 “ They have narrow conceptions, not only of the
 “ Divine Goodness, but of the gradual progress of
 “ human knowledge, who suppose that all pesti-
 “ lential diseases shall not, like the small-pox,
 “ sooner or later cease to be the scourge and terror
 “ of mankind,*” says Dr. Rush; who adds, “ let
 “ the knowledge of this salutary innovation in
 “ medicine be generally diffused; let the confi-
 “ dence it merits be placed in it; let the destruc-
 “ tive dogmata of theorists be discarded, and no
 “ more will Pestilential Fevers be numbered
 “ among the widest outlets of human life†.”

* Rush's Account of the Bilious Yellow Fever, p. 327. A work of the greatest merit, and filled with the most benevolent views towards mankind.

† Ibid, p. 329.

PRACTICAL OBSERVATIONS.

SECT. IV.

OF NITRE IN PUTRID FEVER.

SINCE the discovery, that mercurial oxyds (mercury combined with OXYGEN) is of great efficacy in the cure of putrid fever, another remedy has been much recommended by Dr. Wood, of Newcastle ; namely, NITRE.

From the accurate observations which have been lately made, says this ingenious physician, on the effects of VITAL AIR on the blood, both in the state of circulation, and when drawn from a vein, and allowed to cool ; from the difference of colour of the returning blood with that which has just passed through the lungs ; and from our knowledge, that the red 'globules are oxydes ; and from the similar appearance which the blood, in a person labouring under typhus, has with the returning venous blood ; and from the anxiety of respiration, which they who labour under typhus fever always discover,—we can have little doubt, I think, for supposing that the deficiency of OXYGEN is the cause of the symptoms of typhus,
the

the principal of which are, besides those above-mentioned, universal debility, and a rapid tendency to a putrescent state. Hence we may conclude, that OXYGEN is the general and only corrector of this state, that it is the grand antiseptic of nature, and therefore, with the decrease of OXYGEN, will increase the tendency to putrefaction, and with the increase of the tendency to putrefaction, will the *irritability* be exhausted, and symptoms of *debility*, in both body and mind, be progressively evident.

The proximate cause of typhus fever can therefore only be removed, as must appear from what has preceded, by the application of OXYGEN in a sufficient quantity to correct this deficiency, and to restore the state of equilibrium. OXYGEN taken into the stomach in the combined state of many different *acids*, may answer this intention; but in the state of *nitre*, it seems to me the most powerful form of exhibiting it; the process for obtaining OXYGEN in the state of *gas*, in order to throw it into the system by the lungs, is not only tedious but difficult. The happy period in which this can be accomplished is, however, at last arrived. In the state, therefore, of combination with *nitre*, it appears to me at present the most effectual mode of throwing it into the system. I have lately, continues Dr. Wood, exhibited *nitre* to more than fifty patients labouring under typhus; many of whom, when I saw them,

them, had all the symptoms of this disease in a most violent degree. I did not give any previous antimonial; but I exhibited immediately the solution of *nitre*. The formula usually employed was,

- R. Nitri purificati, dr. $1\frac{1}{2}$
 Aq. distillatæ, unc. 7
 Solve falem, et adde syr. sacchari albi,
 unc. 1
 Tincturæ lavendulæ comp. dr. 2.
 F. Mist. cap. una vel duæ uncia, secunda,
 vel tertia, quaque horâ.

That is,

Take of purified nitre, one drachm and a half
 Common water, seven ounces

Dissolve the salt, and add simple syrup, an
 ounce

Compound spirit of lavender, two ounces.

For a mixture—Take one or two ounces every
 second or third hour.

Dr. Thornton has tried to improve this mixture, by adding the juice of lemon instead of the distilled water, which neutralizes the pot-ash, and increases the oxygenous virtues of the mixture.

In some of the patients, the pulse, which was from 100 to 130, was diminished in frequency, and increased in strength, before the expiration of the first 24 hours; the change, indeed, was often so great and sudden, that I could scarcely credit

credit my own senses, until repeated experience stamp the firmest conviction upon my mind.

Previous to the practice which I now pursue, adds Dr. Wood, I never visited in typhus, without experiencing some of those feelings which the physician is obliged to suffer, who expects an unsuccessful issue; but now I have no fears, and I trust that one of the most crowded avenues to the grave is at length closed; and judging, from the rapid progress acquired in the knowledge of philosophy and medicine within a very few late years, I may venture to predict, that by similar attempts, every disease, whose nature is at present obscure, will be at last clearly explained, and the professors of medicine be finally in possession of the *ne plus ultra* of their science*.

* Vide Wood on Stimuli, with a view of explaining the cause and treatment of putrid fever, a work which, for an early display of ingenuity claims the highest praise.

SECT. V.

OF ACIDS IN PUTRID FEVER.

LINNÆUS remarks, that the Author of Nature has wisely disposed our tastes according to the food best adapted for our nature. Nor is it, says he, less worthy of admiration, that our taste changes with disease, thus in a putrid fever the patient cannot endure the smell or taste of meat, but at this time *acids* are highly agreeable.

Wherever climate produces immoderate heat, benevolent Nature has taken care to relieve its parched inhabitants with fruits or juices adapted to their situation. The people of Spain and Portugal, of Turkey, and Asia in general, live on grapes, peaches, nectarines, figs, melons, and rice. Those who live within the tropics have their woods, or groves, filled with orange, lemon, citron, and other delicate fruits. As they approach nearer the line, they have also pine-apples, chaddockes, and cocoa-nuts. On such they live in health, and by such they recover when sick. What might we not learn from them in dieting our sick? Nature too points the way. A man in a fever pants after every thing that can quench his thirst; and when oranges, ripe fruits,

or

or currant jellies, are craved by his feelings, and swallowed with delight, how must he be oppressed with Raleigh's Cordial Confection.

In former times the greatest attention was paid to every thing that seemed to relieve or offend the sick. The old physicians observed, with particular care, what nature craved, and found, that while foods, especially animal substances, were commonly disrelished, and often abhorred, drinks were greedily desired; and that those of the four and acescent kind only appeased the patient's longing. The ancients took the hint, and contrived such drinks. Accordingly oxymel was a principal febrifuge with Hippocrates; ripe fruits were recommended by Aræteus and Trallian; and so long ago as the tenth century, Rhazes gave acids to prevent and cure the plague.

The juices of citron and sorrel, says Senertus, resist putrefaction, peculiarly strengthen the heart, correct the feverish habit, and have aperient powers at the same time. Van Swieten boasts that the juice of ripe fruits requires no preparation, extinguishes thirst, tempers heat, opens the belly and urinary passages, and furnishes the most exquisite solace to a stomach oppressed with putrid bile. Of his master, Boerhaave, we are told, that in a stubborn putrid case he ordered, with success, ten pounds of cherries daily. One of the ablest physicians of this century has observed, that it is a vulgar error to suppose diseases are
made

made more violent, or more frequent, by an intemperate use of fruit. To add one quotation more from the best writer we know upon bilious diseases, "Small draughts of barley water, with rob of elder or currants, syrups of lemons and raspberries, not forgetting ripe fruits, mulberries, strawberries, grapes, cherries, pine-apples, are excellent; for the virtues of acids are such, as to correct all putrefaction, to resolve by their detergent qualities all bilious concretion, to favour and promote all the secretions; and, while they do not relax the solids too much, they refresh the spirits by their fragrance." I may add, that the juice of strawberries and currants extracted, with water, makes an admirable drink, as the fruits themselves make an excellent food along with bread; and we have the rob of the last in perfection and plenty all the year round, to supply the place of citron or lemon-juice.

Decoctions or infusions of frumentaceous substances, seasoned with sea salt, cream of tartar drink, thin wines, juice of lemons, and plain vinegar, do all contribute largely to an immediate, and perhaps a lasting change of a corrupted state of the juices.

When the disease is not very violent, the vegetable acids, says Dr. Fordyce, are generally sufficient; and they may be given very freely. It is a mistaken notion, that they will produce the cholic, or disagree where there already subsists one,

one, as in putrid cases of colic we know that nothing proves a speedier cure.

Chymistry has moreover furnished the shops with the nitrous, muriatic, and vitriolic acids; which, according to the chymists, differ more in their degree of concentration than in their other qualities. In a very putrid state of the juices they are used with the greatest advantage. The muriatic acid, continues Dr. Fordyce, has with me the preference, not only from the observations I have made of its effects, but from the universally acknowledged antiseptic power of the sea salt, from which it is extracted. The virtues of those acids, in general, when given internally, are distributed through all the parts of the body, the mouth, stomach, blood vessels, and secretory organs: for, applied to the mouth, they increase the secretions of saliva, and allay thirst: taken into the stomach, they excite appetite by correcting its juices; for nothing palls it more than putrid matter lodged there.

The yellow fever prevailed at the Caraccos, in South America, in October, 1793, with great mortality. Nearly all died, says Dr. Rush, who were attended by physicians. Recourse was finally had to an old woman. Her remedy was a liquor called narencado, a species of *lemonade*. With this she drenched her patients for the first two or three days. It induced plentiful sweats,
and

and probably, after correcting, discharged the acrimony of the bowels.

This plan has been pursued by Dr. Thornton with great success. Mr. Roberts, of Piccadilly, was seized with a putrid fever, and took, by Dr. Thornton's advice, the juice of a lemon every two hours. This was continued for a few days, when a diarrhœa coming on, the fever was entirely removed.

According to the experience of Krugelstein, putrid fever readily yields to the combined power of the mineral and vegetable acids. His method of exhibiting them is as follows: He first gives cream of tartar, from one to two drachms, and immediately after it, from fifteen to twenty drops of vitriolic acid. These are repeated every two or three hours, according to the exigency of the cases. Dr. Krugelstein relates a number of extraordinary cures performed by this new practice.

Dr. Thornton is in the habit of ordering the bodies of patients labouring under putrid fever, to be washed with nitre dissolved in vinegar, and has the arms plunged in this solution. The petechiæ disappear like a charm, and the body becomes impregnated with the nitre; for a piece of paper dipped in the urine of a patient thus treated, becomes touch paper, that is, it catches fire upon the approach of the least flame.

Dr. Gregory, the present illustrious professor at Edinburgh, frequently directs vinegar and
water

water in putrid fever. He orders the bodies of his typhus patients to be washed with a sponge, dipped in cold water and vinegar, at least twice a day. This operation I shall call *lavatio frigida*. The earlier this mode is practised, says this eminent physician, the better; because, in typhus the patient grows daily worse, for in the second week there is a great increase of fever, and a proportional loss of strength, but even then Dr. Gregory has found the application of the wet sponge as a miracle; nor have *delirium* or *petechiæ* been considered by him as any bar to the adoption of this remedy; on the contrary, where these have been present, and the pulse much quickened, he has, by the *lavatio frigida*, speedily reduced the pulsations from 110 to 90 in the minute, and the delirium, and other threatening symptoms, have soon after disappeared. About a fortnight ago, a student of physic, who had been ill for some days before Dr. Gregory was applied to, had, besides a great degree of fever and delirium, numerous spots, or *petechiæ*, on his breast, belly, and extremities. The *lavatio frigida* was used on the day the Doctor first visited him, and by next morning the delirium had ceased, and the *petechiæ* disappeared. The pulse, which on the preceding day had been 110, was now at 80; and by continuing the application of the wet sponge now and then, the pulse became natural on the fourth day after the Doctor first saw him. Many similar

similar cases might be adduced from the books of the clinical ward of the Royal Infirmary.

In the beginning of typhus, says Dr. Wright, of Barbadoes, I have seen the cold bath have the happiest effect; and through the day, when the sick were hot, washing the hands and face suddenly in cold water and *vinegar*, was exceedingly refreshing. Light covering in bed was directed, especially where there was any preternatural heat. In the early stages, where there were symptoms of inflammatory diathesis, we had recourse to small doses of antimonial powder alone, or mixed with a few grains of calomel. Where the body was costive, five grains of calomel proved to be the best laxative, or purge. By calomel, the pores of the skin were opened, a resolution of the fever was brought about, and the patient happily recovered. Where patients were received in the advanced stages of yellow fever, we had still recourse to calomel, and at the same time, when it was needful, to mercurial frictions, and the warm bath; and we recollect of no instance where mercury had been freely given, and persevered in till it shewed itself in the mouth, which was not attended with the happiest consequences*.

* The reader will forgive this insertion of further testimony in favour of *Calomel*.

In a letter from Dr. Harris, of Jamaica, that physician gives a very flattering account of his success in putrid fever by means of this remedy, and says, that since he exhibited calomel, he has not lost a patient in the yellow fever.

This report of Dr. Wright extends to the remitting and intermitting fever, cholera morbus, diarrhœa and dysentery; it is signed by all the gentlemen of the medical staff of Barbadoes; and is in every point of view deserving of great attention.

That acids have a powerfully antiseptic power as well as nitre, which is used with salt to preserve meat, we have the following experiments by Dr. Macbride.

Having diluted the acids of vitriol, of sea-salt, and of tartar, together with vinegar and the juice of lemons, all, as nearly as I could judge, to the same degree of weakness, leaving them just so strong as to be fairly sensible to the taste, as to change the blue juices into red, and to effervesce plainly upon the addition of an alkali; I then put some ounces of each into five phials, and in every one of them immersed a little bit of fresh mutton; and a sixth phial, with nothing but water and a bit of mutton, served as a standard.

They were all placed in a moderate degree of heat, (on the top of the furnace, along with the fermenting mixtures of the second table) and suffered to remain for four days.

TABLE I.—ACIDS diluted as ANTISEPTICS.

ACIDS.	AFTER STANDING			
	24 Hours.	48 Hours.	3 Days.	4 Days.
(1) of Vitriol.	Sweet.	Sweet.	Sweet.	Sweet.
(2) of Sea-salt	Sweet.	Sweet.	Sweet.	Sweet.
(3) of Vinegar	Sweet.	Sweet, and much swelled.	Sweet.	Sweet.
(4) of Lemons	Sweet.	Sweet, and much swelled.	Sweet.	Sweet.
(5) Water, as a Standard.	Smell grown offensive.	Very fetid.	Putrid, and soft.	

OBSERVATION.

It appears by the foregoing Table, that they were all, excepting the standard, sweet at the end of four days. I next hung up all the sweet pieces in the open air, where they soon became dry, and remained sweet.

Thus it appears that acids, even when greatly lowered, have a strong degree of power to resist putrefaction.

TABLE II.—ACIDS tried as Correctors of Putrefaction.

ACIDS of	24 Hours.	48 Hours.	3 Days.	4 Days.
Vitriol.	The bit of putrid flesh was found hard, shrivelled up, and almost sweet.	Entirely sweet; very much shrivelled and hardened.	As on the day before.	As on the day before.
Sea-salt.	Not so much hardened as in the Sp. Vitrioli, nor so much sweetened.	More sweet than on the preceding day, but not entirely sweet.	No change since yesterday.	Putrid smell returned.
Vinegar.	Softened; greatly swelled, and entirely sweet.	No change since yesterday.	No change.	Grown livid, but still soft and sweet.
Lemon-juice.	Softened; greatly swelled, and entirely sweet.	No change since yesterday.	No change.	Grown perfectly white, but quite sweet.

Here I put a number of small pieces of mutton into a phial with water, and placed it in a moderate degree of heat, in order to make them putrefy the sooner, I found them, after standing four days, sufficiently soft and putrid; I then put five of these bits of putrid mutton into as many cups, and poured, on the first, spirit of vitriol; on the 2d, spirit of sea-salt; on the 3d, vinegar; and on the 4th, fresh lemon-juice; the 5th cup

contained

contained only water, and was left as a standard, by which the others were to be compared. The mineral acids in this experiment were diluted so as to reduce them, as nearly as could be judged, to the strength of the vinegar that was used.

Now as sulphur, &c. have no antiseptic power, but when combined with oxygen, very sulphuric or vitriolic acid, it has this property in a conspicuous degree; is it not, therefore, from the *oxygen* that this power must be derived*?

The following letter from Sir William Fordyce to Sir John Sinclair, President of the Board of Agriculture, sets the virtue of acids in putrid fever in the strongest point of view.

George Street, Hanover Square,
June 1, 1799.

DEAR SIR JOHN,

When I devoted myself to the study of physic, as far back as the year 1743, there prevailed at Uppingham, in Rutlandshire, and the neighbouring villages, a malignant sort of small-pox, which justly alarmed that part of the country, insomuch that every medical practitioner, who looked after the infected, was precluded from visiting patients in other diseases; by which means those in that

* Vide the Section on the Rationale of the Operation of Oxygenous Substances on the Animal Body.

distemper

distemper came to be totally deserted. In this calamity the overseers of ten or twelve adjacent parishes solicited from me such physical aids as I was capable of giving. From a careful perusal of Dr. Sydenham on the Small-pox, joined to the daily instructions I received from a favourite pupil of the immortal Boerhaave, I proceeded to take the best care I could of my new patients.

I soon discovered in what cases the antiseptic medicines, as oxymel, cream of tartar, lemon juice, the vitriolic and nitrous acids, with wine and opiates, were likely to be necessary or useful; and under what circumstances recourse was to be had to the lancet, and the antiphlogistic regimen.

From that period to the present, I have been naturally curious to examine the works of such writers, whether ancient or modern, as might be able to furnish me with information concerning *malignant diseases*, the most to be dreaded, and the most difficult to cure.

Excepting the boils recorded in the Old Testament, I have not met with an account of any distemper that could with propriety be termed pestilential before the age of Hippocrates, the father of physic; who describes an endemic, to which he gives that name, and in which he mentions a variety of symptoms nearly allied to those of putrid diseases in our time, but not specifically characteristic of the Pestilence. Nor does the
plague

plague of Athens, as represented by Thucydides, who was himself infected by it, and whose narrative is the best I have found in any ancient author, sufficiently resemble the plague of London, Marseilles, or Moscow, to justify a comparison between them. In short, no history of the symptoms or cure of the pest, in the true sense of that word, has been transmitted to us, as far as I can recollect, which could authorize or lead to a plan for preventing so formidable a malady, or for nipping it in the bud when it begins to appear:—a circumstance that reflects double honour on the accomplished and magnanimous Empress of the North, for the directions she gave on the breaking out of the plague at Moscow, of which the particulars have been described by Dr. Samoilowitz, with a precision that renders of little moment all that had before been written on the pestilence in general.

His valuable work comes recommended by this peculiar advantage; that he describes the disease in all its stages, from his own experience as well as observation, having voluntarily taken up his abode in one hospital after another, for the benevolent purpose of receiving and attending the infected, from the first appearance of that most alarming disease; though he was not ignorant that the very touch of those unfortunate persons, or of any thing that had touched them, was fatal.

So

So far did his humanity, heroism, and love of his country, carry that amiable man! How superior to those names that have been often so loudly, though so unjustly, celebrated for their achievements in the destruction of millions!

What remains for me is to point out, if possible, some simple, easy, and rational method of putting the human body, where the disease in question prevails, into such a state as shall probably guard it against being affected by this deadly poison. That such a prophylactic may be found in the *muratic acid*, or the *concentrated spirit of sea-salt*, I am induced to believe for the *reasons*, and from the *facts*, which I will now subjoin.

Almost thirty years have elapsed since I heard by accident of a dry-salter, who had acquired a great reputation and a large fortune, from possessing a secret that had enabled him to send out to the Indies, and other hot countries, beef and pork in a better state of preservation than any of the trade. As he was observed to pour into each cask a small bottle of transparent liquor, it occurred to me, that this could be no other than the *spirit of sea-salt*; and I began to wonder how a preparation, the greatest antiseptic in nature, and extracted from a material that had been in use from the beginning of time, for preserving as well as seasoning food, should have remained unemployed for the purpose of preserving from putrefaction the juices of the human body; while the

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the *nitrous* and *vitriolic acids* had been so often used in the practice of medicine. It seemed the more surprising, now that chymistry had taught us to extract the *muriatic acids*, alike pleasant to the taste, and refreshing to the senses, at so small an expence, from a material furnished by Providence in the greatest plenty. If salt itself was found so beneficial for preventing putrefaction in animal substances, would not the extract from it operate in the same manner on our juices, with a power increased in proportion to its superior purity and strength?

Constantine Rhodocanacides, a Greek, who calls himself his Majesty's chymist, published a pamphlet in 1664, expressly on the internal and external uses of the *muriatic acid*, of which he claims the honour of being the inventor; at least, he probably distilled it in a purer state than it had been done by any body before that period. He published at the same time several certificates of the great benefit that had been received from it.

In a variety of complaints he sold it as a nostrum, and calls it the Alexicacon Spirit of the World, recommending it in all cases: "When, " says he, we consider the noble and universal " character of sea-salt, the ingenious must con- " clude, that a spirit separated from its dregs, and " presented to us in its strength and vigour, can- " not but be worth welcome reception." And then

then he goes on to recapitulate its use externally, as well as internally; recommending it as preferable to *lemon juice* and *vinegar*, as more healthily taken mixed with water, beer, ale, cyder, or wine, and as proper for all sorts of cookery; adding, that no error can be committed in taking any quantity from ten to forty drops; and that, as a preservative, that quantity will serve. But if any man be actually sick, he asserts its being a received preservative against the *plague*: yet we do not find any writer concerning the plague of London, who either at that time, or since, has mentioned its internal use. I should add, that he recommended the use of it to travellers by sea or land, in the water and putrid things that they are forced to live on. It may be taken to the amount of *one hundred drops*, according to the quantity of malignant symptoms, in all their drinks, and mixed with all their food, within the twenty-four hours.

From these hints, I was led on, continues Sir William, to use it internally in all *putrid fevers*; and this I have done with constant success ever since, especially where I found the tongue black and dry, with a black glare on the teeth, and the worst sort of putrid fever; and it has proved, in truth, *wonderfully efficacious* on such occasions, in checking the dyscrasy of the humours, in restoring the vital powers, that are more or less broken
down

down according to the degree of putrefaction, and in changing the petechiæ from a purple to a brown, and still more diluted or redder colour, till they become quite evanescent.

I might here mention a great variety of cases to illustrate its *surprising power* in correcting the most putrid state of the juices; but shall confine myself to a few, which I hope will be sufficient.

The Rev. Mr. Stuart, son to the Earl of Bute, was in the year 178 taken with the usual symptoms of a *putrid fever*, violent head-ach, pain in his loins, sickness at his stomach, anguish about the præcordia, and extreme debility, with delirium. A vast number of the true petechiæ, purple as violets, perhaps not fewer than a thousand, made their appearance at the same time. We had immediate recourse to the *muratic acid* in great abundance; giving him likewise camphor and Mindereri spirit, with wines, pine-apples, grapes, and other ripe fruits. In the course of eight-and-forty hours, the spots were changed to a *brown* colour; and in a few days more, he was left in a state of safety. I could not prevent his Noble Father from witnessing, in person, the progress of a disease that often proves dangerously infectious. His Lordship observed, with *astonishment* and *delight*, the operation of this *admirable medicine*. He has since repeatedly expressed an earnest wish to see its powers made public, from his conviction of its being calculated to prevent,

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as well as extinguish, the worst symptoms of putrid diseases.

When the late Earl of Morton charged me with the care of the present Lord, while a youth, labouring under the same distemper, I comforted his Lordship extremely in the hope of preserving his son, if I could have time to *pickle his juices with the spirit of sea-salt*; which I did very largely, and it succeeded. (After this, he recommended me warmly to those of his friends who required such pickling in similar cases.)

I was desired some weeks ago by Mr. Blifs, the apothecary at Hampstead, to inspect some eruptions of an uncommon kind on Master Plenderleith, who complained of such an extreme debility as gave his friends great uneasiness. I immediately discovered the symptoms of *petechial fever*. Besides the usual medicines, bark, camphire, and spiritus Mindereri, he took, by my directions, every twenty-four hours, to the amount of eighty-six drops of the *muriatic acid*, which in the course of a few days changed entirely the appearance of the purples, and left him in safety.

It were needless to quote more cases in proof of the *wonderful efficacy* of the *muriatic acid* in the *most malignant diseases* of this country; but it may be proper to add, that this *truly antiseptic medicine* has been constantly used in the hospital of the Third Regiment of Foot Guards, by Messrs. Leslie, Mearns, or Hay, for *many years*, with the *greatest success* in all *putrid diseases* of that regiment.

What

What I have most earnestly at heart is, from the detail above, to press the abundant use of this most powerful antiseptic in all putrid cases, especially in those countries where they commit such ravage, and the ideas of an unavoidable destiny contribute so unhappily to its propagation and mortality.

I am, &c.

WILLIAM FORDYCE.

The dispersion of *vinegar* * has been long employed as a *preserver* against putrid fever, and at the same time is found highly advantageous to the sick. In the account that Mr. Townsend gives of his own case in opening the first volume of his

* That vinegar contains much oxygen is proved as follows: First, wine cannot be converted into vinegar but when it is exposed to air, and when this air contains oxygen gas. Secondly, this operation is accompanied by a diminution of the bulk of the air occasioned by the absorption of the oxygen gas. Thirdly, one may convert wine into vinegar by oxygenating it in any other way. Besides these facts, which prove that the acetous acid is a result of the oxygenation of wine, an experiment of Mr. Chaptal, professor of chemistry at Montpellier, shews clearly what passes in this operation. He takes some fixed air which had been disengaged from beer in fermentation; he impregnates water with it to saturation, that is, till the water has absorbed about a quantity of fixed air equal to its bulk; he puts this water in a cellar in vessels communicating with air, and in time the whole becomes converted into acetous acid, or vinegar.

elaborate

elaborate and judicious system of Therapeutics, he makes mention of the great benefit he received from vinegar.

During my fever, says this excellent writer, to exclude light was easy, but to diminish heat, it was found expedient, even at this advanced season of the year, that the room should receive ventilation from windows which opened to the north, and that those to the south should be covered externally with mats, which were sprinkled, from time to time, with water, to promote evaporation, and thereby to absorb the heat.

But as the heat still continued to distress, although it did not rise above 56 degrees of Fahrenheit's thermometer, the ceiling and the floor were sprinkled, from time to time, with vinegar*, where it appeared, till evaporation had taken place, like the finest dew, by order of my physician, Dr. Thornton.

By these operations the thermometer in my room stood commonly at 52 degrees. This effect might have been obtained by sprinkling the room with water; but there being evident symptoms of putridity, the preference was given to vinegar, as a powerful antiseptic; the quantity of vinegar consumed was six gallons in twelve days.

* This was done by putting vinegar into a hand basin, by means of a hearth broom, care being taken that the broom was not made too wet.

Besides the beneficial effect of cold, another was derived from this operation, which was to oxygenate the air and render it more fit for respiration. Vinegar contains this in abundance, and parts from it readily. Being, therefore, sprinkled like dew upon the ceiling, the evaporation corrected that part of the air which had been vitiated by the breathing of the patient, and rendered it again fit for respiration.

It moreover made respiration pleasant, relieved the oppression of my chest, and enabled me to breathe freely through the nostrils, without the assistance of the mouth, which I could not do before the vinegar was sprinkled. It greatly increased, at the same time, my appetite, and quickened my digestion.

Of the articles best for diet in putrid fever, Mr. Townsend makes mention of the following :

No. I.

Fresh butter-milk, rather sour.

No. II.

Take a pint of good butter-milk ; leave it to be sour ; then put on it a quart of warm new milk in a wooden bowl, in the bottom of which are holes large enough to transmit the whey, but not the butter-milk. In twelve hours a rich subacid curd of easy digestion will remain.

No.

No. III.

Leave a quart of new milk three or four days in a bowl till it becomes a jelly.

No. IV.

Put skim milk into a deep wooden vessel, which must have a peg at the bottom. Place this in a vessel of boiling water, and there leave it till the milk coagulates; then draw off the acid whey, restore the peg, and surround it once more with boiling water. At the end of twenty-four hours draw off more whey, and beat the curd with a wooden stick. It is then fit for use, and may be mixed with sugar.

No. V.

In a basin, or a soup plate, containing half a pint of water moderately warm, put thirty or forty snails, previously stript of their shells and washed; there let them discharge their slime.

To half a pint of this slime add a quarter of a pint of hartshorn jelly, with the whites of four eggs. Let these be beat up; then add one glass of Madeira wine or sherry, and the juice of lemon, with a little lemon-peel and cinnamon.

No. VI.

Infuse oatmeal in a wooden vessel till it ferments, and begins to acquire some degree of acidity.

dity. Strain off the liquor from the oatmeal, and evaporate by boiling to the consistence of a jelly; this may be eaten mixed with white wine and sugar.

CONCLUSION.—If, however, we are not wholly to trust to acids for the cure of putrid fever, they certainly very much conspire with other remedies to this end, and hold a high rank among those remedies called antiseptic, and in granting them to patients we really yield to the dictates of nature, if not to the principles of philosophy, which are here attempted to be set forth; namely, that substances containing *oxygen*, are the actual panacea in putrid fever.

In excuse for this long enquiry, which by some may be deemed tedious, I must beg leave to adduce the following sentiments of Baglivi:

Nihil magis igitur interesse salutis hominum puto, quam ut per manus Medicorum nova indies detegantur remediorum genera, vel jam detecta solidis observationum præceptis efficacius muniantur.

SECT. VI.

OF FIXED AIR IN PUTRID FEVER.

MERIAN, a German writer of the last century, relates a singular fact, which proves the antiseptic power of fixed air. The waters of *Schwalbach*, in the Landgravate of Hesse, are so strongly impregnated with fixed air, that even when thrown off in large quantities into some rocky caverns, through which these waters pass, they even retain their virtues, for it is found, that every kind of animal substance is preserved in these cells from putrefaction. “*In æstuosissima etiam æstate carnes quascunque absque omni putredine et fœtore conservari*.*”

Merian thus points out the effects of this volatile principle, without being acquainted with the true nature of the principle itself. The Hon. Mr. Boyle was the first who ascertained the antiseptic power of some kinds of factitious air; Sir John Pringle discovered, that putrid substances were sweetened by being immersed either in fermenting or effervescing mixtures; and Dr. Macbride has clearly proved, that it is the fixed air

Merian, *Topographia Hassiæ*, p. 123, et 127.

produced in these mixtures, which recovers putrid substances to a state of sweetness, for by repeated experiments it has been shewn that meat does not corrupt in fixed air, and that even tainted meat recovers its sweetness in this species of air.

What is usually called the anti-emetic mixture; viz.

R. Kali ppti. scr. 1.

Suc. limon. recent, unc. $\frac{1}{2}$

Sacch. alb. pulv. dr. 1

Aq. font, unc. $1\frac{1}{2}$

F. Haustus in ipso actu effervescentiæ
fumendus*:

That is,

Take of prepared kali, one scruple

Fresh lemon juice, half an ounce

White sugar in powder, a lump

Common water, an ounce and a half,

which make into a draught, to be swallowed during the effervescence, which seems to have, says the in-

* This proportion is very different from that recommended by Boerhaave. The following is Boerhaave's prescription: R. Succis recentis citrei unc. ss. Vin. Rhenani unc. j. bene mistis adde salis absinthii drach. j. In ipso actu effervescentiæ potentur. The formula, as it stands in Riverius, is this: Salis absinthii scrupulus unus cum succi Limonum cochleari mixtus, remedium est præstantissimum, præsertim in vomitu qui febribus malignis solet contingere. An excellent remedy, especially in vomiting, which frequently occurs in putrid fever. In the vomiting attendant upon putrid fever, I have frequently found Port wine, and even brandy and water repeated, produce the happiest effects, if not arrested by the effervescing draught.

genious Dr. Macbride*, a peculiar power of correcting a putrid saburra, and of restraining vomitings occasioned thereby. A mixture of hock and Seltzer water, or, which is still more powerful, as being more saturated with the native alkali, the Vahls water, with hock, makes a most elegant and grateful draught, in cases where the bile is in such a state as to require somewhat to correct its sharpness.

Among the lower orders of people, bottled porter and cyder, which philosophers know contains abundance of 'fixed air, is given to persons labouring under putrid fever, and almost miracles have been atchieved. The example, indeed, deserves to be imitated; for cautiously and prudently administered †, these would be found by the practitioner, to be remedies of the greatest efficacy.

In malignant fevers, says Dr. Percival, wines abounding with fixed air may be administered, to check the septic ferment, and sweeten the putrid *colluvies* in the *primæ viæ*. If the laxative quality of such liquors be thought an objection to the use of them, wines of a greater age may be given, impregnated with fixed air, by a simple but ingenious contrivance of my friend Dr. Priestley ‡.

* Vide Macbride's Practice of Physic.

† The lower orders always overdose every thing.

‡ This has been often successfully done by Dr. Thornton. Vide Townsend's System of Therapeutics.

The patient's common drink might also be medicated in the same way. A putrid DIARRHŒA frequently occurs in the latter stage of such disorders; and it is a most alarming and dangerous symptom. If the discharge be stopped by astringents, a putrid *fomes* is retained in the body, which aggravates the delirium and increases the fever. On the contrary, if it be suffered to take its course, the strength of the patient must soon be exhausted, and death unavoidably ensue. The injection of fixed air into the intestines, under these circumstances, bids fair to be highly serviceable; and a case of this deplorable kind has lately been communicated to me, in which the vapour of chalk and oil of vitriol, conveyed into the body by the machine employed for tobacco clysters, quickly restrained the *diarrhœa*, corrected the heat and fœtor of the stools, and in two days removed every symptom of danger*. Two similar instances of the salutary effects of mephitic air, thus administered, have occurred also in my own practice, the history of which I shall briefly lay before the reader.

Mr. W——, aged forty-four years, corpulent, inactive, with a short neck, and addicted to habits of intemperance, was attacked, on the 7th of July, 1772, with symptoms which seemed to

* Referring to the case by Mr. Hey, which is given in full, page 108.

threaten an apoplexy. On the 8th, a bilious looseness succeeded, with a profuse hæmorrhage from the nose. On the 9th, I was called to his assistance. His countenance was bloated, his eyes heavy, his skin hot, and his pulse hard, full, and oppressed. The diarrhæa continued; his stools were bilious and very offensive; and he complained of griping pains in his bowels. He had lost, before I saw him, by the directions of Mr. Hall, a surgeon of eminence in Manchester, eight ounces of blood from the arm, which was of a lax texture; and he had taken a saline mixture every sixth hour. The following draught was prescribed, and a dose of rhubarb directed to be administered at night:

R. Aq. Cinnam. ten, unc. 1.

Succ. Limon. recent. unc. $\frac{1}{2}$.

Salis Nitri gr. 12. Syr. è Succo Limon. dr. 1.

M. f. Haust.

4tis horis fumendus.

July 11. The diarrhæa was more moderate; his griping pains were abated; and he had less stupor and dejection in his countenance. Pulse 90, not so hard or oppressed. As his stools continued to be fætid, the dose of rhubarb was repeated; and instead of simple cinnamon-water, his draughts were prepared with an infusion of columbo root.

12. The diarrhæa continued ; his stools were involuntary ; and he discharged in this way a quantity of black, grumous, and fœtid blood. Pulse hard and quick ; skin hot ; tongue covered with a dark fur ; abdomen swelled ; great stupor. Ten grains of colombo root, and fifteen of the gummi rubrum astringens were added to each draught. *Fixed air*, under the form of clysters, was injected every second or third hour ; and directions were given to supply the patient plentifully with water, artificially impregnated with fixed air. A blister was also laid between his shoulders.

13. The diarrhæa continued, with frequent discharges of blood ; but the stools had now lost their fœtor. Pulse 120 ; great flatulence in the bowels, and fulness in the belly. The clysters of fixed air always diminished the tension of the abdomen, abated flatulence, and made the patient more easy and composed for some time after their injection. They were directed to be continued, together with the medicated water. The nitre was omitted, and a scruple of the Confect. Damocratis was given every fourth hour, in an infusion of columbo root.

14. The diarrhæa was now checked. His other symptoms continued as before. Blisters were applied to the arms ; and a drachm and a half of the Tinctura Serpentariæ was added to each draught.

15. His

15. His pulse was feeble, quicker, and more irregular. He dozed much; talked incoherently; and laboured under a slight degree of dyspnæa. His urine, which had hitherto assumed no remarkable appearance, now became pale. Though he discharged wind very freely, his belly was much swelled, except for a short time after the injection of the air-clysters. The following draughts were then prescribed:

R. Camphore mucilag. G. Arab. solutæ, gr. 8.
 Infus. Rad. Columbo, unc $\frac{1}{2}$. Tinct. Serpent. dr. 2.
 Confect. Card. sc. 1. Syr. è Cort. Aurant dr. 1. m. f. Haust.
 4tis horis fumendus.

Directions were given to foment his feet frequently with vinegar and warm water.

16. He has had no stool since the 14th. His abdomen is tense. No change in the other symptoms. The Tinct. Serpent. was omitted in his draughts, and an equal quantity of Tinct. Rhæi Sp. substituted in its place.

In the evening he had a motion to stool, of which he was for the first time so sensible as to give notice to his attendants. But the discharge was considerable and slightly offensive, consisted almost entirely of blood, both in a coagulated
 and

and in a liquid state. His medicines were therefore varied as follows:

R. Decoct. Cort. per unc. iſs Tinct. Cort.
ejufd. dr. 2.

Confect. Card. ſc. 1. Gum. Rubr. Aſtring.
gr. 15.

Pulv. Alumin. gr. 7. m. f. Hauſtus 4tis
horis ſumendus.

Red Port wine was now given more freely in his medicated water; and his nourishment conſiſted of ſago and ſalep.

In this ſtate, with very little variation, he continued for ſeveral days; at one time coſtive, and at another diſcharging ſmall quantities of fæces, mixed with grumous blood. The air-clyſters were continued, and the aſtringents omitted.

20. His urine was now of an amber colour, and deposited a ſlight ſediment. His pulse was more regular, and although ſtill very quick, abated in number ten ſtrokes in a minute. His head was leſs confuſed, and his ſleep ſeemed to be reſreſhing. No blood appeared in his ſtools, which were frequent, but ſmall in quantity; and his abdomen was leſs tenſe than uſual. He was extremely deaf; but gave rational anſwers to the few queſtions which were propoſed to him; and ſaid he felt no pain.

21. He

21. He passed a very restless night; his delirium recurred; his pulse beat 125 strokes in a minute; his urine was of a deep amber colour when first voided; but when cold assumed the appearance of cow's whey. The abdomen was not very tense, nor had he any further discharge of blood.

Directions were given to shave his head, and to wash it with a mixture of vinegar and brandy; the quantity of wine in his drink was diminished; and the frequent use of the pediluvium was enjoined. The air-clysters were discontinued, as his stools were not offensive, and his abdomen less distended.

22. His pulse was now small, irregular, and beat 130 strokes in a minute. The dyspnoea was greatly increased; his skin was hot, and bedewed with a clammy moisture; and every symptom seemed to indicate the approach of death. In this state he continued till evening, when he recruited a little. The next day he had several slight convulsions. His urine, which was voided plentifully, still put on the appearance of whey when cold. Cordial and antispasmodic draughts, composed of camphor, tincture of castor, and Sp. vol. aromat. were now directed; and wine was liberally administered.

24. He rose from his bed, and by the assistance of his attendants walked across the chamber.

Soon

Soon after he was seized with a violent convulsion, in which he expired.

To adduce, adds Dr. Percival, a case which terminated fatally as a proof of the efficacy of any medicine, recommended to the attention of the public, may perhaps appear singular; but cannot be deemed absurd, when that remedy answered the purposes for which it was intended. For in the instance before us, *fixed air* was employed, not with an expectation that it would cure the fever in so advanced a stage, but to obviate the symptoms of putrefaction, and to allay the uneasy irritation in the bowels. The disease was too malignant, the nervous system too violently affected, and the strength of the patient too much exhausted by the discharges of blood which he suffered, to afford hopes of recovery from the use of the most powerful antiseptics. But in the succeeding case the event proved more fortunate. Elizabeth Grundy, aged seventeen, was attacked on the 10th of December, 1772, with the usual symptoms of a continued fever. The common method of cure was pursued; but the disease increased, and soon assumed a putrid type. On the 23d, I found her in a constant delirium, with a *subfultus tendinum*. Her skin was hot and dry, her tongue black, her thirst immoderate, and her stools frequent, extremely offensive, and
for

for the most part involuntary. Her pulse beat 130 strokes in a minute; she dosed much; and was very deaf. I directed wine to be administered freely; a blister to be applied to her back; the pediluvium to be used several times in the day; and fixed air to be injected under the form of a clyster every two hours. The next day her stools were less frequent, had lost their fœtor, and were no longer discharged involuntarily; her pulse was reduced to 110 strokes in the minute; and her delirium was much abated. Directions were given to repeat the clysters, and to supply the patient liberally with wine. These means were assiduously pursued several days; and the young woman was so recruited by the 28th, that the injections were discontinued. She was now quite rational, and not averse to medicine. A decoction of Peruvian bark was therefore prescribed, by the use of which she speedily recovered her health.

We have the following letter from Mr. Hey to Dr. Priestley, concerning the effects of fixed air applied by way of clyster.

Leeds, Feb. 15th, 1772.

Reverend Sir,

Having lately experienced the good effects of fixed air in a putrid fever, applied in a manner, I believe, not heretofore made use of, I thought
it

it proper to inform you of the agreeable event, as the method of applying this powerful corrector of putrefaction took its rise principally from your observations and experiments on factitious air; and now, at your request, I send the particulars of the case I mentioned to you, as far as concerns the administration of this remedy.

January 8, 1772, Mr. Lightbowne, a young gentleman who lives with me, was seized with a fever, which, after continuing about ten days, began to be attended with those symptoms that indicate a putrescent state of the fluids.

18th. His tongue was black in the morning when I first visited him, but the blackness went off in the day-time upon drinking: he had begun to doze much the preceding day, and now he took little notice of those that were about him: his belly was loose, and had been so for some days: his pulse beat 110 strokes in a minute, and was rather low: he was ordered to take twenty-five grains of Peruvian bark, with five of tormentill root in powder, every four hours, and to use red wine and water, cold, as his common drink.

19th. I was called to visit him early in the morning, on account of a bleeding at the nose which had come on: he lost about eight ounces of blood, which was of a loose texture: the hæmorrhage was suppressed, though not without some difficulty, by means of tents made of soft lint, dipped

dipped in cold water, strongly impregnated with tincture of iron, which were introduced within the nostrils quite through to their posterior apertures; a method which has never yet failed me in like cases. His tongue was now covered with a thick black pellicle, which was not diminished by drinking: his teeth were furred with the same kind of fordid matter, and even the roof of his mouth and fauces were not free from it: his looseness and stupor continued, and he was almost incessantly muttering to himself: he took this day a scruple of the Peruvian bark, with ten grains of tormentill, every two or three hours: a starch clyster, containing a drachm of the compound powder of bole, without opium, was given morning and evening: a window was set open in his room, though it was a severe frost, and the floor was frequently sprinkled with vinegar.

20th. He continued nearly in the same state: when roused from his dozing, he generally gave a sensible answer to the questions asked him; but he immediately relapsed, and repeated his muttering. His skin was dry, and harsh, but without petechiæ. He sometimes voided his urine and fæces into the bed, but generally had sense enough to ask for the bed-pan: as he now nauseated the bark in substance, it was exchanged for Huxham's tincture, of which he took a table-spoonful every two hours in a cup full of cold water:

water: he drank sometimes a little of the tincture of roses, but his common liquors were red wine and water, or rice-water and brandy acidulated with elixir of vitriol: before drinking, he was commonly requested to rinse his mouth with water to which a little honey and vinegar had been added. His looseness rather increased, and the stools were watery, black, and fœtid: it was judged necessary to moderate this discharge, which seemed to sink him, by mixing a drachm of the *theriaca Andromachi* with each clyster.

21st. The same putrid symptoms remained, and a *subsultus tendinum* came on: his stools were more fœtid; and so hot, that the nurse assured me she could not apply her hand to the bed-pan, immediately after they were discharged, without feeling pain on this account: the medicine and clysters were repeated.

Reflecting upon the disagreeable necessity we seemed to lie under of confining this putrid matter in the intestines, lest the evacuation should destroy the *vis vitæ* before there was time to correct its bad quality, and overcome its bad effects, by the means we were using; I considered, that if this putrid ferment could be more immediately corrected, a stop would probably be put to the flux, which seemed to arise from, or at least to be increased by it; and the *fomes* of the disease would likewise be in a great measure removed. I thought nothing was so likely to effect this as
the

the introduction of fixed air into the alimentary canal, which, from the experiments of Dr. Macbride, and those you have made since his publication, appears to be the most powerful corrector of putrefaction hitherto known. I recollected what you had recommended to me as deserving to be tried in putrid diseases; I mean, the injection of this kind of air by way of clyster, and judged that in the present case such a method was clearly indicated.

The next morning I mentioned my reflections to Dr. Hird and Dr. Crowther, who kindly attended this young gentleman at my request, and proposed the following method of treatment, which, with their approbation, was immediately entered upon. We first gave him five grains of ipecacuanha, to evacuate in the most easy manner part of the putrid *colluvies*: he was then allowed to drink freely of brisk orange-wine, which contained a good deal of fixed air, yet had not lost its sweetness. The tincture of bark was continued as before; and the water, which he drank along with it, was impregnated with fixed air from the atmosphere of a large vat of fermenting wort, in the manner I had learned from you. Instead of the astringent clyster, air alone was injected, collected from a fermenting mixture of chalk and oil of vitriol: he drank a bottle of orange-wine in the course of this day, but refused any other liquor, except water and his medicine:

cine: two bladders full of air were thrown up in in the afternoon.

23d. His stools were less frequent; their heat likewise and peculiar *fætor* were considerably diminished; his muttering was much abated, and the *subsultus tendinum* had left him. Finding that part of the air was rejected when given with a bladder in the usual way, I contrived a method of injecting it which was not so liable to this inconvenience. I took the flexible tube of that instrument which is used for throwing up the fume of tobacco, and tied a small bladder to the end of it that is connected with the box made for receiving the tobacco, which I had previously taken off from the tube: I then put some bits of chalk into a six ounce phial until it was half filled; upon these I poured such a quantity of oil of vitriol as I thought capable of saturating the chalk, and immediately tied the bladder, which I had fixed to the tube, round the neck of the phial: the clyster-pipe, which was fastened to the other end of the tube, was introduced into the *anus* before the oil of vitriol was poured upon the chalk. By this method the air passed gradually into the intestines as it was generated; the rejection of it was in a great measure prevented; and the inconvenience of keeping the patient uncovered during the operation, was avoided.

24th. He was so much better, that there seemed to be no necessity for repeating the clysters: the

other means were continued. The window of his room was now kept shut.

25th. All the symptoms of putrescency had left him; his tongue and teeth were clean; there remained no unnatural blackness or *fætor* in his stools, which had now regained their proper consistence; his dozing and muttering were gone off; and the disagreeable odour of his breath and perspiration was no longer perceived. He took nourishment to-day with pleasure; and, in the afternoon, sat up an hour in his chair.

His fever, however, did not immediately leave him; but this we attributed to his having caught cold from being incautiously uncovered, when the window was open, and the weather extremely severe; for a cough, which had troubled him in some degree from the beginning, increased, and he became likewise very hoarse for several days, his pulse, at the same time, growing quicker: but these complaints also went off, and he recovered, without any return of the bad symptoms above-mentioned.

I am, Reverend Sir,

Your obliged humble servant,

WM. HEY.

POSTSCRIPT.

October 29, 1772.

Fevers of the putrid kind have been so rare in this town and in its neighbourhood, since the commence-

commencement of the present year, that I have not had an opportunity of trying again the effects of fixed air, given by way of clyster, in any case exactly similar to Mr. Lightbowne's. I have twice given water saturated with fixed air in a fever of the putrescent kind, and it agreed very well with the patients. To one of them the aerial clysters were administered, on account of a looseness which attended the fever, though the stools were not black, nor remarkably hot or fœtid.

These clysters did not remove the looseness, though there was often a greater interval than usual betwixt the evacuations, after the injection of them. The patients never complained of any uneasy distention of the belly from the air thrown up, which, indeed, is not to be wondered at, considering how readily this kind of air is absorbed by aqueous and other fluids, for which sufficient time was given, by the gradual manner of injecting it. Both those patients recovered, though the use of fixed air did not produce a crisis before the period at which such fevers usually terminate. They had neither of them the opportunity of drinking such wine as Mr. Lightbowne took after the use of fixed air was entered upon; and this, probably, was some disadvantage to them.

I find the methods of procuring fixed air, and impregnating water with it, which you have

published, are preferable to those I made use of in Mr. Lightbowne's case.

The flexible tube used for conveying the fume of tobacco into the intestines, I find to be a very convenient instrument in this case, by the method before-mentioned, (only adding water to the chalk before the oil of vitriol is instilled, as you direct,) the injection of air may be continued at pleasure, without any other inconvenience to the patient, than what may arise from his continuing in one position during the operation, which scarcely deserves to be mentioned, or from the continuance of the clyster-pipe within the anus, which is but trifling, if it be not shaken much, or pushed against the rectum.

When I said in my letter, that fixed air appeared to be the greatest corrector of putrefaction hitherto known, your philosophical researches had not then made you acquainted with that most remarkably antiseptic property of nitrous air, Since you favoured me with a view of some astonishing proofs of this, I have conceived hopes that this kind of air may likewise be applied medicinally to great advantage.

A remedy which contains much fixed air has been lately started by the Rev. Mr. Cartwright, which merits the highest attention. Seventeen years ago, says this gentleman, I went to reside at Brampton, a very populous village near
Chesterfield;

Chesterfield ; I had not been there many months before a putrid fever broke out among us. Finding by far the greater number of my new parishioners much too poor to afford themselves medical assistance, I undertook, by the help of such books on the subject of medicine as were in my possession, to prescribe for them. I early attended a boy about fourteen years of age, who was attacked by this fever. He had not been ill many days before the symptoms were unequivocally putrid. I then administered bark, wine, and such other remedies as my book directed. My exertions, however, were of no avail; his disorder grew every day more untractable and malignant, so that I was in hourly expectation of his dissolution. Being under the absolute necessity of taking a journey, before I set off I went to see him, as I thought for the last time, and I prepared his parents for the event of his death, which I considered as inevitable, and reconciled them in the best manner I was able, to a loss which I knew they would feel severely. While I was in conversation on this distressing subject with his mother, I observed in a corner of a room a small tub of wort working. The sight brought to my recollection an experiment I had somewhere met with, *of a piece of putrid meat being made sweet by being suspended over a tub of wort in the act of fermentation.* The idea instantly *flashed* into my mind, that the yeast might

might correct the putrid nature of this disease, and I instantly gave him two large spoonfuls. I then told the mother, if she found her son better, to repeat this dose every three hours. I then set out on my journey. Upon my return, after a few days, I anxiously enquired about the boy, and was informed he was recovered. I could not repress my curiosity, though I was greatly fatigued with my journey, and night was come on; I went directly to where he lived, which was three miles off, in a wild part of the moors. The boy himself opened the door, looked surprisingly well, and told me he felt better from the instant he took the yeast.

After I left Brampton, I lived in Leicestershire. My parishioners being there few and opulent, I dropped my medical character entirely, and would not even prescribe for any of my own family. One of my domestics falling ill, accordingly the apothecary was sent for. His complaint was a violent fever, which in its progress became putrid. Having great reliance, and deservedly, on the apothecary's penetration and judgment, the man was left solely to his management. His disorder, however, kept daily gaining ground, till at length the apothecary considered him in very great danger. At last, finding every effort to be of service to him baffled, he told me he considered it as a lost case, and that, in his opinion, the
man

man could not survive four and twenty hours. On the apothecary thus giving him up, I determined to try the effects of *yeast*. I gave him two large table spoonfuls. In fifteen minutes from taking the yeast his pulse, though still feeble, began to get composed and full. He, in thirty-two minutes from his taking the yeast, was able to get up from his bed, and walk in his room. At the expiration of the second hour, I gave him a basin of sago, with a good deal of *lemon*, wine, and ginger in it; he eat it with an appetite: in another hour I repeated the yeast; an hour afterwards I gave the bark as before: at the next hour he had food: next he had another dose of yeast, and then went to bed, it was nine o'clock. I went to see him the next morning at six o'clock; he told me he had a good night, and was recovered. I, however, repeated the medicine, and he was able to go about his business as usual.

About a year after this, as I was riding past a detached farm-house at the out-skirts of the village, I observed a farmer's daughter standing at the door, apparently in great affliction. On enquiring into the cause of her distress, she told me her father was dying. I dismounted, and went into the house to see him. I found him in the last stage of a putrid fever; his tongue was black; his pulse was scarcely perceptible; and he lay stretched out, like a corpse, in a state of drowsy insensibility. I immediately procured
 some

some *yeast*, which I diluted with water, and poured it down his throat. I then left him with little hopes of recovery. I returned to him in about two hours, and found him sensible, and able to converse. I then gave him a dose of bark. He afterwards took, at a proper interval, some refreshment. I staid with him till he repeated the yeast, and then left him with directions how to proceed. I called upon him the next morning at nine o'clock. I found him apparently well, walking in his garden. He was an old man, upwards of seventy.

I have since administered the yeast to above fifty persons labouring under putrid fever, and what is singular, continues this benevolent clergyman, "I have not lost *one* patient."

Dr. Thornton, whose opportunities have been great in putrid fever, having the superintendance of a dispensary * which includes the poor of nine parishes, and is situate in the vicinity of St. Giles, has made frequent trials of yeast, and speaks highly in its praise.

One day, says the Rev. Mr. Townsend, by accident, as Dr. Thornton went past a shop † in Tottenham-court Road, he heard the screams of a mother, who was agonized on seeing her child expire. These screams renewed the struggles of the child, and the nurse who attended, threatened to take

* The General Dispensary.

† Mr. Burford's.

away at this moment the child, that it might die in quiet. Dr. Thornton got down immediately some tartar emetic, which quickly acted as a vomit; and after the operation was over, he gave rhubarb, which cleared the intestines; he then ordered the child every two hours yeast and water, with wine and bark, and in three days the dying child was up and well.

The infection had spread to two others in the same house. In this child and in another the putrid fever was attended with swelled glands, which suppurated, and threatened gangrene. In a robust servant girl, it took the form of a dreadful putrid sore throat. She had an emetic, and afterwards some rhubarb, then yeast and water every two hours. The first effects of this newly discovered remedy, was that of rendering the pulse fuller and fifteen beats less in a minute, and her black tongue soon assumed a clean and red appearance. Without bark or wine she was speedily recovered.

In Dr. Beddoes' Considerations there are the following cures: Mr. Caldwell, engraver, (as Dr. Thornton reports,) requested him to go into Green-street, Leicester-fields, to attend Mr. Hadril, who, he said, it was supposed would not out-live the day. I found him labouring under a dreadful putrid sore throat: the tongue was black and thick coated, and the pulse quick and fluttering. Evacuations being first premised, yeast and
bark

bark in porter, were exhibited every two hours. His sister, who nursed him, was soon after attacked by the same fever, but the throat was not affected. She was not like her brother confined to her bed, but her weakness was so great that she could not walk across the room, nor even stand up half a minute without support. In both these cases the relief from the yeast was very striking, and they were soon cured. The wife was also infected, who received a similar benefit from the yeast.

The most extraordinary cases, however, are the following: In Husband-street, a small confined situation near Berwick-street, a fever broke out, which in the short space of a fortnight, in three houses only, swept away six persons. Dr. Thornton's assistance was at this time called in to Mrs. Woolcott, No. 1, in that street, who lay delirious and comatose, with her two children, all in the same bed. She refused medicine and food, and was obliged to be drenched in order to get either down. An emetic and cathartic being premised, they were all put upon the same plan; that is, were to take every three hours two-thirds of a glass of fresh porter, with two table spoonfuls of yeast, and the juice of half a lemon, and the food, at intervals, was the whites of eggs, which Dr. Thornton judged of all things were least subject to putrify*, beat up with some sugar and

* We know that eggs are kept for a great length of time, and the white, even under the heat of the hen's body, does not putrify, and it serves as milk to the embryo in the egg.

water, and as it was the commencement of summer, strawberries were also ordered ; and without any farther medicine from the apothecary than the emetic and purge, although the woman was at first obliged to be drenched, yet she and her whole family recovered, and this very rapidly.

Among the poor in St. Giles's, nothing is administered by Dr. Thornton, after cleansing the primæ viæ, than two table spoonfuls of yeast, in some porter, every two hours ; and out of above forty cases not one has died under this treatment ; and when we consider the difficulty there often is to make children take bark, and its frequent inefficacy, yeast must be considered as a very valuable acquisition to the *ars medendi*.

SECT. VII.

OF VITAL AIR IN PUTRID FEVER.

SEEING that fixed air and nitre pass off by the urine undecomposed*, some doubts may remain whether these act by means of their *oxygen* purely, or from their compound state, which we know to be antiseptic †, hence the natural anxiety the philosopher must feel respecting the trials of pure *oxygen air* in putrid fever, and sorry we are to say, that these, at present, have been very few.

In Dr. Beddoes' Considerations of the medicinal power of factitious air ‡, we have the following communication from Dr. Thornton, in a letter to that patriotic physician,

DEAR SIR,

IT seems reserved for the honour of the present enlightened age, to discover a scientific and successful method of treating putrid fever. The contagion has been represented as a stimulus ex-

* Hence the efficacy of fixed air in the stone, of which, in some instances, it is a solvent. Vide Hulme on Fixed Air.

† Probably this may arise from the *oxygen* they contain.

‡ See Part IV. and V. of this interesting work.

hausting

hausting the irritability of the system, which depends upon the *oxygen* in the blood; and a method of cure hypothetically deduced was to supply *this* as fast as it was *consumed* by *the excessive and morbid stimulus*. You justly reprobate the common practice of drenching patients, labouring under typhus, with wine and opiates, until they are not unfrequently stimulated to death. "If I have imputed the debility," you say, "to its real cause, our chief aim should be to restore *the principle of excitability*; and stimulants should in the meantime be exhibited with a more sparing hand." Under this persuasion I have conducted my practice, and with what success the present case will disclose.

John Lewis, chairman, living at No. 42, Compton-street, was seized with head-ache; rigors, terminating in violent sweat; great thirst; a very unpleasant taste in his mouth; delirium at night; a sense of burning in the region of the stomach; spirits exceedingly depressed; so weak as to feel his legs sink under him; his countenance was extremely vacant; his answers were incoherent; he complained of incipient deafness; being desired to put out his tongue, it appeared coated, and very brown; and there was a crackling noise in respiration; the pulse was feeble, tense, and very quick. In order to diminish the excitement, I directed an emetic, to be succeeded by a cathartic.

thartic. The former was repeated twice; the latter every night.

To impart *oxygen* to the blood, which was consuming by the excess of morbid stimulus, I made him inhale each day ten quarts of vital air to thirty of atmospheric; and besides *oxyd* emetics and aperients, I gave him *nitre*; adding a little bark and myrrh to keep up his strength.

From my journal it appears, that he progressively grew better, and in a fortnight was restored; when, by my advice, he went into the country. In another case I combined the *acetum nitrosum* (nitrous acid) with the happiest effect.

I am, &c.

R. J. THORNTON.

In the Philosophical Magazine we have also the following interesting cases.

After attending a family labouring under putrid fever, I was seized myself, says Dr. Thornton, with the same fever, but it was prevented forming by an emetic and calomel cathartic. It assailed next my wife, who being advanced in pregnancy, the same remedies could not be employed, and the fever actually formed itself. The symptoms became so alarming, that mustard cataplasms were applied to the feet, and there arising, towards the close of the disease, violent startings of the tendons, and a cold clammy sweat, with a fluttering

ing and sunk pulse, I was induced to make trial of the *oxygen air* nearly in a pure state, and Mrs. Thornton was immediately *revived* by this remedy, and after a fever, which lasted one and twenty days, recovered. A servant in the house, and a nurse, were next seized, and I had the maid taken out of bed, and made her inhale thirty quarts of vital air, mixed with twice that quantity of atmospheric, which being repeated for a few days, she was completely *restored*. The nurse had an emetic and went home. My two children were afterwards seized with the same fever, and being declared by the gentleman who attended them, past all hopes, I ordered a carriage to be procured, and took them immediately to the top of Highgate Hill, where they were composed to sleep by the keen country air, and came home greatly mended, which excursion being repeated daily, they both recovered, to the surprize of every one. Seeing the good effects of *air*, and of the facilitious *oxygen air*, I adopted both in the fullest manner in the instance about to be recorded, the result of which the reader will see from the following letter:

To Dr. Thornton,

Barnet, June 11, 1799.

DEAR SIR,

My daughter was taken the 27th of February, 1798, with chills, followed by shiverings, considerable loss of strength and depression of spirits.

She

She continued suffering much from chills for about four or five hours, after which she complained of heat and flushing in her face, not attended with much thirst, and was a little delirious that night. The next day the symptoms encreased, and the debility was so great, that I was obliged, after the first passages had been thoroughly cleansed, to have recourse to wine and bottled porter, together with cordial antiseptic medicines; which plan was pursued under your direction during the progress of the disease; towards the close of which, the poor child was so shockingly debilitated, that we expected every minute would be her last, which induced you to direct *vital air**, by which, and the constant use of strong vinegar thoroughly sprayed with a hearth-brush all over the room and curtains of the bed, revived her astonishingly; but the manner in which she constantly revived, after inhaling the *vital air*, must be chiefly attributed to it, as the vinegar had been used in the way before-mentioned almost from the very beginning of the disease, and was, I believe, not only of great use to the patient, but prevented the fever spreading in my family. No poor human being, I believe, ever had a narrower escape from death, and I shall always feel myself under the highest obligations possible to you for your attention and extra-

* Sixteen quarts of vital air, mixed with the same quantity of atmospheric air, were administered in the evening.

ordinary skill in restoring my dear child, with God's assistance, to,

Dear Sir,

Your much obliged and faithful Servant,

JOHN CORPE.

P. S. I had almost forgot to observe, that the door and windows of my dear child's room were kept almost constantly open, and being exactly opposite to each other, naturally created a free circulation of fresh air.

OBSERVATIONS ON THIS CASE BY DR. THORNTON.

This patient, when I saw her, was convulsed, and the nurse said, "That if it was her child, nothing more should be given." Even her mother requested, "If there really was no hopes, that she might not be disturbed by medicine." What increased the alarm was, a tradesman a few doors off, had lately died of this same fever, under two eminent physicians, leaving behind a widow and six children. The case, indeed, seemed deplorable, but despair should never be allowed while there is life, and it authorized the exhibition of the vital air, which undoubtedly contributed much to the recovery of this amiable young lady.

SECT. VIII.

THE SEQUEL OF PUTRID FEVER.

I HAVE before mentioned the vast debility and the proper treatment, after the cessation of putrid fever, until the period of convalescence, when exercise, air, and a generous diet, perfectly recovers the patient;—but in some instances, fatal diseases supervene, as dropsy, general or partial, jaundice, and other diseases of debility, which require, for their removal, beside the natural, artificial stimuli, as bark, wine, steel, and particularly the inhalation of oxygen air, of which the system has been greatly deprived, and the blood seems also in a great measure to have lost its attractive power for that animating principle.

THEORETICAL OBSERVATIONS.

SECT. IX.

ON DYSENTERY.

THE Dysentery, or Flux, being a disease so destructive to soldiers in camps and garrisons, and a constant attendant on all military operations, it is a medical inquiry of the utmost importance to investigate this disease with the utmost attention, in hopes of finding some method to put a stop to its devastation. It is a subject in which the welfare of mankind is deeply interested, and often the glory and honour of a nation. If the cause of humanity were not alone a sufficient motive to induce to this research, we need but turn our eyes on the political field; where we should behold the best concerted measures often defeated by its influence.

On the 23d of October, 1415, Henry the Fifth, with his English archers, would not have “*af-frighted the air at Agincourt**,” if impetuosity had suffered the French to remain still: had the battle been delayed but another week, his whole army would have been ruined. He em-

* This was called the battle of the men *without breeches*; for the English could not wear any on account of this disease.

barked with 50,000 men from Southampton, on the 18th and 19th of August, 1415, and landed at Havre de Grace on the 21st. He marched to Harfleur, besieged, and took it. During the siege, which was not six weeks from the time of his leaving England, he lost nearly half of his army by the bloody flux. *Two thousands died of it in one day.* Rapin says, the flux, which was got among his troops, had made, and still did make, such ravage, that not above the fourth part of his army were able to bear arms. This distemper had not seized the common soldiers only, but even the most considerable persons were not free from it. The Bishop of Norwich, and the Earl of Suffolk, were already dead of it. The Duke of Clarence, the king's brother, the Earl of Arundel, and several other officers of distinction, were so dangerously ill, that they were obliged to return to England in hopes of a cure.

After the mock trial * and decapitation of the unfortunate Charles, although the parliament in
Scotland

* The tribunal consisted of 133 persons, as named by the commons; but there scarcely ever sat at once 70: so difficult was it, notwithstanding the blindness of prejudice, and the allurements of interest, to engage men of any name or character in that criminal measure. Cromwel, Ireton, Harrison, and the chief officers of the army, most of them of mean birth, were members, together with some of the lower house and some citizens of London. The twelve judges were at first appointed in the number: but as they had affirmed, that it was contrary to all the ideas of English law to try the king for treason, by whose authority all accusations for treason must necessarily be conducted;

Scotland were invited to model their government into a commonwealth like England, yet they resolved still to adhere to monarchy, which had ever prevailed

conducted; their names, as well as those of some peers, were afterwards struck out. Bradshaw, a lawyer, was chosen president. Coke was appointed solicitor for the people of England. Dorislaus, Steele, and Afke, were named assistants. The court sat in Westminster-hall.

The king, though long detained a prisoner, and now produced as a criminal, sustained, by his magnanimous courage, the majesty of a monarch. With great temper and dignity, he declined the authority of the court, and refused to submit himself to their jurisdiction. Three times was Charles produced before the court, and as often declined their jurisdiction. It is confessed, that the king's behaviour, during this last scene of his life, does honour to his memory; and that, in all appearances before his judges, he never forgot his part, either as a prince or as a man. Firm and intrepid, he maintained, in each reply, the utmost perspicuity and justness both of thought and expression: mild and equable, he rose into no passion at that unusual authority which was assumed over him. His soul, without effort or affectation, seemed only to remain in the situation familiar to it, and to look down with contempt on all the efforts of human malice and iniquity. The soldiers, instigated by their superiors, were brought, though with difficulty, to cry aloud for justice: *Poor souls!* said the king to one of his attendants; *for a little money they would do as much against their commanders.* Some of them were permitted to go the utmost length of brutal insolence, and to spit in his face, as he was conducted along the passage to the court. To excite a sentiment of piety was the only effect which this inhuman insult was able to produce upon him. The people, though under the rod of lawless, unlimited power, could not forbear, with the most ardent prayers, pouring forth their wishes for his preservation; and, in his present distress, they avowed him, by their generous tears, for their monarch, whom, in their misguided fury, they had before so violently

prevailed in their country, and which, by the express terms of their covenant, they had engaged to defend. They considered besides, that as the property of the kingdom lay mostly in the hands of great families, it would be difficult to establish a commonwealth, or without some chief magistrate, invested with royal authority, to preserve peace or justice in the community. The execution, therefore, of the king, against which they had always protested, having occasioned a vacancy of the throne, they immediately proclaimed his son and successor, Charles II. Charles was at the Hague when Sir Joseph Douglas brought him intelligence that he was proclaimed King by the Scottish Parliament. He accordingly came over to Scotland. Cromwell assembled his forces to attack the king, who was entrenched between Edinburgh and Leigh. The king avoided battle, and Cromwell found himself in a most wretched situation. He had no provisions but what he received by sea. He had not had the precaution to bring these in sufficient quantities; and his

violently rejected. The king was softened at this moving scene, and expressed his gratitude for their dutiful affection. One soldier too, seized by contagious sympathy, demanded from heaven a blessing on oppressed and fallen majesty: his officer, overhearing the prayer, beat him to the ground in the king's presence. *The punishment, methinks, exceeds the offence:* this was the reflection which Charles formed on that occasion. The bloody sentence is too well known to need description.

army

army was reduced to difficulties. He retired to Dunbar. The king followed him, and encamped on the heights of Lammermure, which overlook that town. There lay many difficult passes between Dunbar and Berwick, and of these the king had taken possession. Cromwell was reduced to extremities. A *flux* broke out in his army. He had even embraced a resolution of sending by sea all his foot and artillery to England, and of breaking through, at all hazards, with his cavalry, when the madness of the Scottish ecclesiastics saved him from this loss and dishonour.

Night and day the ministers had been wrestling with the Lord in prayer, as they termed it; and they fancied, that they had at last obtained the victory. Revelations, they said, were made them, that the sectarian and heretical army, together with Agag, meaning Cromwell, was delivered into their hands. Upon the faith of these visions, they forced Charles, in spite of his remonstrances, to descend into the plain, with a view of attacking the English in their retreat. Cromwell, looking through a glass, saw the enemy's camp in motion; and foretold, without the help of revelation, "that the Lord had delivered them into his hands." He gave orders immediately for an attack. In this battle it was easily observed, that nothing, in military actions, can supply the place of discipline and experience; and that, in the
 presence

presence of real danger, where men are not accustomed to it, the fumes of enthusiasm presently dissipate, and lose their influence. The Scots, though double in number to the English, were soon put to flight, and pursued with great slaughter. The chief, if not only resistance, was made by one regiment of Highlanders, that part of the army which was the least infected with fanaticism. No victory could be more complete than this which was obtained by Cromwell. About 3000 of the enemy were slain, and 9000 taken prisoners. Cromwell pursued his advantage, and took possession of Edinburgh and Leith. The remnant of the Scottish army fled to Stirling.

In a revolution not less remarkable than that which happened in our own country, when the best of the French kings suffered a martyrdom equal or greater than our own, and the power of Europe coalesced in order to restore him to his power, the Duke of Brunswick headed an army of 50,000 Prussians, to whom was attached 15,000 Austrians under general Clairfait, and a considerable body of Hessians, together with 20,000 French emigrants, chiefly officers, amounting in all to 100,000 effective men, and these entered France. To oppose these, Dumourier had only 17,000 men collected near the point from which the enemy were approaching in Luxembourg.

bourg. The French emigrants had given the Duke of Brunswick such an account of the distracted state of their own country, and of the disaffection of all orders of men towards the ruling faction in Paris, that no resistance of any importance was expected. When these combined troops, consisting either of steady Austrian or Hungarian battalions, or of those well disciplined Prussians which the great Frederick had inured to the best military discipline, were reviewed in Germany before setting out on their march, it is said that the spectators, among whom the French cause was not altogether unpopular, beheld them with anxiety and regret, and pitied the unhappy country against which this irresistible force was directed. The soldiers and their officers regarded themselves as departing for a hunting match, or an excursion of pleasure; and many of the usual accommodations of an army were ill attended to, such as hospitals, &c. The beginning of their progress into France justified these expectations. Longwy surrendered after a siege of fifteen hours, although well fortified, possessed of a garrison of 3500 men, and defended by 71 pieces of cannon. The news of this event irritated the assembly so much, that they decreed, that, when retaken, the houses of the citizens should be razed to the ground; and, distrustful of the officers of the army, they decreed that the municipal officers of a town should hereafter have power to controul
the

the deliberations of the council of war. Verdun was next summoned; and here the municipality compelled the governor, M. Beaurepiare, to surrender. That officer, disappointed and enraged, shot himself dead with a pistol in presence of the council, and on the 2d of September the Prussian troops entered the town.

The Duke of Brunswick encamped his army at La Lun, a marshy ground in Champagne, near to the camp of Dumourier. The rain fell in torrents, and the roads became almost impassable. Exposed in autumn to cold and moisture, there was a predisposition to take infection, and the filth alone of an immense body of men, stationary in the field in autumn, and compressed as this army must necessarily have been, was sufficient to give rise to every species of pestilence. This actually appeared, and the people died of the *flux* like rotten sheep. A more sudden or extensive scene of military disaster was perhaps never exhibited. Above ten thousand were ill at one time. The French would not engage with, or take prisoners, an enemy amongst whom a pestilence was raging. A truce was made for eight days, when the Duke found himself obliged to quit France. Thus this vast and wonderfully appointed force, which had taken almost three years in "dreadful note of preparation," was obliged to relinquish all the hopes they had set out with, and with difficulty were able to trace back their steps.

Dysenteries

Dysenteries, says Sir John Pringle, sometimes appear upon first taking the field, but the cases are never so bad, nor nearly so frequent, as towards the close of summer, or in the beginning of autumn. At that time they become epidemic and contagious, prevail for about six weeks or two months, and then cease. They are always worse after hot and close summers, especially in fixed camps, or when the men lie wet after a march in warm weather.

The sure diagnostics of the dysentery, are small but frequent stools of a slimy and frothy matter, a tenesmus, and gripings. Blood mixed with the fæces is a common, but not an inseparable symptom; for many have all the other marks without this, at least in the beginning; and others have blood in their stools, from various causes, without a dysentery. But whereas this distemper is mostly attended with blood, for that reason it has also the name of the bloody-flux.

The other symptoms are more casual. Sometimes a violent bilious fever will terminate in the dysentery; at other times the previous fever is inconsiderable; and now and then we shall find the dysentery begin with scarce any feverishness at all.

In general, the fever attending the flux is of little consequence, till the disease has continued long, and the patient is exhausted; then it is of a low and malignant kind.

Streaks

Streaks of blood denote the rupture of some small vessels in the rectum, but a more intimate mixture is a sign that the blood comes from a higher source. This evacuation of blood, which alarms most, is the symptom least to be dreaded; for though the oozing is constant, except in a few cases, the quantity of blood lost in the course of the disease is inconsiderable.

The fæces have all along a putrid smell, especially if mortification takes place, and then they are most infectious. The gripes are generally vague, but sometimes there will be a fixed spasm in one part, causing exquisite pain. Although a great deal of wind is evacuated, yet as it is soon regenerated, the gripes and flatulence become almost incessant. The stools are all preceded by sharp gripings, and succeeded by some little respite: but the motions being so very frequent, the patient can have no considerable ease, unless from opiates, sweating, fomenting the belly, or after a purge.

In the beginning, the stomach is usually affected with a nausea and sense of oppression; and though it is relieved by vomiting, yet the indigestion remains, by which all kinds of food turning either sour or putrid, more wind is produced, and the gripings are continued. A hiccup sometimes arises from this cause, and then is little to be dreaded; but in the low or advanced state of the disease, when that supervenes, it is generally
the

the sign of a mortification of the bowels, and fatal.

It seems reasonable to suppose that the dysentery is owing to a cause little different from what produces the bilious fevers already described. The antients deduced both from an abounding and corrupted bile: but how far that opinion is true, and how to be qualified in regard to fevers, has been already said. I shall only add, that in both cases the vitiated humours may be turned upon the *primæ viæ*. In the smaller intestines, they may be absorbed by the lacteals, and after producing a paroxysm, be partly discharged by sweat: but, if the putrid fomes is conveyed to the cæcum and colon, it can neither be well absorbed, nor removed from thence, on account of the rugæ, cells, and flexures of those parts. The first case gives the idea of a fever; and the last, that of a flux.

But however this be, it is plain that there is at first little difference between the causes of the two, considering, that the fevers begin to be frequent in camp whilst the dysentery still subsists*; that

* On the 26th June, in the evening, the tents were struck; the army marched all night, and next morning fought at Dettingen. On the night following, the men lay on the field of battle, without tents, exposed to a heavy rain; next day they marched to Hanau, where they encamped in an open field, and on good ground, but then wet, and they had no straw for the first night. By these accidents, a sudden change was made in the health

that the distempers sometimes change into one another;

health of the army. For the summer had begun early, and the heats hitherto had been great and constant; but the free and uninterrupted perspiration attending those very heats, had as yet prevented them from producing any general sickness. Now the pores were suddenly stopped, the humours became putrid, and in that condition were turned upon the bowels, occasioning an epidemic dysentery; which began at this time, and continued for a great part of the season. In the space of eight days after the battle, about 500 were seized with it; and in a few weeks, near half of the troops were either ill, or had recovered of that distemper. It was common, though not nearly so frequent, among the officers; of whom those were first seized who happened to lie wet at Dettingen: the rest suffered by contagion. The dysentery raged all the month of July and part of August, to which the weather contributed. For soon after the above-mentioned rains, which had cooled the air, the heats returned, and continued for some weeks so great, that the body, already too much disposed, was farther prepared to receive the infection. Of this the chief fomes seemed to be the foul straw and the privies: For as soon as we left that ground, the sickness visibly abated.

The numbers aggravated the symptoms, as in the case of the small-pox, plague, and every other putrid and infectious distemper. But the flux is particularly destructive in full hospitals, where the corrupted steams being confined and accumulated, are raised to a high degree of virulence: of which fact the present sickness afforded a fatal instance.

The village of Feckenheim, about a league from the camp, was taken up for an hospital; into which, during the stay the army made at Hanau, (besides the wounded from the field of battle,) about 1500 sick were sent from the camp; and of that number the greatest part ill of the dysentery. By which means the air became vitiated to such a degree, that not only the rest of the patients were seized with the flux, but the apothecaries, nurses, and other attendants, with most of the inhabitants of the village, were also infected. To this acceded a

still

another*; that when any number of men are exposed to colds in autumn, part will be seized with a remitting fever, others with this flux, and perhaps a third sort will have a disorder compounded of both. Add to this, that the first symptoms are similar, and that the epidemic re-

still more formidable disease, namely, the hospital or jail fever, an inseparable attendant of foul air from crowds and animal corruption. These two combined occasioned a great mortality: while on the other hand, such as were seized with the dysentery, and not removed from the camp, though wanting many conveniences others had in hospitals, kept free of this malignant fever, and commonly did well. Few now escaped; for, how mild or bad soever the flux was, (for which the person was sent to the hospital) this fever almost surely supervened. The petechial spots, blotches, parotids, frequent mortifications, contagiousness, and the great mortality set forth its pestilential nature. In this it was worse than the true plague, as there was no security against a relapse; but, on the contrary, almost a certainty of it, if the person continued in the infectious air. Of fourteen mates employed about the sick, five died; and, excepting one or two, all the rest had been ill, and in danger. The hospital lost near half of the patients, which consisted of 3000 men; and the inhabitants of the village having first received the flux, and afterwards the fever by contagion, between the two were almost annihilated to a man.—Pringle.

* In proportion as the autumn grew cool, these fevers abated of their ardour, and formed more easily into intermittents; though still irregular, and of a bad kind. The dysentery was never general, but not uncommon; and it was observable, that those who were seized with it, usually escaped the fever; or, if any had both, it was alternately; so that when the flux appeared, the fever ceased, and when the first was stopt the other returned: whence it appeared, that though the two distempers were of a *different form*, they proceeded from a *like cause*.—Pringle.

mitting

mitting and intermitting fevers of a more malignant kind, have often ended in a bloody-flux*. Lastly, that such countries as are most subject to bilious fevers, are likewise most liable to the dysentery.

All authors agree in ascribing it to poison; but what that poison is, they either have not defined at all, or seem commonly to have mistaken. It appears to be of the putrid kind. A remarkable case once occurred to me, says Sir John Pringle, of a person seized with a true dysentery, upon smelling to human blood, become putrid by standing some months in a close vial. Again, this malady is most frequent in hot, close, and moist seasons, when bodies are most subject to putrefaction; and it prevails chiefly among such as are of a scorbutic habit, or the meanest and poorest people, who, from foul air, bad diet, and nastiness, are most liable to putrid diseases. Lastly, the infection is evidently communicated by the fæces of those who are ill of the distemper. For the dysentery may proceed from two causes, different in appearance, but in effect the same; one, from poison generated within the body; and the other from foul steams, which being received into it, act as a ferment, and suddenly produce the same disorder that arises more slowly from an internal cause.

* Thom. Bartholin. Hist. Anatom. Cent. II. hist. lvi.

At first the smaller intestines seem chiefly affected; but upon the humour's descending into the colon and rectum, and stagnating there, the corruption increases; so that these parts may at last inflame and mortify at a time, when, perhaps, the bile is no longer putrid, nor the higher intestines the seat of the disease.

The putrefaction will also account for the great flatulence attending this distemper. For corrupted animal substances not only yield air of themselves, but occasion violent fermentations in all vegetable aliments. Hence arises such a quantity of air, that if it is pent up by opiates, it will be apt to distend the bowels and bring on a tympany.

PRACTICAL OBSERVATIONS.

SECT X.

THE COMMON PRACTICE IN THE CURE OF
DYSENTERY.

THE immediate causes of all diseases, well understood and properly considered, point to their cure. It was an observation of the illustrious Sydenham, that possessing this knowledge, and a correct history of a disease, he never was at a loss to prescribe a suitable remedy for it; and that he always proceeded with caution, until these circumstances were ascertained.

The disorder in question has been, I believe, more considered from its effects, remote, and concurring causes, than from its immediate cause; hence we may account for the inefficacy of the various attempts to cure it.

The pen of writers has done little more in the dysentery, than record the times and places when and where it proved most fatal; the appearance it put on; its symptoms; its devastation; variety of modes of treatment, that had no certain success;

cess; now and then a remarkable case; and the phenomena discovered on dissecting the dead*.

The great author above-mentioned, following nature as an unerring guide, never stopped at outward signs, neither did he bewilder himself in the search of those causes of diseases, that are not cognizable by our senses, but proceeded on to such as are immediate, or conjunct, and observed and assisted the means employed by nature to relieve herself struggling under the oppression of disease; or substituted a safer and better method, when her's was dangerous or ineffectual. To this principle the world is indebted for that inestimable work, which can only perish with it; a work founded on a basis applicable to all climes; that stands as the *palladium* of physic against the superstitious errors of the middle ages, and the ingenious chimeras of later times.

He describes the Dysentery as a poison attacking the intestines, and by the violent and frequent

* The various appearances of the intestines after death from this disease, have been described by a multitude of writers; and many of their descriptions collected together by Bonetus, and may be seen in his admirable work, the *Sepulchretum*, *Lib. III. Sect. II.* But as dissections of this sort lead to nothing towards the cure of the dysentery, and as the appearance of the intestines varies according to the habit of the patient, and the duration of the disease, I have suppressed an account of many dissections there made, as demonstrative only of its effects.

efforts of the intestines to discharge the sharp humours that continually vellicate them, the *mucus*, wherewith their inside is naturally covered, is cast out more or less copiously at every stool.

His plan of cure has been adjusted to this opinion. Upon being called in, says Sydenham, I immediately direct bleeding in the arm, give an opiate the same evening, and the next morning this gentle purging potion, which I frequently use.

Take of tamarinds, half an ounce ;

The leaves of senna, two drachms ;

Rhubarb, two scruples and a half ;

Boil them together in enough water to leave three ounces of strained liquor, in which dissolve

Manna,

And solutive syrup of roses, of each an ounce :

Mix them together for a purging potion, to be taken in the morning early.

I commonly prefer this draught to an electuary made with a small quantity of rhubarb ; for though this root be exhibited to evacuate acrimonious humours, yet unless a proper quantity of manna, or solutive syrup of roses be mixed with it to quicken its operation, it avails little in curing a dysentery. And because it is certain that the gentlest cathartics sometimes increase the gripings,

gripings, and occasion a general depression and disorder of the spirits during their operation, I therefore commonly give an opiate earlier than is usual after purging, viz. at any hour in the afternoon, provided it seems to have done operating; and this I do in order to quiet the disturbance I have raised.

I repeat the cathartics twice more, interposing a day between each, and exhibit an opiate after every purge, at the time above-mentioned, and direct it to be repeated morning and night on the intermediate days, in order to diminish the violence of the symptoms, and obtain a respite whilst I am employed in evacuating the peccant humours. The opiate I chiefly use is liquid laudanum*, in the quantity of sixteen or eighteen drops in any cordial water for a dose.

The diet should be made of hartshorn shavings and the crums of white bread, of each two ounces, boiled in three pints of water to two, and afterwards sweetened with a sufficient quantity of fine sugar.

This method, adds Sydenham, exceeded all those I had hitherto experienced in conquering

* *Laudanum Liquidum* SYDENHAMI est. R. Vini Hispanici, lb. ʒ. Opij, unc. ʒ. Croci, unc. ʒ. Pulv. Cinnamomi et Caryophyllorum aa dr. ʒ. infundantur simul in B. M. per duos vel tres dies, donec liquor debitam consistentiam adquirat.—Colatum fervetur pro usu.

this

this disease, which, for the most part, yielded to the third purge.

But if it proved so obstinate as not to yield to these means, I gave the former opiate every morning and evening, till it went quite off; and the more effectually to conquer it, I have ventured to give a larger dose of laudanum than that above specified, viz. twenty-five drops every eight hours, if the former dose proved too weak to stop the flux. I likewise ordered a glyster made of half a pint of milk, and an ounce and half of Venice treacle, to be injected every day, which is in effect an admirable remedy in all kinds of loosenesses. Nor indeed have I hitherto found the least inconvenience happen from so frequent a repetition of opiates, (whatever mischief the unexperienced imagine will follow from hence,) though I have known several who have taken them every day for some weeks when the disease proved inveterate. But it must be noted here, that when the flux amounts only to a looseness, omitting bleeding and strong purging, it will suffice to give half a drachm of rhubarb, more or less, in proportion to the strength of the patient, every morning, made into a bolus, with a sufficient quantity of diascordium, adding to it two drops of oil of cinnamon; and exhibiting an opiate the following evening, *e. g.*

Take

Take of small cinnamon water, one ounce ;
 Liquid laudanum, fourteen drops ;
 Mix them together.

In the meantime use the diet as above specified in the cure of the dysentery, and inject the glyster there commended every day, if there is occasion.

This is exactly consonant to the best modern practice. Where the irritative fever runs high, the stimulus of blood is to be lessened, the poison is next to be evacuated, and the irritation in the bowels is to be allayed with opiate, and a mucilaginous* food ; and opiates are to be continued

* Gelatinous broths at the conclusion of dysentery, is found to be very excellent. There is an excellent recipe of this nature in Dr. Buchan. Take, says this physician, a sheep's head and feet with the skin upon them, and burn the wool off with a hot iron ; afterwards boil them till the broth is quite a jelly. A little cinnamon or mace may be added, to give the broth an agreeable flavour, and the patient may take a little of it warm, with toasted bread, three or four times a-day. A clyster of it may likewise be given twice a-day. Such as cannot use the broth made in this way, may have the head and feet skinned ; but we have reason to believe that this injures the medicine. It is not our business here to reason upon the nature and qualities of medicine, otherwise this might be shewn to possess virtues every way suited to the cure of a dysentery which does not proceed from a putrid state of the humours. One thing we know, which is preferable to all reasoning, that whole families have often been cured by it, after they had used many other medicines in vain. It will, however, be proper that the patient take a vomit, and a dose or two of rhubarb, before he begins to use the broth. It will likewise be necessary to continue the use of it for a considerable time, and to make it the principal food.

with

with a free hand. How different this from the fatal and common error of first attacking the disorder in the bowels by opiates and astringents*, which is but aggravating the effect, while the cause is entirely neglected, a practice which has, and still continues to destroy thousands!

In all contagious diseases the danger is increased, and the infection spread, by the neglect of cleanliness; but in no one more than this. Every thing about the patient should be frequently changed. The excrement should never be suffered to continue in his chamber, but removed immediately and buried under ground.

* Hippocrat. Prænot. Sect. 2. “Intempestivè suppressa intestinorum difficultas, abscessum in costis, aut in visceribus, aut articulis inducit.” And Galen de Ven. Sect. adversus Erasistrat. Cap. 6. says, “Melancholia, insania, pleuritis, dolor renum, sanguinis vomitus, epilepsia, hydrops, oriri possunt.” —Thus Hippocrates and Galen. Brocklesby, in his *Medical Observations on Military Diseases from 1758 to 1763*, says, “out of eight hundred men and women who were ill of a bilious fever and flux, upon the return of the troops to the Isle of Wight, after an expedition and descents upon the coasts of France, in the year 1758,” he had a sufficient number of instances, as well as in subsequent campaigns, to prove “some inconveniences from the astringent powers of rhubarb, and by too early checking the bilious evacuations. For many, who were treated in the usual way, with rhubarb, joined with an opiate, immediately suffered delirious ramblings, or an increase of them, if they had any tendency to them before: they complained also of a tightness across the chest, which called for immediate bleeding, though sometimes the patient’s strength was already low, and much worn out.”

A constant

A constant stream of fresh air should be admitted into the chamber; and it ought frequently to be sprinkled with vinegar, juice of lemon, or some other strong acid.

The patient must not be discouraged, but his spirits kept up in hopes of a cure. Nothing tends more to render any putrid disease mortal, than the fears and apprehensions of the sick. All diseases of this nature have a tendency to sink and depress the spirits, and when that is increased by fears and alarms from those whom the patient believes to be persons of skill, it cannot fail to have the worst effects.

We cannot conclude this Section without noticing a frequent occurrence in Dysentery; that is, a constriction. Sydenham, in treating of the epidemical dysentery in London, of 1669, 1670, 1671, and 1672, uses the words in so general a sense, that he has been attacked by some observers of trifles, for saying, at the setting-in of the dysentery in the first autumn, several had no stools at all, "*quamplurimi nullis omnino dejectionibus molestabantur.*" The fact was, the irritating poison occasioned a constriction of the intestinal tube both ways, and their contents were locked in at top and bottom, occasioning violent pain, while only mucus passes the constriction. Here the opiate, to relax the spasm, must be first given*, and the purge follow, and the re-

* Gangrene often has ensued for want of this consideration.

moved scybala, or a congeries of hardened knots, will discover the removal of the chief cause of this great intestinal disturbance.

In simple diarrhæa, the chief object is to determine to the surface of the body, where a flannel, or fleecy hosiery waistcoat, is indispensable. Here opiates produce the most beneficial effect, especially the broth recommended in Note, page 151.

PRACTICAL OBSERVATIONS.

SECT. XI.

OF VITRUM ANTIMONII CERATUM IN DYSENTERY.

WE come now to consider those substances which possess OXYGEN, and among the first of these we will consider the pretensions of the *glass of antimony** in this disease; for I conceive that the wax can have very little efficacy in the preparation of the cerated glass of antimony.

This medicine, as far as I can learn, was first employed by Mr. Steel, late minister of Lochmaben, but kept as a secret. Twelve years ago Dr. George Young got the receipt, but did not use it for sometime, distrusting it partly as a harsh medicine in appearance, partly because he had often been deceived in boasted specifics; till finding other medicines ineffectual in so frequent and cruel a disease, he began to try it cautiously, and found it to answer beyond expectation. After repeated experiments, he generously made the receipt public. I have tried it often myself in

* Oxydum stibii sulphuratum vitreum.

ordinary

ordinary cases, and once in a dysentery of four years standing, with surprising success*.

Although I made no doubt of the public's confidence in any thing advanced by Dr. Young, a man of singular judgment and veracity, I have notwithstanding been at pains to collect together several testimonies of others concerning this medicine, that there may not in the least appear partiality in either the discoverer or recommender. I have been the more cautious this way, seeing this medicine of all others appears to promise the least of an anti-dysenteric, because no man would think of the glass of antimony, as the *specific* in dysentery. *And that it is truly a SPECIFIC appears from hence, that it cannot be said to cure by its purgative quality, because it sometimes acts as an emetic, without purging; nor can it be said to cure as an emetic, because it sometimes purges without vomiting. Nor, lastly, can it be said to act as an evacuant in general, because I and others have known it to cure without any sensible evacuation at all.*

THE RECEIPT OF THE MEDICINE, AND OBSERVATIONS UPON ITS OPERATION, BY DR. YOUNG.

TAKE glass of antimony in powder one ounce, bee's wax one drachm, melt the wax in an iron

* This report is made by John Pringle, M. D. in Medical Essays and Observations, revised and published by a Society in Edinburgh.

ladle, then add the powder; set them on a flow fire without flame, for the space of half an hour, continually stirring them with a spatula; then take it from the fire, pour it upon a piece of clean white paper, powder it, and keep it for use.

When I prepared this quantity, it lost a drachm of its weight. The glass melts in the wax with a very flow fire.

I was at first so scrupulous in preparing the medicine, that I wished the degree of heat had been assigned, as well as the space of time necessary in the preparation; but I have since found, that I both vary the time and degree of heat, without perceiving any difference in the operation of the medicine.

After it has been about twenty minutes on the fire, it begins to change colour, and in ten more, comes pretty near the colour of snuff; by that colour I know it is sufficiently prepared, without attending to the degree of heat, or space of time.

The ordinary dose for an adult, is ten or twelve grains; but, for the greater safety, I commonly begin with six; to a strong man I have given a scruple, which sometimes works so mildly, that I have thought it too weak.

To weakly constitutions I give five or six grains, encreasing the dose afterwards, according to the operation.

To

To a boy of ten years of age I give three or four grains.

To a child of three or four years two or three.

This medicine has been practised with success for the dysentery, and the preparation of it kept a secret for many years.

When first it was communicated to me, I thought it so harsh and dangerous a medicine, that I had not courage to try it for some years, and even then I began the dose with one grain, and encreased it gradually to twenty, which is the largest I have yet given. As soon as I was convinced, by a number of experiments, that it was both mild and efficacious in curing the dysentery, I published the receipt in our Edinburgh newspapers, being under no promise of secrecy with regard to this, and being resolved never to make a secret of any medicine whatever.

I do not expect that any physician will incline to give a full dose at first, without better authority than I can give to strangers; but the cautious may give as small a dose as they please, and make at first trials almost in any disease where purgatives will do no harm, and encrease it gradually as they find it operate.

I gave it in dysenteries with or without fever, whether epidemic or not.

I have tried it often, both where bleeding and vomits have been premised, and where they have not, with equal success.

I never

I never choose to give opiates in the beginning, especially where there is great sickness; because, although opium gives great relief to some, yet at other times I have thought both the sickness and purging thereby encreased the following day.

I never began with a larger dose than ten grains, because it frequently operates as violently at first, as twenty grains at last, even upon the same patient.

In its operations it sometimes makes the patient sick and vomits; it purges almost every person, *but I have known it cure without any sensible evacuation or sickness; nay, in violent dysenteries, they purge seldomer with it than without it.*

If it purge sufficiently, or fatigue the patient any way, I intermit a day or two betwixt each dose, the same way as I do with other purgatives.

As I have cured some with one dose, I have been obliged to give others five or six, especially when the first doses have been too mild; and I have often thought a weak dose did no good in chronic cases.

After the second or third dose, the stools are seldom bloody, the gripes and sickness are much abated, and the mucous stools are less viscid.

I give it with an empty stomach, for then I think it operates most mildly.

I forbid drinking any thing after it for three hours, unless the patient is very sick or disposed to

to vomit, in which case I give warm water as in other vomits.

I forbid the use of all fermented liquors, and recommend a milk diét, with rice or bread, chicken-broth, or water-gruel.

I give nothing cold, unless it be a tea-spoonful of jelly of hartshorn as often as the patients please, and sometimes I indulge them with the *jelly of currants* to refresh their tongue.

A Letter from Mr. Andrew Brown, Surgeon in Dalkeith, to Dr. Pringle.

S I R,

IN obedience to your request, I send you an account of two successful trials I made of Dr. Young's anti-dysenteric powder, which was all I had an opportunity to make.

The first was on William Loudon, at Cranston, aged about forty years; he was so reduced by the dysentery, that he could not walk about his house, and through torturing gripes, could not sit in an erect posture. I saw him first on May 21st last year in this distress; judging him beyond bleeding through weakness, I vomited him with ipecacuanha, and purged him with rhubarb, ordered his diet and drink as usual, to no purpose. I then sent for Dr. Young's Powders, and on the 25th, I gave him three doses, of nine grains each, one to be taken every other day, and ordered him
a regimen,

a regimen, which three doses effectually carried off the dysentery; and the remaining diarrhæa and weakness was removed by a strengthening diet.

The other trial was on a young man about seventeen or eighteen years of age, a labouring servant to Mr. Cleghorn, farmer at East-houses of Newbottle; he had laboured under the dysentery for near three months preceding March last, continuing at his work, till, being obliged to desist, his master applied to me. I visited him on the 25th of that month; being young, I caused him to be bled; he had the common symptoms attending the dysentery, with torturing gripes and loss of appetite, but was able to step about. Being a servant, and seed-time in view, I immediately gave him three doses of Dr. Young's Powder, six grains for a dose, which suppressed the dysentery; but not being quite conquered on the third of April, I gave him three doses more, nine grains each, which effectually carried off the dysentery, so that the young man recovered and returned to his labour at the end of the month.

N. B. He took his doses as the other did, one every other day, and the regimen during the taking was according to Dr. Young's direction to me, and so far as I remember, it did not vomit them, nor were they so much as sick.

Dalkeith, Jan. 30th, 1738.

*A Letter from Dr. Thomas Simpson, Chandos Professor
of Medicine in the University of St. Andrew.*

DEAR DOCTOR,

I HAD your's two weeks ago, wherein you desire my observations upon the Stibium Specificum, made public by our friend Dr. Young; but my being much in the country since that time prevented my writing them out till now.

The first I gave it to was William Jervy, tenant in Pilledaff, a young man somewhat above twenty years of age; for ordinary he complained much of nephritic pains, and last harvest of a cough. January 16th, 1735, he was seized with the dysentery most severely; I was sent for upon the 20th, when I found that the night before he scarce had had any interruption in his purging, attended with great anguish and sickness, whereby he was so much defeated, that he looked like a dying man. I gave him immediately fourteen grains of the stibium; the following twenty-four hours he was easier; next day he got a clyster of Cow's-whey and camomile flowers, but was worse: the third day I gave the stibium without observable success; but this I ascribed to cold in going to stool, which he did with his feet on an earthen floor. I had much ado to persuade him to a third dose, being quite dispirited with the severity of his disease, but two days after I at length prevailed; he was sensible of the good effects of this, which made
him

him the easier take a fourth dose, which of all relieved him most ; so that after that I had little to do but to secure him against a relapse, which I did by a fifth dose, and the regulation of the non-naturals.

I had no other patient under that disease until December, when a woman in the town, the wife of one Andrew Murray, took it formally with horror, gripes, sickness, drowth, &c. I saw her after she had been pretty severely handled with it for ten days ; I gave her ten grains *diebus alternis* ; three doses recovered her.

In the beginning of April, 1736, a young lady who had dysentery, had taken for a vomit mercur. præcipit. Wurtz. gr. 7, at eight in the morning, which at eleven had vomited her five times, but she continuing very sick for twelve hours, it began again to vomit and purge her at the same time ; and in this case she continued till nine next morning, when I was sent for. I gave her a dose of laud. liquid. which made her easier that day ; but next day her purging returning with blood and gripes, I immediately gave her vitr. antimon. cerat. gr. 6. It was six hours before she had a stool, and then it was free of blood, and taking its natural appearance.

One Wilson, a boy about fourteen, son of one of the tenants in Magus, for a whole year had been subject to the dysentery, though in an easy manner, being still able to keep his feet. I obliged

him to come to town that I might see him from day to day. When I gave him the first dose, he was under one of his worst fits. Six grains, or ten at most, was the utmost I went to now with any patient, finding the lesser doses answer best. I gave him only six grains for a dose; the first day his first stools were bloody, but the last untinged; the second day he kept easy; the third his stools were again bloody; the fourth he got a second dose, but purged none, and was free of gripes; next day his stools appeared to form, though interspersed with blood, and after this the blood quite disappeared; nevertheless, before he left the town, I gave him two other doses to secure against a relapse; and, when I enquired about him some time after, he was in good health.

About the same time I gave two doses of six grains each to Deacon Addison, an old man about 70, and cured him under a pretty severe attack of that disease.

In June I gave it to David Taylor's wife, tenant in the Brake, in the fifth month of pregnancy, violently attacked with a dysentery and tenesmus. The third dose carried off the dysentery, and the remaining tenesmus yielded to clysters of milk and camomile flowers.

Mr. Tod's wife of Balmungo, who had got the same disease, was quite cured by three doses.

February 1st, 1737, William Wilson in the Tosh took the dysentery after the epidemic fever,
and

and was cured by three doses, gr. 6. About this time it turned epidemic to the eastward of St. Andrew's, particularly about Kinsbarns and Craill; many of the boys of this last town were seized; the first who were seized with it were cured by bleeding and purging with rhubarb; but upon Stibium being introduced amongst them, the cure was much more speedy. I had several of the country people under this disease at this time, none of which required above the third dose. Its success now was so observable, that some of the gentlemen in the parts where it raged most, applied to me for doses of it to give their poor in the neighbourhood, and I received letters of thanks, with accounts of its *observable success, which indeed was so great, that none ever doubted of it where I gave it.*

An old minister in the neighbourhood, aged 70, had been troubled with gripes for seven or eight months, with now and then a loose belly, and at last came to pass pure blood, to the quantity at least of two or three gills a day. After continuing four or five days in this way, upon his sending for me, I gave him six grains. The first dose lessened the hæmorrhage, the second cured it.

Thus you find in what different cases I have given this medicine, and how effectually, in all dysenteries of long and short continuance, epidemical and others, as also in the hæmorrhagies of the
intestines,

intestines, in which I could not desire more certain proofs of its success than I have had: that there are many cases in both diseases in which it will not succeed, nobody will doubt, considering the different kinds of constitutions we meet with: but that it is a true and successful *specific* in most, is as certain as that the bark cures agues and gangrenes. So that in my order of medicines I have made it the *second* for its true and observable qualities; for a SPECIFIC I must term it, since I find that six grains, without purging, or the least disturbance, answers our intentions in most cases. How much the world is indebted to Dr. Young for making it public, every one who has tried it must be forced to confess.

St. Andrew's, Jan. 2, 1738.

A Letter from Mr. John Paisley, Surgeon in Glasgow.

SIR,

YOUR laudable endeavours to promote the art of medicine, and particularly in recommending the stibium ceratum, not only in fluxes, but in hæmorrhagies, which I had an account of a good time ago from my cousin, Dr. Simpson, at St. Andrew's, and from other good hands since, make me hope you will more easily pardon the freedom I take of acquainting you with the success I have had in using it, though I have not the happiness
of

of your acquaintance ; and beg the favour, if you can spare fo much time, as to let me have an answer to a query or two I subjoin.

When I at first used that medicine, I procured it from Edinburgh, by means of Mr. Stephen, furgeon to General Whetham's regiment, who can vouch for its effects in a great many cafes, where he and I attended jointly both fome of the town's people and his own men. At first we gave only feven grains in a dofe, and to fome ftrong perfons encreafed it by degrees to 13 or 14 grains, and proportionably lefs to weak and younger patients, made up in a bolus with conferv. rofar. diafcord. or theriac Edinens. allowing for drink water-gruel, fometimes with, fometimes without milk ; at other times emulfion, tea, or weak broth, and always an opiate after the operation. It fometimes vomited, but purged without griping, or but very gently. When it occafioned vomiting, it made them very fick before the operation, but fo foon as it wrought downwards, that went off.

When the parcel I had from Edinburgh was done, I made it by the directions given in the *Edinburgh Courant*, making ufe of white wax to befmeare the ladle, and did not bruife the ftibium: after keeping it on the fire the time ordered, I could not rub off any wax: when it was cold, I rubbed it fine in a marble mortar. Of this kind
I gave

I gave only three grains, and never above five, even to strong persons, and found it wrought as well as what I had from Edinburgh, and in the same manner, notwithstanding the disproportion in the doses. I did not keep a list of all the patients to whom I gave it, but I am certain I gave it to above *forty, who all recovered.*

As the disease was epidemic, and the patients generally were seized with a fever, at the beginning, in most of them I took away some ounces of blood before using of it, giving it every other day, and in the intermediate days a light cordial; and if there was great pain in the lower belly, or rectum, an emolient clyster, with the yolk of an egg.

Four or five doses perfected the cure for most part, when taken in time. In others, where it was of long standing, I have been obliged to go the length of twelve or fifteen doses, and never once saw any bad effect from it. I have tried it in diarrhœas, dysenteries, and cholic pains, from viscid fordes in the intestines, and found it in all these cases a safe easy purgative, and sometimes a gentle emetic, and *much surer and a speedier cure than the ordinary methods,* which I used with a great many patients at the same time, &c.

Glasgow, Feb. 6, 1738.

*A Letter from Mr. James Stephen, Surgeon to
General Whetham's Regiment.*

SIR,

BEING informed you wanted to know the success of the Vitrum Antimonii given in Dysenteries, is the reason of my sending you this. For these three last years dysenteries have been epidemical, not only in the regiment, but in all the places where it has been quartered; and not finding the desired success from the common method of cure, put me on making all the enquiry I could for an improvement. I at last happily met with the Vitrum Antimonii in an apothecary's shop in this town; and the character that was then given me of this remedy, encouraged me to make a trial of it. On my return to the regiment, then at Glasgow, in December, 1735, I communicated my design to Mr. John Paisly, surgeon, who desired to be present on making the experiment, and who, to my knowledge, has constantly practised it ever since.

Our first patient was a labourer in a sugar-house, (these people are very subject to that disease,) he had been confined to his room six weeks, and to his bed ten days, before we saw him; his pulse was low and frequent, his stools bloody, with a constant griping and tenesmus. We began with giving him two grains of the medicine, which gave him one puke, and five or six stools that day;

day; he had an opiate in the evening. Next morning the griping and tenesmus was much abated. We repeated the medicine every other day, till it was augmented to nine grains, by adding a grain to every dose, with an opiate always that evening he took the medicine, which entirely cured him; and in six weeks from the first beginning of the cure, I saw him working in the sugar-house, and he has continued well ever since.

Since December, 1735, I have had *an hundred* and *ninety patients* in dysenteries, who were all treated after the same method as above, of which I lost *but one*, who turned hectic, and died about the thirty-sixth day of his being taken ill.

Canongate, Feb. 6, 1738.

I shall conclude, by reading the strongest testimony of all, in a letter wrote to me by Mr. John Gordon of Glasgow, whom I am not acquainted with, but whose character we know to be that of an eminent surgeon, and a most respectable man.

SIR,

I GIVE you the satisfaction you desire with a great deal of pleasure. In the harvest 1736, we had a great many people afflicted with the diarrhoea and dysentery, which *carried off several*. At that time I began to try the stibium ceratum, and gave it to *some hundreds*, and *since never missed of success*, excepting one or two cases, were the
patients

patients were quite exhausted before they got it.

I prepared it as fine as we do calomel; three grains of this fine powder is an ordinary dose; I never exceeded five; one or two doses frequently perfected the cure, and seldom I gave three; they got the dose in the morning, and were often two hours before it operated; some it only purged, others it both purged and vomited, and made them pretty sick for six or eight hours; always at night I gave a good dose of opium. Lately a boy of ten years of age had tried for some weeks the common method, with ipecacuan, rhubarb, and decoct. diafcord. to be cured of a very bad diarrhœa, to no purpose, his looseness still returning; he was cured with two grains of the fine powder, and a dose of liq. laud. and continues well.

Glasgow, Jan. 18, 1738.

In the West-Indies, says Dr. Moseley, in the presence of several of the officers of different regiments, who were desirous to be spectators of a fact so interesting to the army, a soldier has been taken in the worst condition of the disease, with blood running from him, as in an hæmorrhage from a wound, and in the utmost agony; I have given him three grains of the common glass of antimony, finely prepared, and made into a small pill; this perhaps has operated upwards and downwards; but in promoting its operation to
the

the skin, those other operations ceased, and a violent sweat has ensued ; which was kept up by warm herb teas, and now and then small doses of laudanum, which may always be given with safety, and without any of its usual inconveniencies, while the patient is sweating, which is a fact worthy the attention of practitioners: even the first stool, after the sweating has been raised, has been less bloody, and the third, or fourth, frequently scarcely tinged.—Such is the power of
MEDICINE!

PRACTICAL

PRACTICAL OBSERVATIONS.

SECT. XII.

OF THE PULVIS ANTIMONIALIS, OR JAMES'S
POWDER, IN DYSENTERY.

SENAC gave emetic tartar in small doses; but he expressly says, he gave it as a laxative to keep up a free passage from the stomach to the rectum.

In London, during winter, a person had taken a dose of Glauber's salt, and the same evening went into a warm bath; after which he returned to his own house. In the night he was seized with pains in the bowels, and a constant irritation to go to stool. The next day he voided blood, and bloody mucus, and had a complete dysentery. He took chalk julep and laudanum for two days; but the symptoms increasing, he had bloody excrements almost every quarter of an hour, with great straining, anxiety, lassitude, and fever. Being consulted, says Dr. Moseley, I advised him to go to bed, and to take ten grains of James's Powder; to cover himself well; and to dilute, and promote a sweat; and to continue the sweating, by repeated doses of James's Powder; every four hours,

hours, drinking plentifully of warm balm, or mint tea. The James's Powder made him retch a little at first, and he continued to have several griping stools, until the powder produced a plentiful sweat; after which, the pains abated; he had no stool for twenty-four hours; he took three doses of the powder, and was cured.

James's Powder is admirably calculated to answer the first intentions in this disease: it possesses this great advantage, that though it shall effectually cleanse the primæ viæ, properly given, it never fails to excite a plentiful sweat, and its effects terminate on the skin. This double operation, if I may so call it, perhaps has made it so decisive in obstinate dysenteries.

When the diaphoresis is begun, I cover my patient, if a soldier, with a blanket (which no soldier should be without), and take care that the wind is not admitted directly upon him. I do not suffer him to uncover himself, but order whatever he wants to be brought to him, and supply him copiously with warm barley-water, mint, sage, balm, or oatmeal tea; and now and then give him a basin of gruel, or thin flour pap, with a spoonful or two of good sound white wine in it, as free as possible from acidity.

When the sudorific process has been successfully continued, all the symptoms grow milder; and if the patient break out in a rash, or efflorescent

cent

cent eruptions, or boils, the disease will soon be removed.

Should it be objected, that uncovering and exposing the patient while sweating, when he rises to go to stool, is an inconveniency which militates against my doctrine; I answer, that where there are proper attendants and utensils, the patient need not be exposed, nor moved from his bed; and that when once a complete and universal sweat is raised, the necessity for exposing the patient at all, will soon be at an end, as the disease sometimes suddenly disappears.

When a patient is first covered up, and has taken his diaphoretic medicine and drinks, in the beginning of a dysentery, particularly in hot climates, it may reasonably be expected, if he be young, gross, or plethoric, that sometimes, instead of sweating, he become restless and hot; his stomach loaded, and his skin dry: here bleeding, or an emetic, is necessary, which never fails to dispose the body to sweat. A very small quantity of blood taken away, and what almost any patient may spare without injury, or ten grains of ipecacuanha, when the patient is weak, will generally be sufficient to answer the end.

It happens sometimes also in the dysentery, and very commonly in fevers, that large doses of James's Powder, and other antimonials, are given, and frequently repeated, without causing perspiration. Here I have found practitioners perplexed,

plexed, and making wrong conclusions;—finding neither perspiration, nor any other evacuation produced, they still persist in the antimonial, and increase the dose, supposing a great deal must do what a little will not; which only increases the fever and brings on delirium, unless a sudden and violent operation, upwards or downwards, breaks forth, which may endanger the safety of the patient.

It has always been a rule with me, to desist from any powerful or active medicine, or to combine something with it, where a common dose, or quantity, has not produced the desired effect, whether vomiting, purging, or sweating be intended; or whether the medicine be bark, opium, mercury, or antimony.

Where antimonials have been taken, as I have here mentioned, without a proper effect, and where bleeding, or vomiting, may be improper, a dose of laudanum acts like a charm, and brings on immediate relaxation of the vessels, and profuse sweat. Nothing can be more useful in this disease than determining the fluids to the surface. But even where no apparent effect arises, success has attended the use of this powder, and how this comes about, I shall afterwards endeavour to explain.

PRACTICAL OBSERVATIONS.

SECT. XIII.

OF THE USE OF MERCURY IN DYSENTERY.

IN the early stage of Dysentery, in my voyage to the East-Indies, I found, says Dr. Clark, the following method of cure most effectual. First of all, the emetic powder, No. 1. was prescribed, which seldom failed to operate powerfully, and generally relieved both the stomach and bowels.

Next morning I gave the prescription, No. 2.
or

No. 1. R. Pulveris ipecacuanhæ grana decem,
Antimonii tartarificati grana duo; misce.
Capiatur à granis sex ad grana duodecim, singulis
horis, donec superveniat vomitus aut catharsis.

That is, take of

Ipecacuanha powder, ten grains,

Tartarized antimony, two grains.

Mix them. Take from six to twelve grains every
hour, until vomiting or purging comes on.

No. 2. R. Magnesiæ vitriolatæ ab unciâ ad unciam cum semisse,
Aquæ ferventis uncias septem,
* Succi limonis semunciam,
Spiritùs vini gallici,
Sacchari purificati, singulorum drachmas tres; misce.
Capiatur partitis vicibus.

* Vel crystallorum tartari quantum satis sit.

or 3; and, unless the pain of the bowels and tenesmus abated, one of these purges was repeated for the four following days, in such doses as to keep up a free discharge by stool. During this course the opiate, No. 4, was taken every night at bed-time. But, when the irritation in the rectum was violent, emollient and anodyne clysters gave more relief. For this purpose I directed six ounces of a decoction of linseed, or starch, with

That is, take of

Vitriolated Magnesia, from an ounce to an ounce and a half,
 Boiling water, seven ounces,
 Lemon juice, half an ounce,
 Brandy,
 White sugar, of each three drachms;
 To be taken in divided doses.

No. 3. R. Olei ricini unciam cum semisse,
 Spiritus vini gallici; vel
 Tincturæ cardamomi compositæ semunciam; misce.
 Capiatur partitis vicibus, phialâ prius agitatâ.

That is, take of

Castor oil, an ounce and a half,
 Brandy, or compound tincture of cardamons, half an ounce. Mix them.
 To be taken in divided doses, first shaking the phial.

No. 4. R. Opii purificati in pulverem triti,
 Pulveris ipecacuanhæ, singulorum drachmam,
 Conservæ rosæ quantum satis sit ut fiant pilulæ numero sexaginta.
 Capiantur, pro re natâ, una, duæ, vel tres, horâ decubitûs.

That

with forty or fifty drops of tincture of opium, to be injected.

If the disease continued longer, and it appeared to be necessary to restrain the purging, I gave small doses of ipecacuanha and opium, having recourse to laxatives from time to time, if the gripes returned.

In the Bengal dysentery, the same method was followed, only when the disease was accompanied with fever, the decoction, No. 5, generally answered better than the emetic powder: and, in most cases it was found indispensably necessary, both to prevent putrefaction, and to reduce the fever, to use the evacuating method alternately with the decoction of bark, No. 6.

Any

That is, take of

Purified opium, in powder,

Ipecacuanha powder, of each a drachm,

Conserve of roses, as much as is sufficient to make sixty pills.

One, two, or three to be taken at the hour of bedtime.

No. 5. R. Decocti tamarindorum ferventis uncias octo,
Antimonii tartarificati à granis duobus ad grana quatuor; misce.

Capiatur uncia singulis semihoris.

That is, take of

Boiling decoction of tamarinds, eight ounces,

Tartarified antimony from two to four grains.

Mix them. Take an ounce every half hour.

No. 6. R. Pulveris corticis peruviani unciam,
Cascarillæ semunciam,
Aquæ puræ libram:

Coque per sextam horæ partem, sub finem injiciens.

Any other method of cure I always found very ineffectual; and, unless the fever or symptoms of putrefaction demanded the intermediate use of other remedies, considerable ground was lost by omitting the purgatives for one day. These continued evacuations may, at first sight, appear hard in a disease attended with symptoms of putrefaction and great prostration of strength; yet certainly every one acquainted with the matter will readily allow, that a continual fruitless straining, and painful tenesmus, will weaken the patient more in twenty-four hours, than three or four easy motions, procured in the same time by a gentle cathartic.

Corticis cinnamomi drachmam :
 Ferventi liquori colato adde
 Gummi arabici drachmas duas,
 Tincturæ corticis peruviani uncias duas; misce.
 Capiantur duæ vel tres unciaë secundâ quaque horâ,
 addendo, pro ré natâ, aliquot guttas tincturæ opii.

That is, take of

Peruvian bark in powder, an ounce,
 Cascarilla, half an ounce,
 Water, a pound.

Boil for ten minutes, adding at the end of that time,
 Cinnamon, a drachm.

Strain off the liquor, and add to it while hot,
 Gum arabic, two drachms,
 Tincture of bark, two ounces.

Two or three ounces are to be taken every second hour, adding, as occasion may require, a few drops of tincture of opium.

If

If the dysentery attack with vomiting and irritability of stomach, the same remedies must be applied as directed, for these symptoms, in the remittent fever. When the griping and pains in the bowels are very severe in the beginning of the disease, fomentations, the warm bath, and a large blister to the abdomen, are of the utmost consequence, not only to assuage the torment of the patient, but also to obviate inflammation, which, in the worst cases, is very apt to end speedily in gangrene.

The regimen ought to be much the same as that already recommended in the remittent fever. And when the disease is accompanied with putrid symptoms, nothing will be found to answer better than ripe fruits. In the dysentery at Bengal, when these could not be procured for the common sailors, I have, with great advantage, added *vinegar* to the drinks, and never found that this acid increased their gripings.

But when the disease continues long, and the patient begins to recover, both ripe fruits and vegetable acids should be given sparingly, as they are *then* apt to bring on a return of the disorder.

The food should consist of smooth farinaceous substances, such as rice-jelly, (called in India Congee) water-gruel, sago, or salep, to which wine should be added, even freely when necessary, to support the strength of the patient. The most proper drinks are barley water, thin rice gruel; and

and when the gripes are severe, and demulcents indicated, almond milk*, or the decoction of starch, No. 7.

Through the whole course of the disease, the air ought to be kept cool and pure, particularly on board of ship, where many patients are often crowded together; for unless the sick berth be frequently washed, fumigated, and sprinkled with vinegar, it will be in vain to think of removing the disease or prevent it from becoming general, by the most powerful remedies given internally.

In the convalescent state, the patient should abstain from all animal food, except light soups. But when the bowels have, in some measure, recovered their tone, a moderate use of such flesh meats as are the least stimulating, may be allowed: and for the patient's greater security, a dose of

* Lac Amygdalæ Ph. Lond.

No. 7. R. Amyli tritj drachmas sex, aquæ puræ libras tres:
 Coque ad libras duas, et adde sub finem coctionis,
 Corticis cinnamomi drachmam,
 Gummi arabici semunciam; cola.
 Capiatur pro potu communi.

That is, take of

Bruised starch, six drachms,
 Water, three pounds,
 Boil to two pounds, and add at the end,
 Cinnamon, one drachm.
 Gum arabic, half an ounce.
 To be taken as common drink.

the infusion of the Peruvian bark, No. 8, or colombo, eight or ten grains should be taken twice or thrice a day.

When the strength is in some measure restored, the use of the cold bath, gentle exercise in a carriage, but particularly a change of climate, are the most effectual means to confirm the cure.

Such was the method of treatment I pursued in recent dysenteries, in my voyages to India; which, indeed, only differed from the practice of authors, at that time, in administering gentle purgatives daily, till the distemper began to yield. But when the flux was neglected in the beginning, the recovery of the patient became precarious, and all the medicines I was then acquainted with, afforded little more than mere palliating.

Since that period, I have often found the dysentery, in this country, too obstinate in its nature to yield to such simple treatment, even when called early in to that distemper. The insufficiency of the established practice, after the complaint is confirmed, has, indeed, been acknowledged by

No. 8. R. Pulveris corticis peruviani unciam,
 Aquæ cinnamomi bullientis uncias decem:
 Infunde per horas quatuor; deinde cum expressione
 cola.
 Capiantur uncia duæ vel tres singulis semihoris.

That is, take of

Bark in powder, one ounce,
 Cinnamon water boiling, ten ounces.
 Infuse for four hours; then strain off.

Two or three ounces to be taken every half hour.

those

those most conversant in this disease *; and, when it is considered, that inflammation and ulceration so often affect the intestines, it is not surprising that the feeble means hitherto proposed, have, in such cases, so generally proved ineffectual.

For several years past, when the dysentery has resisted the common mode of practice, I have administered, continues Dr. Clark, mercury with the

* Dr. Cleghorn observes, that almost all the dysenteries which fell under his observation, unless they were speedily cured in the beginning, at best proved obstinate, and too frequently fatal, in spite of the many boasted specifics for this distemper. — *Diseases of Minorca*, page 228.

The candid Dr. Donald Monro also observes, upon my first being employed in the military hospitals in Germany, I was surprised to see so many of the old dysentric cases end fatally; and imagined I had not fallen upon the right method of treating them: but upon consulting the other physical people employed in the same service, I found them as unsuccessful as myself, after having tried a variety of remedies: and at last I was convinced that the disorder will often end fatally, notwithstanding the use of what are esteemed the most efficacious remedies, when once it has continued long, and injured the structure of the intestines to a certain degree; and that when this disorder is violent, the cure principally depends upon an early and speedy application of proper remedies, before the strength be exhausted, or the structure of the bowels too much hurt. The bad success we had in treating these old cases, may, perhaps, surprise those who never practised, except in healthful cities, where the disease is commonly mild, and people apply soon for advice. But all those gentlemen who have had the care of military hospitals, where the dysentery has been frequent, and where the sick have often been sent a great way before they reached the hospitals, must be convinced of the truth of what is here asserted." — *Observations on the Means of preserving the Health of Soldiers*. Vol. I. page 336.

greatest

greatest success; and am thoroughly persuaded it is possessed of powers to remove inflammation and ulceration of the intestines, which are the chief causes of death in this distemper.

In the year 1781, the dysentery was introduced into a dock-yard, in this neighbourhood, by some sailors who returned from abroad ill of the complaint. The disease soon spread amongst the workmen, and several died. I was sent to visit a person who had laboured fourteen days under the disease, and had taken the usual medicines, without ever procuring the least relief, or occasioning one feculent evacuation. In spite of every remedy, he died in a few days. I visited several others, who had been also treated unsuccessfully in the usual manner; and prescribed from five to ten grains of calomel, with one or two grains of opium, every night at bed-time, with the occasional use of a saline purgative. In a few days the bowels were opened, and the most threatening symptoms were soon removed. To those in the chronic stage, small doses of calomel, with opium, were given every night; and sometimes in the morning, with a purge at proper intervals; and *all whom I attended recovered*, except one patient, whose liver was much enlarged, and in a state of suppuration when I first visited him.

In autumn 1783, the dysentery was epidemical in Newcastle and its neighbourhood. I was called to several cases in private practice, which had resisted

reverted the common treatment; and attended sixty patients belonging to the dispensary. *Calomel*, in almost every instance in which it was exhibited, soon subdued the disease, or reduced it to the nature of a simple diarrhœa.

In the following autumn the dysentery was again prevalent. The same remedy was tried in obstinate cases, and every patient recovered.

Although in the above instances of epidemic dysentery, the superior efficacy of calomel seemed to be established, yet I was still in doubt whether to impute its virtues to its purgative, or to its mercurial quality. But in the autumn of the year 1785, the dysentery again made its appearance, and was attended, in many patients, with so great irritability of the stomach, that the common purgatives were immediately rejected. To two patients, in this situation, I gave three grains of calomel, conjoined with opium, every four hours, which in both allayed the vomiting. By an inconsiderable quantity of mercury, the gums became tender: in consequence of which the gripes and tenesmus were instantly relieved; natural evacuations followed; and health was speedily restored, without the assistance of any other medicine.

Being now thoroughly convinced of the advantages resulting from calomel as a mercurial, I gave it more freely during the course of the epidemic, and also recommended the practice to all

my medical friends in this neighbourhood. All of them have concurred in observing, that they were much more successful than formerly; and that generally as soon as the medicine occasioned the slightest tenderness of the gums, the distemper was either speedily removed, or became extremely tractable.

In prescribing mercury in the dysentery, the physician will be at the same loss with respect to the quantity which may be requisite to affect the system, as he is in other complaints. In some patients twelve grains of calomel, in divided doses, will bring on slight symptoms of salivation. The majority, however, in this country, will bear from twenty to thirty grains; and, in a few instances, it has been found necessary to persevere in its use, along with purgatives, till one drachm or more has been taken.

The dose of calomel, in the early stage of the dysentery, should be always adapted to the violence of the distemper. In the beginning it ought to be given from five to eight grains, with a sufficient quantity of opium to procure an alleviation of the gripings; and, after a few nights, the quantity should be diminished. In the acute stage, a saline purge should be occasionally administered, with a view to carry off acrid corrupted humours; and if it operate freely, it will generally afford the greatest relief: but in very obstinate cases, the disease will seldom abate much of its

its violence, till some degree of tenderness be perceived in the mouth. At the same time, however, care must be taken not to bring on any considerable degree of salivation, which will always prolong the recovery.

In the acute stage of the disease, I have always preferred calomel to every other preparation of mercury, on account of its laxative properties; and to render it more certainly so, and likewise to determine it to the surface, I at first combined it with a small portion of tartar emetic*. But in my latter practice, I have generally added no other medicine to it, except opium.

In the chronic stage of the disease, in which the patient is always considerably debilitated, a salivation ought to be carefully avoided. Calomel should, therefore, be only given in small doses, as an alterative, conjoined with opium. And if it still, with such an addition, prove too laxative, from two to four grains of crude quicksilver, extinguished with mucilage of gum-arabic, ought to be substituted. In this state of the disease a pill, composed of one grain or two of ipecacuanha, and half a grain of opium, with a sufficient quantity of conserve of roses, should be taken every morning, with the occasional use of rhubarb, demulcents, absorbents, or columbo, as may seem to be indicated.

* Antimonium tartarifatum, Ph. Lond.

But with a view to illustrate this subject more fully, I shall subjoin the following histories, which, it is hoped, will convey some idea of the great obstinacy of the dysentery in particular seasons; and also place the merit of the treatment by mercury in a proper light.

CASES OF THE DYSENTERY TREATED WITH
MERCURY.

CASE 1.

William Dixon, aged 37, who had laboured under the dysentery for nine days, was admitted to the Dispensary on the 2d of August, 1785. The gripes were intolerably severe, the evacuations painful, and very frequent; and for above a week, he had passed nothing except mucus tinged with blood. In the evening the calomel pills, No. 9, were prescribed, and No. 10 during the day; and he
was

No. 9. R. Calomelanos grana decem,
Antimonii tartarificati granum,
Conservæ rosæ quantum satis fit ut fiant pilulæ duas.
Capiatur una pro rē natâ.

That is, take of

Calomel, ten grains,
Tartarified antimony, a grain,
Conserve of roses, as much as is sufficient to make
two pills. One to be taken occasionally.

No. 10. R. Florum chamæmeli semunciam,
Kali præparati drachmas duas,
Aquæ bullientis uncias octo:

Infunde

was ordered to take one immediately, and the other in an hour, drinking with the latter barley-water, or thin gruel, to encourage their operation. At bed-time he took an opiate.

August 3d. He vomited once, and had three excrementitious evacuations after the pills began to operate; which mitigated his pain for two hours. But soon afterwards his complaints recurred with greater violence; and he had a fruitless motion to stool every hour through the night. An antimonial emetic was prescribed, and five grains of calomel, with two grains of opium at bed-time. He was also ordered to take the purgative, No. 2. on the following morning.

4th. He rested well from ten o'clock last night till four this morning, and had one easy motion before he took the purgative; which also operated five times. The gripes and tenesmus returning in the afternoon, with great violence, the calomel and opium were repeated.

For three nights longer he continued the calomel and opium, and took the saline purgative oc-

Infunde per quatuor horas, et cola.

Capiantur duæ vel tres uncixæ ter in die.

That is, take of

Chamomile flowers, half an ounce,

Prepared kali, two drachms,

Boiling water, eight ounces.

Infuse for four hours, and strain.

Two or three ounces are to be taken three times a day.

For No. 2, see page 177.

casionally;

caſionally ; by which means the diſeaſe was reduced to a ſimple diarrhœa ; which was ſoon removed by ſmall doſes of ipecacuanha and opium, and two or three doſes of rhubarb.

CASE II.

Mary Laidler, aged 23, was admitted to the Diſpenſary on the 24th of Auguſt, 1785. She had been afflicted with the dyſentery for four days ; and complained of great pain in her bowels, conſtant griping and tenefmus ; and evacuated nothing but mucus tinged with blood. Her pulſe beat 112 ; ſhe was very thirſty ; her head ached ; and ſhe had hot and cold fits alternately. The calomel pills, No. 10. were given as in the former caſe ; which vomited her twice, and produced two feculent evacuations. At bed-time an anodyne was preſcribed, and in the morning a doſe of ſalts.

Auguſt 25th. She vomited the ſalts in the morning, and continued in great pain through the whole day. Six grains of calomel, with two grains of opium, made into pills with conſerve of roſes, were ordered at bed-time.

26th. She had a tolerable night, but the gripes and tenefmus returning in the morning, the ſaline purgative was given, which her ſtomach retained, and during its operation gave great relief : but

soon afterwards the painful symptoms recurred with their former violence. The calomel pills, with opium, were repeated at bed-time.

Notwithstanding the frequent repetition of purgatives, her disease did not yield till the first of September, when she had taken half a drachm of calomel. Her mouth then became tender; the gripes and tenesmus left her; and her stools, which were of a green colour, were evacuated with ease. A gentle salivation continued to the 7th of September; her evacuations became natural, and she seldom passed more than one stool in the twenty-four hours.

On the 14th of September, after some error in diet, she had a return of the gripes and tenesmus, which were removed by one dose of calomel and opium. On the following morning she took a dose of salts. An opiate was continued at bed-time for some nights longer; and, on the 17th, she was dismissed, being perfectly cured.

CASE III.

Elizabeth Laidler, aged 17, the sister of the former patient, was seized with the dysentery on the 23d of August. The symptoms being very violent, the calomel pills, with emetic tartar, were prescribed: and, as her disease was so recent, she took nothing more for some days, than an anodyne at bed-time, and a saline purge occasionally in the morning. Her complaints becoming

ing

ing worse, on the 27th she was directed to take two pills, with eight grains of calomel, and two grains of opium, at bed-time.

August 28th. The gripes and tenesmus being severe in the morning, the saline purgative was prescribed, which gave two feculent evacuations. But in the afternoon all her complaints were again aggravated, and she passed twelve small slimy stools, some of them variegated with green and yellow, and some tinged with blood. Three grains of calomel, with half a grain of opium, were directed to be taken every four hours, and one scruple of Dover's powder at bed-time.

On the 29th I did not visit her: but she was better than formerly; passed three excrementitious stools in the day, and had a good night.

On the 30th, the gripes and pain of her bowels returning with violence, the saline purgative was repeated; and as it only afforded temporary ease, five grains of calomel, with one scruple of Dover's powder, were given, in the form of a bolus, at bed-time.

September 1st. Having taken twenty grains of calomel, since the 28th ult. she, this day, complained of her mouth; but said that her bowels were totally relieved. From this time she had one or two feculent evacuations daily. On the 7th, her mouth was quite well. She had no return of the dysenteric symptoms after her mouth became affected, nor had occasion for any other

medicines, except an opiate at nights, and a dose or two of rhubarb. On the 17th of September, her health being established, she was dismissed.

Her brother was also violently attacked with the same distemper, which was removed in a few days, by taking every night calomel and opium, with the occasional use of laxatives. Her mother likewise was seized with the dysentery, but in a milder form, which soon yielded to the common treatment.

CASE IV.

Christian Hall, aged 21, from lying in the same bed with a child who had the dysentery, caught the disease on the 20th of August. On the 22d, the apothecary of the Dispensary prescribed the calomel pills, with emetic tartar, and on the following morning the saline purgative.

August 23d. I first visited her. She was feverish, and had received nothing but temporary relief from the above medicines; the gripes, tenesmus, and fruitless attempts for an evacuation being still exceedingly urgent. Eight grains of calomel, with one of opium, were given at bed-time, and the purgative was ordered to be again taken in the morning.

24th. She had four feculent evacuations; but in the afternoon all her complaints returned. A dose of Dover's powder was given at bed-time. And five grains of calomel, and one grain of opium,

opium, were directed to be formed into four pills, one of which was ordered to be given in the morning, and to be repeated every four hours.

These pills she continued regularly till as many were taken as contained fifteen grains of calomel. Her disease then yielded. Her stools became natural, and she was in a constant uniform perspiration. On the 24th of September, being free from all complaints, she was dismissed.

CASE V.

Walter Lewans, aged 50, was seized with the dysentery, which he caught from lying in the same room with his wife, and three children, who were ill of that distemper. On the 26th of August, being the second day of his confinement, I visited him; and as his disease was very violent, he was ordered the calomel pills, with emetic tartar, No. 9, and half a drachm of Dover's powder at bed-time.

August 27th. The pills having occasioned no evacuations, the saline purgative was given in the morning, which procured a few stools, and, during its operation, some abatement of the gripes and tenesmus. But in the evening, when I visited him, he was in great torment from the pain in his bowels, and from a continual desire to go to stool, passing nothing but bloody mucus. Fomentations were directed to be applied fre-

For No. 9, see page 189.

quently to his bowels ; and Dover's powder, with five grains of calomel, in a bolus, was prescribed at bed-time. Two ounces of Epsom salts, dissolved in a pint of water, were also ordered to be given in the morning, in divided doses.

28th. The gripes and straining were almost constant last night. This day he passed several green slimy stools with the salts, but without much abatement of the symptoms. An anodyne clyster was exhibited, which was immediately rejected. The bolus was repeated at bed-time.

29th. All the symptoms continued equally severe. He had scarcely a moment's respite from the close-stool, but passed nothing, except ragged mucous filaments tinged with blood. The fomentations giving no relief, and a hiccup being urgent, a blister was applied to the abdomen. Ten grains of calomel, and two grains of opium, were made up into four soft pills, with a little conserve of roses, one of which was directed to be given every four hours.

30th. He was something easier. Having had no feculent stool, eight grains of calomel, with one grain of emetic tartar, were ordered at bed-time, and a dose of Epsom salts in the morning.

September 1st. He had three feculent stools, but the gripes and tenesmus soon recurred with their former violence. Two grains of calomel, and a quarter of a grain of opium, were prescribed
every

every four hours; with the decoction, No. 7, for common drink.

On the 4th, his mouth became a little affected with the calomel. The gripes and tenesmus left him, and his stools continued natural for this and the following day. But on the 6th of September the griping and tenesmus, and the bloody mucous stools returned. A dose of salts was given, which procured larger feculent evacuations than formerly.

After this small doses of ipecacuanha and opium were prescribed, with a purge occasionally; and Dover's powder at bed-time. Sometimes his evacuations were natural, and voided with ease; sometimes the contrary, and attended with great tenesmus. Purgatives seemed to be attended with no advantage, and clysters gave no relief to the tenesmus, as they were instantly rejected. His mouth was still a little tender from the mercury: he took his food better, and the hiccup had disappeared. The pills, with ipecacuanha and opium, were continued; and he was ordered the fuet decoction*, with a view to sheathe the intestines.

For No. 7, see page 182.

* Take two ounces of fresh fuet, and a pint of new milk, set them over a slow fire, and keep stirring them till they boil; then add a spoonful of starch finely powdered, and let them boil together,

On

On the 15th of September he had recruited some strength; and had got free of all the painful symptoms, except the tenesmus, which was now attended with *prolapsus ani*. His mouth being quite well, five grains of calomel were again given at bed-time, for two or three nights in succession. After this, his complaints were so much mitigated, that clysters could be retained: from a state of great weakness and emaciation, he was gradually restored to health, and was able to return to his work on the 8th of October.

CASE VI.

As the dysentery, in autumn 1785, was, in several instances, complicated with a low remittent fever, the following history is introduced with a view to shew the application of the practice to such cases.

George Henderson, aged 18, was admitted to the Dispensary, on the 30th of August, 1785. He had been feverish for eight days, complained of universal pains, thirst, head-ach, slight rigors, and severe gripes and tenesmus, although he passed only two jagged slimy stools daily. He was sick at the stomach, and his pulse beat 120, but feeble. The calomel pills, with emetic tartar, No. 9, were prescribed, which vomited him

For No. 9, see page 189.

four times, and occasioned six copious bilious stools, with some hardened lumps of feces. A draught, with antimonial wine and tincture of opium, was given at bed-time.

August 31st. He sweated profusely in the night. His pulse, this morning, was reduced to 100. The tenesmus was removed, but he was still tormented with gripes. Five grains of calomel, with opium, were directed at bed-time, and the saline purgative, No. 2, in the morning.

September 1st. He had nine green feculent evacuations with the purgative: but he still complained of gripes and tenesmus. Appearing weak, three grains of calomel only, with one grain of opium, were prescribed at bed-time, for this and the two following nights.

His stools became feculent; and he only passed four or five daily. On the 4th of September, he was seized with rigors: he became afterwards hot, his pulse rose to 120; and he appeared considerably debilitated. Two ounces of the decoction of the bark were prescribed every two hours, with a few drops of tincture of opium, if it seemed to run off by the bowels; and an anodyne draught was given at bed-time.

5th. He sweated during the whole night. During this day he passed eight bilious offensive stools, but without any tenesmus. The medicines were continued, but at night he was more feverish,

Next day the dysenteric symptoms totally disappeared, and the distemper now assumed the form of a low fever, and was attended with nocturnal exacerbations and delirium. On the 8th of September his bowels were able to bear the bark in substance. He was supported with a cordial regimen, and took an opiate every night at bed-time. His fever was totally subdued by the 15th of the month; and he soon afterwards recovered his usual state of health.

CASE VII.

A lady, of a delicate constitution, aged 25, subject to frequent returns of hæmoptoe, and to a sore throat, attended with specks and slight ulceration; on the 2d of September, 1785, was attacked with the dysentery, and in the night passed fifteen mucous evacuations, tinged with blood, and attended with severe gripes and tenesmus. A saline purgative and anodyne clyster were directed by her surgeon. On the evening of the 3d of September, all her complaints were much aggravated, and she had a constant desire to retch. Five grains of calomel, with half a grain of emetic tartar, and one grain of opium, were ordered.

September 4th. She vomited frequently after the pills, and in the night had twelve bilious evacuations, some of them larger than before; but in the morning she was in great torment in her bowels, and her stomach rejected every thing.

Fomenta-

Fomentations, and an anodyne clyster, were ordered, to give some alleviation to the pain: a large blister was afterwards applied to the abdomen, and a pill, with one grain of calomel, and a quarter of a grain of opium, and a saline draught in the act of effervescence, were directed to be taken frequently. The vomiting and painful symptoms were removed in the evening, and she afterwards passed a good night.

5th. Being still easy, but having had no feculent evacuation, castor oil was directed in the morning; but from her not persevering long enough in its use, it had no effect. An emollient clyster was ordered to be exhibited, and three grains of calomel at bed-time.

6th. She had a tolerable night. The gripes and tenesmus being urgent, a decoction of tamarinds, with fenna and salts, was prescribed, in separate draughts, this morning. The two first evacuations were excrementitious, but she afterwards had other two quite thin, and as black as ink. This alarmed me much, as I never had seen any person recover from the dysentery, who had passed stools of such a colour. Soon afterwards her pulse rose to 120; her skin became cold and clammy, and she was seized with a violent spasmodic pain in the chest. A bladder with hot water was applied to the seat of pain, an opiate was given, and the pills with calomel,

as prescribed on the 4th, were ordered to be regularly persevered in.

7th. She had a much better night than could have been expected. The gripes and pains returning in the morning, a saline purgative was prescribed. She passed in the day four feculent stools, two stained with green and yellow; and two, making about the quantity of a pint, of the same black colour as before. A dose of calomel and opium was given at bed-time.

On the 8th, the gripes and tenesmus being very severe, the calomel and opium were repeated at bed-time: and on the morning of the 9th, having considerable nausea and tension over the whole abdomen, the purgative was again given in spoonfuls; which procured several black evacuations; but the pain continued without abatement till she got her anodyne at bed-time.

For the two following days she appeared much better; her stools were sometimes natural, sometimes variegated with green and yellow, and sometimes quite black. The infusion of bark was prescribed, but she thought it gave no relief, and therefore did not use it liberally.

On the 11th, the nausea, sickness, and gripes returned with violence: her stools, however, were feculent, but often black, with a greenish cast. From this time to the 17th, opium and calomel were given regularly at bed-time, with a laxative occasionally. Although she took about
half

half a drachm of calomel, her mouth was never affected. The dysenteric symptoms, however, now totally disappeared. But her recovery was protracted by an attack of her usual sore throat; and a troublesome suppression of urine, to which she had been also formerly subject.

CASE VIII.

A married lady, aged about 40, on the 27th of August, 1785, was seized with the dysentery, which resisted many judicious medicines directed by the late Mr. Hawdon. On the 5th of September I first visited her. She was then so much reduced, that she could not sit up in bed. She laboured under continual nausea, vomited frequently, and complained of incessant gripes and tenesmus. She had been forced to go to the close stool above thirty times during the last twenty-four hours; but passed nothing except mucus tinged with blood. Her pulse beat 120; she complained of great anxiety and restlessness; and her stomach and bowels were very much inflated, and gave her great pain upon the least pressure. Her countenance was pallid, her eyes sunk, and her whole features exhibited the appearance of a person worn out with pain. She also had clammy sweats on her face and neck, slight hiccup, and complained much of pain in her back and loins, attended with frequent solicitations to make urine, which was hot, and never voided

voided except when she went to stool. In this dangerous state a large blister was ordered to be applied to the umbilical region, after the use of fomentations, and five grains of calomel, with two of opium, were prescribed at bed-time; a decoction of tamarinds, with Rochelle salt*, was ordered to be taken in the morning by spoonfuls till it operated.

Sept. 6th. The sickness and vomiting abated as soon as the blister began to operate, and she passed a better night than formerly. In the morning she had five evacuations, attended with less gripes; and after taking the purgative, she had twelve motions, some of them feculent, and some thin and bilious. In the evening her evacuations were again mucous and bloody, attended with severe griping and tenesmus. Three grains of calomel, with two of opium, were prescribed at bed-time.

7th. She rested sound in the beginning of the night. In the morning her evacuations were slimy, small, and frequent; some tinged with blood, and others with green bile. The calomel and opium were repeated, and the purgative ordered to be taken in the morning.

8th. She was in an universal sweat this morning, and her pulse beat 100 pulsations in a minute. Her evacuations were feculent and bilious;

* Natron Tartarifatum Ph. Lond.

and the gripes and tenesmus were much relieved. Having now the utmost aversion to medicine, nothing was ordered except calomel and opium at bed-time.

On the 10th, her stools being very frequent and more copious, one grain of ipecacuanha made into a draught with cinnamon water and cordial confection*, was ordered every four hours, with a few drops of tincture of opium. Her stools being restrained, five grains of calomel were given at bed-time, with fifteen drops of tincture of opium.

From this time to the 13th, she continued the calomel and opium. Her stools were generally excrementitious; but she had the hiccup and foreness of the abdomen upon the least pressure, and continued feverish. The infusion of bark, with tincture of opium, was prescribed. Having taken thirty-nine grains of calomel, an anodyne draught was ordered at bed-time.

For the five following days she took support better, and now, for the first time, entertained hopes of recovery. Her mouth was a little sore; her evacuations were bilious and feculent, and voided with little pain.

On the 19th, her mouth was considerably ulcerated, and she was in a gentle salivation. This day she passed twenty feculent stools: as she thought the infusion of the bark increased her purging, the draughts with ipecacuanha, as pre-

* Conf. Aromatica Ph. Lond.

scribed on the 10th, were substituted, which soon moderated the looseness.

From this to the 6th of October, she continued to spit about one pint and a half in the twenty-four hours, when the salivation began to subside. From the time her mouth ulcerated, the painful complaints of the bowels disappeared, and towards the end of the salivation, she had only one motion in three days. Having had no solicitation to make urine, and having voided none for a week past, one drachm of dulcified spirit of nitre* was given every four hours, in a saline draught, on the 6th of October, and on the following morning a gentle laxative. Her urine next day began to flow, the ulceration of the mouth soon disappeared, and she very rapidly recovered a state of perfect health.

None of the patients to whom I had hitherto prescribed mercury, in the dysentery, having had so much ulceration of the mouth, I was exceedingly alarmed lest a profuse salivation, in so debilitated a subject, should have proved fatal. But my fears were soon removed, as I found she daily gained more strength, took her nutriment better, and got free from the dysenteric and febrile symptoms.

CASE IX.

Mrs. —, aged 37, of a delicate make, and for ten years past subject at times to a profuse

* Sp. *Ætheris Nitrosi* Ph. Lond.

hemorrhage from the nose, after waiting upon a relation who died of the dysentery, on the 2d of September, 1785, was seized with the same distemper, in a violent manner. Mr. Hawdon had prescribed an emetic, saline, and other purgatives, with opiates occasionally, which had only procured some temporary alleviation.

On the 11th of September I first visited her. Notwithstanding the use of an opiate, she had passed a bad night, and had been twelve times at the close-stool, but voided nothing except a little jagged mucus tinged with blood. Her pulse was 120; her tongue dry; her skin parched; and she complained of sickness, great pain in her bowels, of tenesmus and dysuria. Half an ounce of crystals of tartar was dissolved in a quart of barley-water, for common drink; and two pills, composed of five grains of calomel, and one of emetic tartar, were prescribed; the first to be taken at eleven, and the latter at twelve o'clock. In the evening, when I visited her again, she had passed fifteen stools of the colour and consistence of molasses, without gripes or tenesmus, and found herself very much relieved. Six grains of calomel, and two grains of opium, were directed at bedtime, and an infusion of tamarinds, with Rochelle salt, to be taken by spoonfuls in the morning.

On the 12th, when Mr. Hawdon and I visited her, she had passed two stools as black as ink; and through the day had twenty evacuations of
the

the same colour, variegated with bile. Six grains of calomel, with opium, were prescribed at bed-time. On the 13th, the purgative was repeated. She vomited a considerable quantity of green bile, and had fourteen stools in the day. The calomel and opium were again ordered. She drank buttermilk, and was allowed ripe fruit.

On the 14th, in the morning, she vomited three times: as she still continued feverish, with much inflation of the bowels, the purgative was repeated, which relieved the gripes and tenesmus. In the afternoon, ten grains of Dover's powder were given in a bolus, and fifteen were ordered at bed-time. Two grains of calomel, with half a grain of opium, and a quarter of a grain of emetic tartar, were also prescribed every four hours.

On the 15th and 16th, her complaints were much mitigated, and her evacuations were bilious, less frequent and excrementitious. Her pulse, however, still beat 120; she was feeble, and had no desire for nutriment. Having taken in all thirty-one grains of calomel, five grains more were prescribed with opium, at bed-time; and afterwards its use was interdicted. Next morning a purgative was ordered.

For the two following days she had only a diarrhœa; but soon afterwards she was seized with a profuse hemorrhage from the nose: purple spots made their appearance in various parts of the
body,

body, and blood began to ooze from her gums. Next day she made bloody urine, and also passed coagulated blood with her stools, which were now of a natural consistence. The hemorrhage exhausted her much; but being free from the painful complaints of her bowels, she was in better spirits than could have been expected. As her stomach retained every thing, lemon juice was given freely in panado and gruel, with port wine. The bark was injected in the form of a clyster, and exhibited liberally by the mouth, both in decoction and substance. For two or three days blood kept oozing from her nose, gums, or uterus; and the slightest pressure on any part of her body occasioned an *ecchymosis*. But by taking plenty of support, and the bark freely, with allum whey, every alarming symptom disappeared in a week, and she was speedily restored to a better state of health than she had formerly enjoyed.

This is the only case which has occurred in my practice, where a dissolved state of the blood took place in the dysentery during the mercurial course, although I have prescribed the medicine to some hundreds of patients. I therefore cannot impute these alarming symptoms to the effects of calomel, but to a gradual corruption of the humours induced by a debilitating infectious disease. A history of the same nature has already been re-

lated* where the patient had not taken a single grain of mercury.

CASE X.

Ralph Bamborough, aged 34, was seized with symptoms of cholera, which terminated in the dysentery on the 5th of September. On the 9th he was admitted to the Dispensary. His pulse beat 100, the gripes and tenesmus were very severe, and, for four days past, he had above forty fruitless efforts to stool, every twenty-four hours. Two grains of emetic tartar, dissolved in boiling water, were added to the saline purgative, No. 2, which procured twelve feculent evacuations; but his complaints recurring with violence, six grains of calomel and two of opium were given at bedtime.

On the 10th, he had three bilious stools in the morning: he was greatly relieved, and his pulse was reduced to 84. In the afternoon the pain in his bowels became insufferable, and he was constantly at the close-stool, but passed nothing except slime and blood. The calomel and opium were repeated, which gave instant relief.

On the following morning the saline purgative was taken. But as his complaints did not yield, the calomel and opium were continued every

* See page 292 of Clark on Diseases of Hot Climates.

For No. 2, see page 177.

night at bed-time, till the 13th of September. His mouth then became slightly affected, and continued tender till the 18th. From this period the gripes and tenesmus totally disappeared. He had sometimes only one natural evacuation, in the twenty-four hours, and never more than three. On the 20th of September he was free from every complaint, except weakness, and in a few days returned to his labour.

One of his children, aged one year, took the complaint, with continual vomiting, griping, and tenesmus, and passed nothing but blood: being totally neglected, I found her dying in convulsions on the fourth day of the distemper.

His other child, aged five, was seized also in a violent manner; four grains of calomel, with opium, were given every night at bed-time, with a purge occasionally; but the disease did not give way till the mouth was slightly affected, and then it became extremely tractable.

His wife was also attacked with the dysentery, which required the use of calomel, and she speedily recovered.

CASE XI.

Dorothy Ruffel, aged 23, was admitted to the Dispensary on the 8th of November, 1785. She had been afflicted with the dysentery for eight days; and her disorder had increased so much, that she passed above twenty evacuations every

hour, attended with severe pain in her bowels and tenesmus. Her pulse beat 120; she was very thirsty, and much reduced. The antimonial emetic, No. 1, was prescribed. At bed-time she took a bolus, with one scruple of Dover's powder, and six grains of calomel.

November 9th. These medicines had afforded much relief, and she slept till one o'clock in the morning. From that time till eight, she had twenty efforts to stool, and was in great pain in her bowels. Fomentations were directed; and the saline purgative, which procured eight large bilious feculent evacuations. In the afternoon all the former symptoms recurred with violence: her pulse beat 140, and she had continual nausea. Ten grains of Dover's powder, and two grains of calomel, were ordered at four o'clock; and five grains of calomel, with two of opium, at bed-time.

10th. She was tolerably easy in the beginning of the night; but all her complaints returned after the effect of the opium was over. One grain and a half of calomel were ordered to be taken every four hours. When she was visited at four o'clock in the afternoon, she was still very feverish, much griped, and had passed thirty-two stools during the last twenty hours, which contained nothing except blood and mucus. One scruple

of Dover's powder, with four grains of calomel, was ordered at bed-time, and a dose of salts in the morning.

11th. Her pulse beat 140; the nausea, gripes, and tenesmus, were very severe, and the salts scarcely afforded temporary relief. Fomentations were ordered to the abdomen, and afterwards a large blister. An anodyne clyster was administered at four in the afternoon, and the calomel and opium at bed-time.

12th. She was easier in the night. Through the day, she passed ten stools as black as ink, with less pain than formerly; but her pulse still continued to beat about 140 pulsations in a minute. She was feebler, and had some hiccup. The anodyne clyster was given in the afternoon. She had now taken twenty-nine grains of calomel; but as it had not in the least affected her gums, and as she was now so weak as to be able to take little medicine, I was determined to persevere in the use of mercury, and to support her strength with smooth panado, rice jelly and wine. Five grains of calomel, with two of opium, were therefore given at bed-time.

13th. She was at stool every five minutes in the night, and was continually harassed with the hiccup and nausea. Her pulse, in the morning, beat 128. Her bowels were inflated, and sore upon the least pressure; her face was clammy, and her extremities were cold at times. As she was
much

much griped, whilst I remained in her room, I persuaded her to take the salts. In the afternoon her complaints were not relieved. The anodyne clyster was given at four in the afternoon, and the calomel and opium at bed-time.

14th. The symptoms in the morning were the same as yesterday. She had fourteen mucous bloody stools in the day. The gripes in the afternoon were less severe. Having taken thirty-nine grains of calomel, and her mouth being tender, it was omitted, and an anodyne prescribed at bed-time.

15th. She was easier this day; passed twelve stools, some of which were feculent. The anodyne clyster was given at four o'clock in the afternoon, and four grains of calomel, with opium, at bed-time.

16th. Her pulse beat 128, and was stronger; she had eight stools during the last sixteen hours, most of them feculent, and intimately mixed with green bile. She also was in an universal warm sweat. Her mouth being very little affected, the calomel and opium were repeated at bed-time.

For the six following days, as there still remained considerable tension of the abdomen, and some degree of hiccup, the calomel was continued; sometimes to the quantity of four, and sometimes only three grains at bed-time. On the 22d, having taken in all seventy grains of calomel, and her

her mouth being sore, it was laid aside. Her stools were now commonly feculent, but sometimes mixed with a little mucous, and sometimes tinged with bile. She was generally in a moderate perspiration, and her pulse subsided to 100. Her appetite began to return, and she shewed signs of a slow recovery.

On the 22d, as she complained of a cough and general rawness in the throat and stomach, the spermaceti emulsion, with some mucilage of gum-arabic, was prescribed. The opiate was continued at bed-time, and one grain of ipecacuanha, and a quarter of a grain of opium, given every four hours in a pill.

On the 27th, her mouth was perfectly well, but she had three or four stools daily, sometimes with slight gripes, till the 22d of December, when the diarrhœa was totally subdued. After this she rapidly recovered her strength, and was dismissed in perfect health, on the 6th of January.

The preceding cases I have purposely selected from the epidemic of 1785, because the dysentery was, in that season, more obstinate, in general, than it has ever occurred in my practice. I also attended the Dispensary patients twice, and sometimes thrice daily, to note down the symptoms and the effects of the medicines. Mr. Wilkie, the apothecary to the charity, paid also uncommon

common attention to see the plan of treatment carried punctually into execution ; and entered his observations on the letters of admission. Of thirty-one obstinate cases of dysentery admitted under my care, to whom mercury was given, I did not lose a single patient.

But in private practice I was not so successful. For I lost two patients to whom mercury was given. The first, indeed, had a mortification of the bowels, and died two days after I visited her, being the eighth day of the distemper. The other patient I visited on the second day of the dysentery ; she punctually complied with every direction ; but passed stools as black as ink early in the distemper ; and, on the fifteenth day, died of a mortification in the bowels. She took forty grains of calomel, which had no apparent effect on the gums, or general system.

To illustrate the application of this practice to the chronic stage of the dysentery, I shall here introduce the following case, where the disease was contracted in India: and, from my experience in this country, I am induced to conclude that mercury will seldom fail, except the intestines be deeply ulcerated, or a consuming hectic formed.

CASE XII.

David Holliday, a seaman, aged 40, in the autumn of 1781, was seized with the dysentery, whilst he served on board the *Magnanime*, off the
island

island of Ceylon. His complaint was tedious and obstinate; and he remained two months at the naval hospital at Trincomalie before he recovered. On his passage from the Cape of Good Hope, in April, 1783, he was again seized with the dysentery, which continued with severity till he arrived in England in the end of May following.

On the 14th of October, 1785, he was admitted to the Newcastle Dispensary. He was then very much emaciated; his complexion was fallow; and considerable fulness was observable in the region of the stomach. From the time he was attacked with the dysentery off the Cape, he said he had never been free from the complaint for one month at a time; and that he seldom of late had been free from it for one day. His evacuations were small, and rarely exceeded six in number, in one day, but were generally attended with very severe gripes, and with much slime and blood. Two grains of calomel, and two of opium, were prescribed every night at bed-time; and one grain and a half of ipecacuanha, with one drachm of crystals of tartar, every morning, in the form of a bolus.

When he had taken sixteen grains of calomel, his mouth became a little tender, and he had only one easy motion daily. The calomel was now only repeated every alternate night.

His

His mouth getting quite well, and the dysenteric stools returning, the calomel was again repeated every night; and as his colour and strength appeared better at every visit, it was persevered in till the 13th of November, when he had taken in all thirty grains. The opiate was continued at bed-time, and the decoction of bark was prescribed.

He continued free from every dysenteric complaint for fourteen days; and, having almost recovered his usual strength, no farther medicines were thought necessary.

On the 29th of December, having caught cold, he had a slight diarrhœa, which he would have paid no regard to, had he not been desired to come to the Dispensary on the slightest return of the complaint. An opiate was ordered every night at bed-time, and two grains of ipecacuanha in the morning, which speedily removed the looseness. Several months after this I saw him in perfect health, without having experienced the least relapse.

Although mercury had not been proposed for the cure of the dysentery when I was last in India, yet it appears, that soon afterwards its efficacy was confirmed in this disease*. But having had

no

* Dr Bogue, of Titchfield, who had been at Calcutta in the year 1757, and communicated some ingenious observations which

no correspondence with my acquaintance in that part of the world, this circumstance did not come to my knowledge till the year 1787, when *An Essay on the efficacy of mercury in the cure of inflammatory diseases, and the dysentery*, appeared in the London Medical Journal, by the ingenious Dr. James Lind, of Windsor*.

The

which appeared in the first edition of Dr. Lind's *Essay on the Diseases of Hot Climates*, which I regret was not published before I set out upon my first voyage, revisited India in the year 1772, where he had, for three years, the superintendance of the naval hospitals. He remarks, when he was last there, that mercury was more in use than formerly on the coast of Coromandel, and "That in bilious fluxes, when the common remedies failed, it was used with great success, either by unctio, or internally; obstruction in some of the viscera being then supposed to be the cause of the disease. Fluxes of long standing were seldom cured without it."—See Dr. Lind's *Essay on Hot Climates*, fourth edition, published in 1788, page 99.

* One of the most useful purposes for which mercury has been given is, that of curing dysenteries—a practice which has been lately followed with the greatest success on the Coromandel coast. It was first made known to the different surgeons in the Carnatic, by a letter sent to each of them from the late Mr. Paisly, first surgeon of the Presidency of Madras.

Their method is as follows:—As soon as the patient begins to complain of symptoms of dysentery, they give him repeatedly small doses of emetic tartar till it operates upwards and downwards, and thoroughly clears the stomach and bowels; after which they begin to give mercury combined with ipecacuanha, in the following form:

R. Argenti vivi scrupulum,
 Pulv. gum. arabic. scrupulos duos,
 Aq. puræ q. s.
 Tere in mortar. marmor. ad perfect. extinct. globulorum,
 et adde

Pulv.

The dysentery, on the coast of Coromandel, is far less prevalent than in other parts of India; and, when it appears, is often supported by a

Pulv. rad. ipecacuan. drachmam
Fiat massa dividenda in pilulas lx. quarum capiat unam,
tertiâ vel quartâ quaque horâ.

That is, take of

Quicksilver, a scruple,

Powder of gum-arabic, two scruples,

Water, as much as is sufficient.

Rub these in a mortar until the perfect extinction of a globule, and add

Ipecacuanha powder, a drachm.

Make into a mass, and divide into forty pills, of which take one every third or fourth hour.

This medicine they use till the urine, which in the beginning is high coloured, becomes pale, which they look upon as a sign of the disease being subdued; after which a few opiates, and some small doses of rhubarb, mixed with absorbent powders, generally complete the cure.

During the course of the disease, they do not neglect to administer emollient and starch clysters; and on the Malabar coast, where they had not in 1780, got into the practice of using mercury in the cure of dysenteries, if the patient had much griping, they put a blister upon the belly, which, they were of opinion, likewise prevents inflammation and mortification, the symptoms most to be apprehended in this disorder.

It is probably from mercury preventing inflammation, and consequently mortification, that the above practice is successful. Mr. Wilson, an ingenious surgeon, in the service of the Hon. East-India Company, told me, when at Pondicherry, that he had seldom lost above two men in a year by dysenteries in the battalion of seapoys to which he was surgeon, since he became acquainted with the practice of using mercury in this complaint: whereas before that he frequently lost in the battalion from twenty to thirty men by dysenteries in a sickly season.—London Medical Journal, Vol. 8. p. 153.

diseased

diseased state of the liver. This, no doubt, suggested the idea of the propriety of exhibiting mercury in this disease.

Doctor Balfour, who for many years resided in Bengal, has also given calomel in the acute dysentery, in the same manner as recommended in the preceding pages.

Dr. Balfour's practice in the dysentery, after cleansing the stomach and bowels by an infusion of tamarinds, with emetic tartar and manna, is to give eight grains of calomel, with two grains of opium, at bed-time, on the first day of the disorder, and to continue them for four or five nights following, or longer, if the nature of the stools should require it: and to repeat the same quantity of calomel and opium, at any time in the course of the disease, when judged requisite. He at the same time gives in the morning a saline purgative, or castor oil, till the disease begins to yield*.

* See his Treatise on putrid intestinal remitting fevers, published 1790, page 142 et seq.

PRACTICAL OBSERVATIONS.

SECT. XIV.

OF ACIDS IN DYSENTERY.

SIR John Pringle, speaking of dysentery, condemns the common practice of giving chalk julep in this disease, as supposing it arose from an acid. I soon, says he, became sensible of its bad effects. Acids best suit this disease. These, however, are to be given in so small a quantity as not to be too sharp for the bowels: a practice not only supported by Degnerus*, but by Dolæus, another author of experience, and of such candour, that though he also refers the cause to an acid, yet strongly recommends a mixture of lemon-juice with oil, and says, that with that plain medicine he had cured above a hundred †. Agreeable to this method of sheathing the acid, we were told by a commander of the hussars in the German campaign, that when his men were seized with the dysentery, they put cream and vinegar into

* Vid. Hist. dyfent. cap. III. § lxxvii. Hoffman, in these cases, recommends the use of Rhenish wine.

† Encyclopæd. Med. Lib. III. cap. v. sect. xx.

separate vessels, and with two straws endeavoured to suck up equal portions of each at a time.

J. Heurnius, in a note, de Morb. Intestin. Lib. VI. cap. 10. Fernelii, says, that garlick, with sugar and lemon-juice, was found to be a remedy, for people who had returned to Amsterdā from the East-Indies, afflicted with the dysentery, from living on putrid food, in 1597. Ol. Heurnius mentions the same remedy for dysenteries in long voyages.

A most pernicious prejudice, says the amiable Tissot, which still prevails is, that fruits are noxious in dysentery, and even sometimes produce it. This arises from confounding complaints of the bowels. A disorder arising from wind, or the cholick, may be aggravated by acids, but the case is different here. The dysentery is contagious, whereas this is not, and it is acids that neutralize the poison productive of so cruel a disorder. In truth bad fruits, and such as have not ripened well, in unseasonable years, may really occasion cholicks, a looseness (though oftner a costiveness) and disorders of the nerves, and of the skin; but never can occasion an epidemical dysentery or flux. Ripe fruits, of whatever species, and especially summer fruits, are the real preservatives from this disease. The greatest mischief they can effect, must result from their thinning and washing down the humours, especially the thick glutinous bile, if they are in such a state; good ripe fruits
being

being the true dissolvents of such; by which indeed they may bring on a purging, but such a one as is rather a guard against a dysentery.

We had a great, an extraordinary abundance of fruit in 1759 and 1760, but scarcely any dysenteries. It has been even observed to be more rare, and less dangerous than formerly; and if the fact is certain, it cannot be attributed to any thing more probably, than to the very numerous plantations of trees, which have rendered fruit very plenty, cheap, and common. Whenever I have observed dysenteries to prevail, I made it a rule to eat less flesh, and plenty of fruit; I have never had the slightest attack of one; and several physicians use the same caution with the same success.

I have seen eleven patients in a dysentery in one house, of whom nine were very tractable; they eat fruit and recovered. The grandmother and one child, whom she loved more than the rest, were carried off. She managed the child after her own fashion, with burnt wine, oil, and some spices, but no fruit. She conducted herself in the very same manner, and both died.

In a country seat near Berne, in the year 1751, when these fluxes made great havock, and people were severely warned against the use of fruits, out of eleven persons in the family, ten eat plentifully of prunes, and not one of them was seized with it: the poor coachman alone rigidly observed

served that abstinence from fruit enjoined by this prejudice, and took a terrible dysentery.

This same distemper had nearly destroyed a Swiss regiment in garrison in the south of France; the captains purchased the whole crop of several acres of vineyard; there they carried the sick soldiers, and gathered the grapes for such as could not bear being carried into the vineyard; those who were well eating nothing else: after this not one more died, nor were any more even attacked with the dysentery.

A clergyman was seized with a dysentery, which was not in the least mitigated by any medicines he had taken. By mere chance he saw some red currants; he longed for them, and eat three pounds of them between seven and nine o'clock in the morning; that very day he became better, and was entirely well on the next.

I could greatly enlarge the number of such instances; but these may suffice to convince the most incredulous, whom I thought it might be of some importance to convince. Far from forbidding good fruit, when dysenteries rage, the patients should be encouraged to eat them freely; and the directors of the police, instead of prohibiting them, ought to see the markets well provided with them. It is a fact of which persons, who have carefully informed themselves, do not in the least doubt. Experience demon-

strates it, and it is founded in reason, as good fruit counter-operates all the causes of dysenteries.

The experience of all countries and times so strongly confirms these important truths, that they cannot be too often repeated, too generally published, whenever and wherever this disease rages. The succession of cold showers to violent heats; too moist a constitution of the air; an excess of animal food; uncleanness and contagion, are the real causes of epidemical fluxes.

PRACTICAL OBSERVATIONS.

SECT. XV.**OF THE SCARLET FEVER.**

THIS disease appeared in Birmingham about the middle of May, 1778, and in the beginning of June was frequent in many of the towns and villages in the neighbourhood. It continued in all its force and frequency to the end of October, varying however in some of its symptoms as the air grew colder. In the beginning of November it was rarely met with, but towards the middle of that month, the air again becoming warmer, it increased again, and in some measure resumed those appearances which it possessed in the summer months, but which it had lost during the cold winds in October.

It affected children more than adults; but seldom occurred in the former under two years of age, or in the latter when more than fifty. In children the number of boys and girls that suffered from it was nearly equal, but in adults the number of female patients considerably exceeded that of the male; probably because the former were more employed in attendance upon the sick, and consequently more exposed to the infection.

On the first seizure the patients felt an unusual weariness, or inaptitude to motion; a dejection of spirits, and a slight soreness or rather stiffness in the throat; with a sense of tightness in the muscles of the neck and shoulders, as if they were bound with cords. This symptom sometimes became very painful, so that it was difficult to prevail upon the younger patients to throw their heads sufficiently back, to allow of a full inspection of the throat. In a few hours chilly fits took place, generally alternating with flushing heats; but at length the heat prevailed altogether. The patients now complained of slight headach, and transitory fits of sickness. They passed a restless night, not so much from pain as from want of inclination to sleep.

The next day the soreness in the throat increased, and they found a difficulty in swallowing, but the difficulty seemed less occasioned by the pain excited in the attempt, or by the straitness of the passage, than by an inability to throw the necessary muscles into action. A total disrelish to food took place, and the sickness frequently arose to a vomiting. The breathing was short, and often interrupted by a kind of imperfect sigh. The skin felt hot and dry, but not hard; and the patients experienced frequent, small, pungent pains in different parts of the skin, as if touched with the point of a needle. Towards evening the heat and restlessness increased; the breath be-

came

came hot and burning to the lips; the patients wished to drink, but the tendency to sickness, and the exertions necessary to frequent deglutitions, were so unpleasant, that they seldom cared to drink much at a time. This night was passed with still greater inquietude than the former. In the morning the face, neck, and breast appeared redder than usual; in a few hours this redness became universal, and increased to such a degree of intensity, that the face, body, and limbs, resembled a boiled lobster in colour, and were evidently swollen. Upon pressure the redness vanished, but soon returned again. The skin was smooth to the touch, nor was there the least appearance of pimples or pustules; but now and then a case occurred, with a few circular livid spots interspersed amongst the red colour, particularly on the neck and breast; but this appearance did not portend a more unfavourable termination of the disease. The eyes and nostrils partook more or less of the general redness; and in proportion to the intensity of this colour in the eyes, the tendency to delirium prevailed.

Things continued nearly in this state for two or three days longer; the intense scarlet then gradually abated, a brown colour succeeded, and the skin becoming rough, peeled off in small branny scales. The tumefaction subsided at the same time, and the patients gradually recovered their strength and appetite.

During

During the whole course of the fever, the pulse was quick, small, and uncommonly feeble. The bowels regular in their discharges. The urine small in quantity, but scarcely differing in appearance from that of a person in health. The submaxillary glands were generally enlarged, and rather painful when pressed upon.

The tongue was red, and moist, at the end and at the sides; but drier in the middle, and more or less covered with a yellowish brown mucus. The velum pendulum palati, the uvula, the tonsils, and the gullet, as far as the eye could reach, partook of the general redness and tumefaction. I never saw any real ulceration in these parts; but sometimes collections of thick mucus, particularly on the back of the œsophagus, greatly resembling the specks or sloughs in the ulcerated fore throat, but they were easily washed away by the injection of any common gargle.

The above is a picture of the disease as it then most usually appeared; but it too frequently assumed a much more threatening aspect; for in children, the delirium commenced in a few hours after the first seizure, which was marked by symptoms of extreme debility. The flesh was intensely hot: the scarlet colour appeared on the first or second day, and they died very early on the third.

In others, who survived this rapid termination, when the scarlet colour turned to *brown*, and their
recovery

recovery might have been expected, the pulse still remained feeble and quick, the skin became dry and harsh, the mouth parched, the lips chapped and *black*; the tongue hard, dry, and *dark brown*; the eyes heavy and sunk; they expressed an aversion to all kinds of food, and extreme uneasiness upon the least motion or disturbance. Thus they lay for several days, nothing seeming to afford them any relief. At length a clear amber coloured matter discharged in great quantities from the nostrils, or the ears, or both, and continued so to discharge for many days. Sometimes this discharge had more the appearance of pus, mixed with mucus. Under these circumstances when the patients did recover, it was very slowly; but they generally lingered for a month or six weeks from the first attack, and died at length of extreme debility.

In adults, when more violently attacked, the rapidity of the fever, the delirium, &c. was such, that they died upon the fourth or fifth day, especially if a purging supervened. Some survived to the eighth, or to the eleventh day; in all these the throat was but little affected: the eyes had an uncommon red appearance, not that streaky redness which is evidently occasioned by the vessels of the cornea being injected with red blood, but an equable shining redness, resembling that which we may observe in the eye of a ferret. But notwithstanding this morbid appearance in
the

the eye, the strongest light was not offensive. This redness might often be discovered, by lifting up the upper eyelid, some hours before it shewed itself in the part of the eye that is usually visible, and it was of some consequence to attend to this circumstance, as it greatly influenced the event of the case.

These patients were extremely restless, clamorous, and desirous to drink; but after swallowing one or two mouthfuls, upon taking another, they seemed to forget to swallow, and let it run out at the corners of the mouth; whilst others spouted it out with considerable force, and were very angry if urged to drink again. In these cases, the scarlet colour appeared very soon after the attack, but in an unsettled irregular manner; large blotches of red, intermixed with others of white, and these often changing places.

Besides the full scarlet colour described above, there were frequently small circular spots of a *livid colour*, above the breast, the knees, and the elbows. The pulse from the very beginning was so quick, so feeble, and so irregular, that it was hardly possible to count it for half a minute at a time.—It is needless to add, that the greater part of those who laboured under these dreadful symptoms died. A few recovered, and others fell into a state of debility bordering upon idiotism; from which they were at length rescued by time, and generous living.—

These

These were the appearances during the hot months, but in the month of October, when the air became colder, the scarlet colour of the skin was less frequent, and less permanent. Many patients had no appearance of it at all, whilst others, especially adults, had a few very minute red pimples, crowned with white pellucid heads, but these appeared only in the parts where the skin is most tender. The inside of the throat was very considerably tumefied, so as to render deglutition painful and difficult; its colour a dull red, sometimes tending to a *livid*. This affection of the fauces in some patients seemed to extend down the gullet to the stomach, and was accompanied with painful efforts to vomit, particularly whenever any thing was swallowed: in others it spread itself down the windpipe to the lungs, as was evident from the cough, the strait breathing, the apprehension of suffocation, and other peripneumonic symptoms. In others again, its progress along the Eustachian tube was indicated by sharp pains in the ear. The eyes did not now bear the light, though they had less of that redness described before, but still a slight tinge of it was visible, together with something of the shining watery appearance which is so remarkable in the measles. The patients too complained of a general painful soreness in all their limbs, and not unfrequently of very acute pains in the ancles, knees,

knees, wrists and elbows, attended with more or less swelling where the pain was most violent. These swellings had sometimes a reddish shining appearance, very like the gout.

In most of these cases the pulse beat 130, or 140 strokes in a minute; it was small, but yet hard, and sometimes sufficiently so to justify the opening of a vein. The blood thus taken away, in every instance when cool, appeared fizy, and the whole crassamentum firm.

Through the course of the disease, large quantities of viscid mucus, and other matters, with much of the purulent appearance, were from time to time discharged from the throat and nostrils.

Some patients threw out several white, or ash-coloured floughs, though no such floughs were visible upon inspecting the throat; but in most, the fauces, particularly the tonsils, were covered with them, and upon their separation looked raw, as if divested of their outer membrane.

The fever under this autumnal appearance, generally terminated favourably on the fifth, eighth, or eleventh day, but sometimes was protracted to a much greater length, by the formation of large painful abscesses; and I have been told of several cases that were followed by a numerous succession of boils upon different parts of the body. But no symptom was more troublesome

some

some to some individuals, than small ulcerations on the sides, and down towards the root of the tongue, which were so painful as to deprive them of the power to take solid food, even for several days after the inclination for it had returned*.

* Vide Dr. Withering's well drawn-up Account of the Scarlet Fever, as it appeared in Birmingham in 1778.

PRACTICAL OBSERVATIONS.

SECT. XVI.

THE SEQUEL OF SCARLET FEVER.

THE anxiety of the physician, and the danger of the patient, generally cease with the disease which gave rise to them; but this was not the case with the disorder now under consideration, for it often happens, that in ten or fifteen days from the cessation of the fever, another train of symptoms demand the attention of the former, and exercise the sufferings of the latter. They often felt, says Dr. Withering; after a few days amendment, a something that prevented their further approach to health: an unaccountable languor and debility, together with a stiffness in their limbs, an accelerated pulse, disturbed sleep, disrelish to food, and a paucity of urine.

These symptoms were soon followed by an universal swelling of the anasarca kind, and sometimes an ascites. In some patients the feverish disposition ran high, in others it existed only in a moderate degree. In some the dropsy affected the

the

the brain, producing coma, vigil, delirium, blindness; with the most enlarged expansion of the iris, which was incapable of contraction in the strongest light. In others, the dropsy affected the lungs, and produced every symptom of the hydrops pectoris.

The urgency of these symptoms, added to the very evident appearance of disease, soon compelled the patients to apply for assistance; and the event, under the mode of treatment here to be described, was almost always favourable.

When called upon, says Dr. Withering, to visit patients in this situation, I commonly begin with giving calomel at night, and a mild purgative in the morning.

If a febrile pulse attended the other symptoms, an emetic was useful; as were also the saline draughts and other neutral diuretic salts.

In cases of great debility, with comatose, or peripneumonic symptoms, large and repeated blisters were of infinite service: but in the more common cases, when the dropical symptoms were the principal cause of complaint; small doses of calomel and rhubarb occasionally, to keep the bowels open; dilute solutions of fixed alkali, squills, Seltzer water; and other diuretics in daily use, were adapted to the disposition and temperament of the patient.

In some cases that resisted the usual remedies, a single grain of Pulv. fol. Digitalis given twice,

or

or at most thrice a day, until its effects became evident, soon effected a cure in a manner highly pleasing to the patient, for it is never necessary to push its doses so far as to occasion nausea, or to produce any other kind of disorder in the system. When the urine flowed freely, steel and other tonics were employed; and the recovery was greatly promoted by gentle exercise, high seasoned food, wine, and the wearing of flannel in contact with the skin.

I cannot conclude this subject without noticing a remedy strongly recommended by Plenciz* ;

R. Rhei electi,

Spiritus falis coagulati āā drachmas duas ;

Mercurii dulcis,

Auri fulminantis,

Extracti scillæ āā drachmam dimidiam m.

fiant pilul. c. rob juniperi, pondere unius

alteriusve grani.

That is, take of

Rhubarb,

Marine acid, of each two drachms ;

Calomel,

Fulminating powder †,

Extract

* Tractatus de Scarlatina.

† The method of making the fulminating powder is this: Put a dram of filings of gold, with half an ounce of aqua regia, newly made, into a matras, placed in sand. When the menstruum ceases to act, pour off the solution; and, if any of
the

Extract of squills, of each half a drachm.

Mix so as to make pills with juniper rob, and make each of them one or two grains weight.

In the exhibition of this medicine the following precautions are to be observed.

Firstly. One or two of these pills are to be given every second or third hour; according to the age and strength of the patient. This quantity ought to procure three or four stools every day: but if it fail to do that, either the dose must be increased, or some purgative, such as extract of jallap, sulphurated scammony, or aloetic pill with scammony, must be added; by this means a salivation will be prevented. But,

Secondly, the more effectually to prevent a salivation, the patient after each dose of the pills ought to drink some ounces of tea prepared with juniper berries, or a decoction of ginseng roots, warm.

the gold be left, add as much more aqua regia as shall be sufficient to dissolve it. Dilute the solution with ten times its quantity of warm water; and then drop in oil of tartar per deliquium till the effervescence and precipitation cease. The whole being now suffered to settle, the clear liquor is to be poured off, and the precipitated matter washed with warm water till it becomes insipid, and afterwards exsiccated.

Great care must be taken not to rub any of this powder with the glass stopple, as the gold will explode, and much danger accrue from the shivering of the phial.

Thirdly.

Thirdly. After taking these pills for two or three days, they must be omitted a day or two.

Fourthly. If the use of this medicine occasion too much disturbance in the habit, opiates will be proper, and if much feverish disposition prevails, it must not be employed.

Within a day or two after the use of this remedy, there is generally a copious discharge of water, both by urine and stool.

It is not only in cachectic, leucophlegmatic, and dropical cases that this remedy is useful: but in the most obstinate alvine and urinary obstructions; provided they are not accompanied with inflammation.

So likewise in the suffocating catarrh, and in the humoral asthma, where kermes mineral, tartarised sulphur of antimony, squills, gum ammoniac, and other, even the most powerful remedies, produced no good effect, the *aurum fulminans*, with a grain or two of *calomel*, afforded an immediate relief.

He further adds, that this medicine was a *secret* of Dr. *Weber's*, of Furnberg, who used it with great success in a variety of obstinate chronical diseases.

PRACTICAL OBSERVATIONS.

SECT. XVII.

ON THE ORIGIN OF SCARLET FEVER.

REITERATED observation, aided by the concurrent testimony of many of my colleagues in this place, engaged in extensive practice, says Dr. Withering, confirms me in the opinion that the infection of the *Scarlatina Anginosa*, like that of the measles and small-pox, can only be taken once, and that it is not generated under any known circumstances like the poison of the Typhus or low fever, but that it is from time to time propagated by contagion, like the other eruptive fevers just now mentioned.

Most practitioners have considered putrid sore throat, and scarlet fever, as the same, or as a modification of the same disease; but there is one particular feature which indicates an essential difference in the two diseases; I mean the subsequent anasarcaous affections, so common after the febrile state of the *Scarlatina Anginosa*, but rarely succeeding to the ulcerated sore throat. If these dropical

appearances are supposed to depend upon the debility consequent to the increased and violent action of the capillary subcutaneous vessels during the eruptive state, or if again upon the morbid affection of the lymphatics from the absorption of the poisonous miasmata, the dropsy should appear after one disease as well as after the other.

In scarlet fever the papilla of the tongue are also most remarkably prominent.

As to the immediate cause of this disease, those who are best acquainted with the present imperfect state of knowledge are the least likely to expect a satisfactory answer to such an enquiry. Morton says * It is a poison defiling the animal spirits, whose malignity does not only overwhelm the spirits in its first attack, but breaks down the mass of blood by agitation, into an acrid colluvies, more powerfully than any other ferment.

Navier † thinks the cause of the Scarlatina Anginosa is something acrid, caustic, and putre-

* *Causa morbillorum continens seu immediata est Venenum spiritus inquinans, quod non tantum in primo morbi stadio malignitate sua spiritus obruit, sed massam sanguinis agitando eam in colluviem acrem, præ cæteris omnibus fermentis colliquescit. Loc. citat.*

† *Causam hujus morbi non solum cum illa, quæ sudorem anglicam, aphtham gangrænosam, dysenteriam, &c. excitavit, eandem esse dicit, sed in miasmate, quod cum morbilloso comparat, acri caustica et putrefaciente consistere ipsumque morbum analogiam alere perhibet cum morbo epidemico pecorum.*

factive, like that of the measles. He believes that a similar cause produces the sweating sickness, the gangrenous sore throat and dysentery.

Plenciz * attributes the effects to certain animated particles (*femina animata*), which he thinks are capable of multiplying their kind. He supposes they may be wafted by the winds to considerable distances, or that they may sometimes lie dormant a long time in the body; and thus he accounts for the production of the disease, when it did not previously exist in the neighbourhood.

But whether this disease be caused by animalcula capable of generating their kind, or by certain miasmata which have the property of assimilating other particles of matter to their own nature, by some mode of fermentation hitherto but little understood, there can be no doubt but it is *contagious*, and perhaps so in a degree nearly equal to the small-pox and measles.

I have repeatedly had occasion to observe, that it is upon the third or fourth day after exposure to the contagion, that the patients begin to complain. Its first seat seems to be the pituitary or Schneiderian membrane; every part of which it presently pervades, passing from thence down the œsophagus to the stomach, down the larynx to the lungs, along the Eustachian tubes to the ears; from the nose, to the eyes, and to the brain itself.

* *Traët. de Scarlat. p. 64—68.*

The redness of the skin does not necessarily imply a determination of the poison to the surface of the body; because we know instances of a similar effect being almost instantaneously produced by certain affections of the stomach. How many people after eating mussels have we not heard of, that have experienced great anxiety, presently followed by a general redness upon the skin; and which again was soon removed by the exhibition of a vomit to discharge the contents of the stomach. Who has not observed the full scarlet flush upon the face, after eating herrings or vinegar; after drinking acetous beer or cyder? Can any body suppose that in the one case the offending matter is instantly conveyed to the skin? or that in the other it is carried from thence instantaneously as the contents of the stomach are evacuated?

I shall only add further upon this subject, that the effects of acids just now mentioned, like those ascribed to the miasmata of the *Scarlatina Anginosa*, are by far the most remarkable in hot weather.

However vain our hopes may be, built upon so shallow a foundation, yet if my conjecture be true, that the poison first makes its lodgment upon the mucus separated by the pituitary membrane, lining the nose and fauces, it will be of some consequence to those who from their attendance upon the sick, are necessarily exposed to the infection,

fection, to hawk up and spit out frequently the mucus that collects in the fauces, and likewise to promote the discharge of that which lodges in the nostrils.

From the same consideration I am led to advise those who having already imbibed the poison, are seized with the first symptoms of the disease, immediately to take an emetic, and to snuff something up the nose that will occasion sneezing. If these precautions are attended to, I can venture to assert, from a pretty large experience, says Dr. Withering, that the infection will either be altogether prevented, or else very trifling in its consequences. After the operation of the emetic, I generally direct the patient to go to bed, and drink plentifully of wine whey with spirit of hartshorn.

Vomiting seems to be the remedy of nature: it stands foremost in her efforts to throw off the cause of the disease: it most amply fulfils the indications arising both from a consideration of the cause, and of the effects. If we want to dislodge a poison from the fauces, and the mucous membrane of the nose, and to prevent its descent to the stomach, how shall we do it so effectually as by emetics? If the poison already acting upon the nervous system, destroys the equilibrium of the circulating powers, how can we so readily restore that equilibrium as by emetics? Does not the experience of every day confirm their efficacy in a

5

variety

variety of disorders dependent upon local congestions?

But not to proceed further with questions which cannot fail to be answered in the affirmative, I will venture to assert, says Dr. Withering, that the liberal use of emetics is the true foundation for successful practice in the Scarlet Fever and Sore Throat*.

In the very first attack, a vomit seldom fails to remove the disease at once. If the poison has begun to exert its effects upon the nervous system, emetics stop its further progress, and the patients quickly recover. If it has proceeded still further, and occasioned that amazing action in the capillaries, which exists when the scarlet colour of the skin takes place, vomiting never fails to procure a respite to the anxiety, the faintness, the delirium.

In autumn, when the throat was more affected; when the tumefaction of the fauces was such, that the patients could not swallow but with the utmost difficulty: when the peripneumonic symptoms threatened suffocation, and bleeding was

* Dr. Fothergill, at page 55 of his Treatise on the Sore Throat, says, "If we are called in at first, whilst the sickness or vomiting continues, it will be of use to promote this discharge, by giving an infusion of green tea, chamomile flowers, carduus, or a few grains of ipecacuanha. In some instances where the attack has been severe, and this method practised, the disorder has gone off with more ease than was at first apprehended."—

ineffectual,

ineffectual, an emetic opened the gullet, and unloaded the lungs, so that deglutition became easy, and respiration free.

But it is necessary to add, that a vomit only sufficiently strong to evacuate the contents of the stomach, is by no means adequate to these effects. The vomit must be powerful, and, in ordinary cases, repeated once in forty-eight hours*. In those with more urgent symptoms daily; and in the worst cases twice or thrice in twenty-four hours. The patients never fail to express the relief they find after the operation, and the physician soon discovers it in the countenance and in the pulse. As to the form of the emetic, the practitioner may vary it as he pleases; but I generally combine tartar emetic in solution with ipecacuanha in powder, that I may be more certain of their full effect on the stomach, and avoid the danger of their acting as a purgative. I also give them in much larger doses than usual, in order to secure a certain violence of action upon the system.

It is of peculiar importance also to know, that the progress of the infection may be stopped by the use of very practicable precautions, such as may be adopted in almost every house. When it first appeared among us, it often ran through

* I have lately been informed that the physicians in Germany have now very generally adopted the practice of giving powerful and repeated vomits.

whole families, and in boarding schools particularly it made such havoc, that most of the schools in the town and vicinity of Birmingham were under a necessity of dispersing; and the yet healthy children of many families were sent from home; but this method contributed to spread the infection more widely and more rapidly through the country.

From the time that Dr. Haygarth first communicated his ideas of stopping the progress of the small-pox, the probability of stopping the progress of the Scarlet Fever by the adoption of similar methods, was too evident to escape the most inattentive observer. The first trials proved successful; and the full body of evidence elucidated by the clearest reasonings, which appeared soon afterwards from the same masterly hand, encouraged me to proceed; and now for several years past I have never thought it necessary either to break up a school, or to disperse a private family. Allotting apartments on separate floors to the sick and to the healthy; choosing for nurses the older parts of the family, and prohibiting any near communications between the sick or their attendants, and the healthy, with positive orders instantly to plunge into cold water all the linen, &c. used in the sick chambers, has very universally been found sufficient to check the further progress of the infection.

PRACTICAL OBSERVATIONS.

SECT. XVIII.

OF THE EMPLOYMENT OF CALOMEL IN SCARLET
FEVER.

IN every case of scarlatina I have been called to, says the benevolent and learned Dr. Rush, I have always began with giving a vomit joined with *calomel*. The vomit was either tartar emetic or ipecacuanha, according to the prejudices, habits, or constitutions of my patients. Besides evacuating the contents of the stomach, it cleansed the throat in its passage downwards. To ensure this effect from the *calomel*, I always directed it to be given mixed with syrup or sugar and water, so as to diffuse it generally over every part of the throat. The *calomel* seldom failed to produce two or three stools. In several cases I was obliged, by the continuance of nausea, to repeat the emetics, and always with immediate and obvious advantage. I gave the *calomel* in moderate doses in every stage of the disorder. To restrain its purgative effects, when necessary, I added to it a small quantity of opium.

Whenever

Whenever I had the good fortune to see a patient where the scarlatina appeared to be in a forming state, adds Dr. Rush, a vomit of ipecacuanha, or tartar emetic, mixed with a few grains of calomel, has never failed of completely checking the disorder, or of so far mitigating its violence, as to dispose it to a favourable issue in a few days; and if these observations should serve no other purpose, than to awaken the early attention of patients and physicians to this speedy and effectual remedy, they will not have been recorded in vain.

During the whole course of the disorder, continues Dr. Rush, where the calomel failed of opening the bowels, I gave lenient purges, when a disposition to costiveness required them.

The throat was kept clean by detergent gargles. In several instances I saw evident advantages from adding a few grains of *calomel* to them. In cases of great difficulty of swallowing, the patients found relief from receiving the steams of warm water mixed with a little *vinegar*, through a funnel into the throat.

A perspiration kept up by gentle doses of *antimonials*, and diluting drinks, impregnated with wine, always gave relief.

In every case which did not yield to the above remedies on the third day, I applied a blister behind each ear, or one to the neck, and I think, always with good effects.

This

This disease proved fatal in many parts of the country, upon its first appearance; but wherever the mode of treatment here delivered was adopted, its mortality was soon checked. The *calomel* was used very generally in New-Jersey and New-York. In the Delaware state, a physician of character made it a practice not only to give *calomel*, but to anoint the outside of the throat with *mercurial ointment*.

I cannot conclude without saying a few words on gargles. A decoction of *contrayerva*, with *oxymel* of squills, was found of the greatest use, as also *tincture of roses*, and barley-water *acidulated* with the *marine acid**. It was astonishing the quantity of ropy matter that these either voluntarily applied, or injected by means of a large pewter syringe, brought away. The addition of *calomel*, as has been mentioned before, is excellent. Let me, however, observe, that injections are not to be used with children, as they either prevent them from reaching the seat of the disorder, by their tongues, or they swallow them, and the putrid taint of the ulcers, together; the mischief spreads beyond the power of art to restrain it; violent purgings ensue, or fatal hæmorrhages from the penetrating gangrene.

* Twenty or thirty drops to a cupful.

PRACTICAL OBSERVATIONS.

SECT. XIX.

A DESCRIPTION OF THE PUTRID SORE THROAT.

THIS disease is said to have appeared first in Spain about the year 1610; to have spread from thence to Malta, Sicily, Otranto, Apulia, Calabria, and the Campagna, in the space of a few years; and to have broke out at Naples in 1618, where it continued upwards of twenty years ravaging the different parts of that kingdom*.

It is not certainly known how much longer it remained in these countries, or to what others it was communicated at that time, its declension being as obscure as the causes it sprung from. That it wholly disappeared in these parts, soon after the time above-mentioned, seems probable, from the silence of those physicians, who have published their observations made in the places which had so severely felt the effects of this distemper.

Several writers, as Wierus†, Forrestus‡, Ra-

* Severin. de recondita abscessum natur. p. 446.

† Joh. Wieri Observat. lib. vi. de Angina pestilenti epidemica, Oper. p. 910.

‡ Pet. Forrest. Observat. lib. vi. de Febribus publice grassantibus, p. m. 150.

mazzini*, and others, take notice of epidemic affections of the throat, in some respects resembling the disease here described; but a little attention to the symptoms of each will, I think, discover an essential difference between them. The same, I think, may be said of the sore-throat and the scarlet fever, which shewed itself at Edinburgh in 1733 †.

Tournefort, in his voyage to the Levant ‡, seems to have met with this disease in the islands of the Archipelago; at least so far as one can judge from the imperfect description we have of it. His account is as follows:

“ When we were in this island (Milo) there raged a terrible distemper, not uncommon in the Levant; it carries off children in twice 24 hours: it is a carbuncle, or plague-sore, in the bottom of the throat, attended with a violent fever. This malady, which may be called the child’s plague, is epidemical, though it spares adult people. The best way to check the progress of it, is to vomit the child the moment he is perceived to grow heavy-headed. This remedy must be repeated, according as there is occasion, in order to evacuate a sort of aqua-fortis (a corroding matter) that discharges itself on the throat. It

* Bern. Ramazzini *Constitutiones Epidem.* Oper. p. 195, & seq.

† *Medical Essays*, vol. iii. p. 26.

‡ *Tournefort’s Voyage to the Levant*, vol. i. p. 135.

is necessary to support the circulation of the juices, and the strength of the patient, with spirituous things; such as the theriaca, spir. vol. oleos. aromat. and the like. The solution of liquid styrax in brandy, is an excellent gargarism upon this occasion. Though it is a case that requires the greatest dispatch, the Levantines are seldom much in haste, or capable of curing any disease."

When it first broke out in the countries above-mentioned, it soon engaged the physicians of those times, as well to observe its nature, effects, and whatever might contribute to its cure, as to vindicate their respective systems and opinions; and out of such of the tracts then published as I have had an opportunity of perusing, the following account of it, as it appeared at that time, has been collected.

Ludovicus Mercatus, physician to Philip II. and III. kings of Spain, among his Consultations, published in tome V. of his works*, has one upon this disease †. He mentions it as a calamity which had but *newly* appeared, and at that time affected several provinces and cities of that kingdom. He has related only one case; but in commenting upon it, according to the method of

* D. Ludovici Mercati, medici a cubiculo Philippi III. Hispaniarum Regis, &c. Oper. Tom. 5. Francof. 1614.

† De Faucium et Gutturis anginosi et lethalibus Ulceribus. Consultatio xxiv. p. 137.

writing on diseases then in use, he takes notice of several circumstances relative to it, and makes some observations respecting the cure, which, though they seem to have been neglected by many who succeeded him, experience hath since shewn to be just: some of these will be pointed out in their proper places; and, considering that he wrote very soon after the distemper broke out, the approbation prefixed to this part of his work, being dated in 1612, they are a proof of his attention and sagacity.

Johannes Andreas Sgambatus, a physician of Naples, published a treatise upon this subject in 1620*. He gives us a methodical and pretty exact history of the symptoms and method of cure, both general and topical, together with a summary view of the disputes, which were at that time managed with sufficient heat and acrimony, in relation to its name, cause, and nature; about which they were as much divided as they were about the method of cure; each party appealing to Hippocrates, Galen, Avicenna, &c. for the support of their opinions concerning a disease, which it is not certain that those whom they appeal to ever knew.

Johannes Baptista Cortesius, in his *Miscellanea*

* De pestilente faucium affectu Neapoli sæviante, opusculum, auctore Jo. Andrea Sgambato, philosopho ac medico Neapolitano, et academico otioso. Neapoli excudebat Targuinius Longus, 1620, in 4to.

Medica *, takes notice of this disease, and describes its principal symptoms, in a letter to Jo. Anton. Anguilloni, physician in chief to the Maltese galleys. He considers it indeed as a different distemper from that which infested Naples, and other parts of Italy; though, from his own account of it, there appears little reason to question its being the same. He seems to have been led into this mistake by considering the disease he treats of as contagious only in a certain limited sense, whilst the Italians, as some of the Spaniards had also done, declared their's to be pestilential and contagious without restriction. He allows that the breath of a person affected might convey the contagious effluvia to another near at hand; and gives an instance of one who got the disease, and died of it, by trying, at his friend's request, who then laboured under this disease, if his breath smelt †; for from this circumstance they guessed at the degree of danger attending the sick.

In

* Joannis Baptistæ Cortesii, medici ac philosophi, in Messanensi academia praxim ordinariam e prima sede interpretantis, Miscellaneorum Medicinalium Decades Denæ. Messanæ, 1625, in-fol.

† Divi Francisci Custos, vir doctrina et moribus insignis, hac lue obsessus, tonsillas solummodo et gargareonem inflammatione læsa habebat, et continuo querebatur se percipere in ore factorem quendam; et ut hac de re certior redderetur, ad se vocavit ba calaureum quendam sibi amicissimum, qui maximo affectu assistebat, rogavitque ut vellet olfacere, percipereque naribus,

In 1636, Ætius Cletus, of Signia, in Italy, published his treatise *De Morbo strangulatorio* *, or Putrid Sore Throat, and mentions some facts relating to it, that had escaped Sgambatus and Cortesius.

Marcus Aurelius Severinus, professor of anatomy and surgery, and physician to the Hospital of Incurables at Naples, wrote also a dissertation upon this disease, under the title of *Pædanchone Loimodes, seu de pestilente ac præfocante Pueros Abscessu*; and annexed it to the second edition of his book *De recondita Abscessuum Natura*, which was printed in 1643 †. From a person of his capacity, and furnished with the best opportunities of seeing the disease in every stage and condition,

naribus, an verum esset talem fœtorum emittere, an ab ejus imaginatione prodiret: olfecit baccalaureus, me (scil. Cortesio) præfente, et multis aliis: at statim non multis elapsis horis decubuit sola faucium et glandularum inflammatione vexatus, absque aliqua manifesta corruptione partium, omnibusque præfidiis ex arte factis, quarto die suffocatus periit; et tamen Custodem non tetigerat, sed solo olfactu aerem ab ore prodeuntem naribus traxerat: quare ab hujusmodi exemplo veni in sententiam hunc morbum non esse absque aliqua contagione. Cort. Miscel. p. 698.

* De morbo strangulatorio, opus Ætiii Cleti Signini, doctoris medici et philosophi.—Romæ, 1636, 8vo.

† De recondita abscessuum natura, libri 3. Marci Aurelij Severini Tharsiensis, philosophi et medici, regio in gymnasio Neapolitano anatomes et chirurgiæ professoris.—Editio secunda, Francofurti ad Mænam, 1643. And again printed with Bartholine's Exercitationes, as a commentary upon it, and Villani's Therapeuta Neapolitanus, seu Veni mecum Consultor.—Neapoli, 1653.

we might reasonably have expected such observations as would enable one to form a just idea of this distemper; but we meet with little of this kind in his performance. He has indeed mentioned some circumstances relating to its history, not taken notice of by the other writers I have seen, and his method of cure is different from the rest; but he refers us to others for an account of the symptoms, and contents himself with reciting and commenting upon Aretæus's description of the *Ulcera Syriaca*, which he takes for granted to have been the same with the disease at that time infesting Naples; though very probably without sufficient reason.

Petrus Michael de Heredia, physician to Philip IV. king of Spain, in his *Disputationes de morbis acutis*, treats of this disease expressly in several chapters under the title of *Angina Maligna*. His history of the symptoms contains several circumstances which were not taken notice of by any other writer I have seen; so that though he was probably among the last of the Spanish physicians who wrote upon this subject, yet the diligence of his predecessors had not wholly exhausted it. In the second edition of Heredia's works, which was that I made use of*, nothing appears whereby to ascertain the time exactly when he

* Petri Michaelis de Heredia Complutensis—Philippi IV. Hispaniarum regis archiatri.—Opera medicinalia.—Lugduni, 1673. fol.

wrote his account; but as he mentions the *Poly-anthea* of De la Parra, which, according to Ren. Moreau in Bartholine's Epistles, was printed at Madrid in 1625, it is plain that he must have written after this time.

One might justly expect some curious observations upon this disease, from a person so well qualified for it as Thomas Bartholine: he was in Italy whilst it raged there, and, it might be supposed, would be attentive to the minutest circumstance relating to it, and be inquisitive enough to know what men of character had said upon it. But the Treatise which he wrote upon this disease, and published in 1646*, contains so little to the purpose, that it is difficult to conceive for what end it was written, unless to compliment his master Severinus, which he does very liberally †.

According

* Thomæ Bartholini de Angina Puerorum Campaniæ Siciliaeque epidemica exercitationes, Lut. Parisior. 1646.

† Zacutus Lusitanus also mentions this disease, and relates an unhappy instance of its effects in the following terms:

In his partibus (scil. faucibus) ex humoris virulenti affluxu gignuntur carbunculosa inflammationes, quæ pestis diræ, aut veneni promptissimi instar, contagio quodam, pueros et adultos corripunt; et sævis maleficientissimisque stipatæ symptomatis citissimam necem inferre solent. Malum in Hispania non multis abhinc annis frequens, vulgus medicorum Hispano sermone Garrotillo nuncupat; de cujus essentia, periculo, brevitate, et complicatione ustivi et ulcerosi tumoris, ac deleteria corruptione, laconice dicam. Hoc fuit pressus biennis infans, sanguineus et obesus. Primo die ex catarrhosa defluxione in suffocationem pene incurrit, difficulter respirabat, et lac deglu-

According to the accounts which have been left by these authors, it appears, that the disease which they describe was extremely malignant, and most particularly fatal to children, though adults, if they were much conversant about the sick, were very often seized with it; yet more of these recovered in proportion than of children.

As it was sometimes observed to carry off whole families together, and to spread to those places first, between which and the countries affected by it, the communication was most frequent; and also that children, sent away from the towns where it raged, in order to avoid it, escaped whilst they were kept at a distance, but had it on their return, if the disease was not extinguished; it was almost universally allowed to be *contagious* *.

Those who were seized with it, first complained of a pain or soreness in the throat, with a stiffness of the neck, an uneasiness on moving it, as if a cord was twisted about it, a difficulty in swallowing, and frequently in breathing also, with a disagreeable fetid smell and taste. On inspection,

tiebat, et feбри acuta affectus, nec plorare poterat. In parte gutturis dextra externa glandulosus apparuit tumor cum dolore multo. Secunda die intra fauces ulcus visum est ad nigrum vergens, quod putrilago et mollities multa comitabantur; et ab ore fœtor horribilis prodibat, magnum certe corruptionis completæ indicium. Tertio die nullis adjunctis auxiliis strangulatus est extinctus. De Praxi Medic. Admiranda, lib. 1. observ. 20.

* Quod ad contagium attinet, hoc communi omnium consensu atque experimento evincitur. Severin. p. 442.

the uvula, the tonsils, pharynx, and the whole fauces, appeared of a remarkably florid red colour, like that attending an erysipelas: this colour was not uniformly intense, but some parts seemed to be of a deeper dye than others. The parts above-mentioned were swelled more or less, though not always so much as to affect respiration; as in a common angina.

If the attack was violent, they had an extreme difficulty in breathing, and also in swallowing, with a kind of compressive pain and straitness of the breast and back, a redness of the whole face and neck, great heat of all the parts affected, the voice much injured, an unquenchable thirst, and the patient seemingly in danger of being choaked*. In some, the swelling and ulcers of the fauces were apparent upon looking into the mouth; in others, nothing could be seen, but a most offensive putrid smell was perceivable. A fever came on with the other symptoms, and was frequently accompanied with small pimples and eruptions like flea-bites. In very bad cases, this fever, which Mercatus calls a most malignant one †,

* ——— difficultas respirandi, et non raro deglutiendi, cum pectoris et dorsi dolore ac veluti compressione suffocante, simul cum pestilente odore, et vehementi harum omnium partium ardore, et rubore totius oris et colli, cum vocis et loquelæ vitio, ac linguæ extractione, et siti incompefcibili.—Mercat. Consult. p. 136.

† Maxime ob malignissimam febrem, quam plerumque sibi adjunctam habet, &c.—Consult. p. 136.

did not always discover its violence or malignity at first; but it was not the less formidable on this account*.

On the same day, or the following, such parts of the fauces as at first seemed to be of a deeper colour than the rest, turned white, ash-coloured, or *black*: this was not occasioned by any crust or matter superinduced upon the parts, but proceeded from a gangrenous colliquation of them, the substance itself being mortified.

The neck and throat soon after began to swell externally; the tumour was of a soft œdematous kind, and increased in magnitude as the disease advanced. All the symptoms were aggravated during the night. If the patients had any interval of quiet, it was commonly in the day-time †. About the fourth day this tumour was generally grown very large, and the white places in the fauces began to turn *black*; a putrid corrosive sanies was discharged by the mouth and nostrils ‡; the

* — nec multum fidere oportet, si febris mox non apparuit aut succrescat, nam sæpe citius suffocat affectio, quam causa succendatur; ac non raro malignitas humoris corrumpit spiritus et mortem accelerat, sine eo quod febris succendatur.—Mercat. Consult. p. 137.

† Sgambat.

‡ Quibus etiam accedit sublimis respiratio et alta ac spirituum revulsio, cum maxima pinnarum nasi distensione.—Saniei per os et nares excretio, variis ulcerum coloribus et intensissimo fœtore nauseam plerumque movente cum fordida excretionem.

the breath grew extremely offensive ; respiration, if hitherto not much affected, now became difficult, and the patient sunk into the arms of death.

Though this was the common progress of the disease, where it terminated unhappily, yet it often varied from this type, and was attended with very different symptoms. Some had an extreme difficulty of breathing from the first ; some had a violent cough ; some were comatose ; others had a delirium ; some died in a lethargic stupor ; others bled to death at the nose ; whilst others again had none of these symptoms, but were carried off suddenly by an instantaneous suffocation. The œsophagus, in some, was sphacelated down to the stomach ; the aspera arteria, in others, to the lungs. As these could only breathe in an erect position ; so those could swallow nothing when the parts were so affected. The nostrils discharged a fetid ichor, sometimes mixed with blood ; and sometimes blood alone, without mixture. This bleeding at the nose seemed at first, in one case, to give relief ; but the patient soon after died *. Mercatus relates an instance of a child that had the disease, in which the acrimony of the humour discharged from the ulcers was so great as to inflame the nurse's breast, and

In aliquibus vero extra, prope cervicem, et infra mentum glandulæ apparent, pestiferi morbi naturam redolentes, et universa cervix, et collum intumescunt, et fauces cum robore saturato, instar laqueo suffocatorum.—Merc. Consult. p. 136.

* Severin. p. 440.

brought on a mortification. He also tells us, that the father of the child whose case is described above, having frequently put his finger in the child's mouth, to draw out the viscid phlegm, had his finger inflamed, and was seized with the same distemper*.

These were the symptoms in general, and they judged of the event by the mildness of their progress, or the contrary: though it was agreed, that nothing could be more fallacious than this disease; and that the most experienced were often deceived in their prognostic.

If the redness of the fauces above described, which appeared at first being seized, was succeeded by an ulceration, without any of that whiteness (which for the future I shall call sloughs), if the swelling about the neck and throat was not large, if the patient discharged by the mouth considerable quantities of thin pituitous matter, if the breath was not fœtid, and the patient had no disgust to his food, if the eyes retained their proper lustre, all was judged to be secure.

* ——— erat quidem dira humoris conditio adeo perniciofa, efficax et contagiofa, quod digitum patris indicem, quo extrahabat eum succum ab ore filii, mordicaret, et in ruborum moveret cum dolore: tandem mox pater conquerebatur de difficultate respirandi et deglutiendi cum dolore et tumore faucium, ac saturato colore, et glandulis extra apparentibus juxta mentum. Ex quibus secundo die halitum prave olentem expirabat; ita ut jure optimo possis colligere, contagio filii patrem fuisse affectum.—Mercat. Conf. p. 139.

On the other hand, if the lustre of the eyes was considerably faded *, if the external œdematous tumour was very large, if the breath stunk, if the fauces were *livid* or *black*, with a coma or delirium, if with these the patient had an aversion to his nourishment, and his breathing became difficult or laborious, the danger was judged to be extreme.

It was not observed that the disease had any stated crisis; or that the signs of recovery, or death, appeared on any certain day. Some died on the first, others on the second, third, and on every day, to the seventh; though the greatest part died before the fourth †. Those who survived the fourteenth were thought to be out of danger, at least from the disease itself ‡, though some dropped off unexpectedly, after a much longer reprieve §.

At its first breaking out in any place, it was commonly the most severe; it then spared no age or sex, but swept off adults together with infants ||.

* Hoc unum salutis est indicium vel interritus: dum oculorum nitor adfervatur, salutis spes semper adest; quo tempore hic deperit, in propinquo mors est.—Ætii Cleti Op.

† ——— indies magis ac magis hæc accidentia crescunt, donec brevissimo tempore laborantium majorem partem perimat, idque non raro intra quartum diem.—Merc. p. 137.

‡ Ætii Cleti Op. de Morbo strangulatorio.

§ Quinimo post xxx dies, et xl. jam prærepti morbi furoribus, præter omnium opinionem ex improvise sunt extincti. Adco scil. latitans et recondita veneni vis est.—Severin. p. 440.

|| — ut pestis more in citissimam mortem pueros et adultos deducat.—Merc. Consult. p. 135.

By degrees it became less violent, and at length either wholly disappeared, or was of so little consequence as to be disregarded.

We hasten now to give an account of the Putrid Sore-throat, as it appeared in London in 1739, and is most accurately described by the late Dr. Fothergill.

The sudden death of two children in a family of distinction, and of some others near the same part of the town, whose complaints had chiefly been of a sore-throat, seem to have occasioned a suspicion that this disorder first broke out at this time: for a very few cases of the like nature occurred after these; or, if they happened, passed unobserved, little mention was made of it during several years.

It began, however, to shew itself again in 1742, but not in so general a way as to render it the subject of much public discourse; for though such of the faculty as were in the most extensive practice met with it now and then, in the city especially, it remained unknown to the greatest part of practitioners, till within these two or three years, in which time its appearance has been more frequent, both in town and the villages adjacent.

I am informed, that in the winter of 1746, so many children died at Bromley, near Bow, in Middlesex, of a disease that seemed to yield to no remedies or applications, that several of the inhabitants were greatly alarmed by it; some losing the greater part of their children, after a few days indisposition.

indisposition. Some others of the neighbouring places were affected at the same time with the like disease; which, from all the accounts I have met with from those who attended the sick, was that here treated of. I am informed likewise, that it raged at Greenwich about the same time*. It still continues in this city, and sometimes shews itself in the villages about it, though at present with so mild an aspect as seldom to prove fatal; unless the subject was very unfavourable, or the disease had been neglected, or improperly treated at the beginning; which circumstances, though of some importance in all cases, yet are of the utmost in this; as a wrong step at the first may put it out of the power of art to afford relief.

Though this disease has now been amongst us several years, and has consequently survived the different seasons, and also the variety of weather to which we are exposed, yet it seems to shew itself most frequently in autumn, and the beginning of winter; at least I have met with many more cases from September to December inclusive, than in all the other months together.

* The Reader may be pleased to take notice, that the facts contained in the following narrative, where the contrary is not expressly mentioned, have all come under the Author's observation, who has endeavoured to relate what he has seen, and in such a manner as he thought would best contribute to public advantage. It may also be necessary to observe, that the disease is described as it appeared in 1747 and 1748, that if the symptoms should hereafter vary in any circumstance, the diversity may be attributed to the nature of the distemper, and not imputed to design or inattention.—*Fothergill.*

In this country, as well as in those where the angina maligna was first taken notice of, children and young people are more exposed to it than adults: a greater number of girls have it than boys; more women than men; and the infirm of either sex are more liable to have the disease, and to suffer from it, than the healthy and vigorous.

When it breaks out in a family, all the children are commonly affected with it, if the healthy are not kept apart from the sick; and such adults as are frequently with them, and receive their breath near at hand, seldom escape some degree of the same disease.

It generally comes on with such a giddiness of the head as commonly precedes fainting, and a chillness or shivering like that of an ague-fit: this is soon followed by great heat; and these interchangeably succeed each other during some hours, till at length the heat becomes constant and intense. The patient then complains of an acute pain in the head, of heat, and soreness, rather than pain, in the throat, stiffness of the neck, commonly of great sickness, with vomiting, or both. The face soon after looks red and swelled, the eyes inflamed and watery, as in the measles; with restlessness, anxiety, and faintness.

This disease frequently seizes the patient in the fore part of the day: as night approaches, the heat and restlessness increase, and continue till towards morning; when, after a short disturbed
 slumber

flumber (the only repose they often have during several nights) a sweat breaks out, which mitigates the heat and restlessness, and gives the disease sometimes the appearance of an intermittent.

If the mouth and throat be examined soon after the first attack, the uvula and tonsils appear swelled; and these parts, together with the velum pendulum palati, the cheeks on each side near the entrance into the fauces, and as much of them, and the pharynx behind, as can be seen, appear of a florid red colour. This colour is commonly most observable on the posterior edge of the palate, in the angles above the tonsils, and upon the tonsils themselves. Instead of this redness, a broad spot or patch, of an irregular figure, and of a pale white colour, is sometimes to be seen, surrounded with a florid red, which whiteness commonly appears like that of the gums immediately after having been pressed with the finger, or as if matter ready to be discharged was contained underneath.

Generally on the second day of the disease, the face, neck, breast, and hands, to the fingers ends, are become of a deep erysipelatous colour, with a sensible tumefaction; the fingers are frequently tinged in so remarkable a manner, that, from seeing them only, it has not been difficult to guess at the disease.

A great number of small pimples, of a colour distinguishably more intense than that which surrounds them, appear on the arms and other parts.

They

They are larger, and more prominent in those subjects, and in those parts of the same subject, where the redness is least intense; which is generally on the arms, the breast, and lower extremities*.

As the skin acquires this colour, the sickness commonly goes off, the vomiting and purging cease of themselves, and rarely continue after the first day.

The appearance in the fauces continues to be the same, except that the white places become more ash-coloured; and it is now discoverable, that what at first might have been taken for the superficial covering of a suppurated tumour, is really a slough, concealing an ulcer of the same dimensions.

All the parts of the fauces above-mentioned are liable to these ulcerations; but they generally are first discernible in the angles above the tonsils, or on the tonsils themselves; though they are often to be seen in the arch formed by the uvula and one of the tonsils; and also on the pharynx behind, on the inside of the cheeks, and the base of the tongue, which they cover in the manner of a thick fur. Instead of these sloughs, where the disorder is mild, a superficial ulcer, of an

* The redness and eruption have not accompanied this disease so regularly, during the latter part of this winter (1754), as they did in the preceding seasons: in some cases they did not appear at all; in others, not till the third or fourth day; and, as I have heard, in some not till the fifth, and even later.

irregular figure, appears in one or more of these parts, scarce to be distinguished from the sound, but by the inequality of surface it occasions.

The parotid glands* on each side commonly swell, grow hard, and are painful to the touch: if the disease is violent, the neck and throat are surrounded with a large œdematous tumour, sometimes extending itself to the breast; which, by straitening the fauces, increases the danger.

Towards night the heat and restlessness increase, and a delirium frequently comes on. This symptom, which appears in some even on the first night, seems to differ considerably from the like affection in other diseases. The sick commonly answer the questions put to them properly, but with an unusual quickness; they talk to themselves incoherently when left alone, and frequently betray the first tendency to this disorder, by affecting too great a composure: this, for the most part, happens to those who sleep but little; for some are comatous and stupid, and take little notice of any thing that passes.

In this manner they continue during two, three, or more days: they commonly grow hot and restless towards the evening; which symptoms, and

* Heredia takes notice of the same symptoms, and assigns his probable reason for it.—In Angina maligna non tument externa, quia in illas ex externis translata materia fuerit, sed quia ita adimplentur interna, ut materiam fluentem non capiant, et sic ad externa dilabatur.—Heredia, p. 99.

the delirium, increase as night comes on: a sweat more or less profuse breaks out towards morning; and from this time they are easier during some hours, a faintness only continuing, of which they frequently complain more than of the rest of their sufferings.

The disease seems to have no stated period which can properly be called its 'Ακμὴ, or height. Some grow easier from the first day of the attack; but, in general, the symptoms of recovery appear on the third, fourth, or fifth day, and proceed in the following manner:

First, the redness of the skin disappears; the heat grows less; the pulse, which was hitherto very quick, becomes slower; the external swellings of the neck subside*; the sloughs in the fauces cast off; the ulcerations fill up; the patient sleeps without confusion, is composed when awake, and his appetite begins to return.

The pulse, during the whole course of this disease, is generally very quick; frequently 120 strokes, or more, in a minute: in some it is hard and small; in others soft and full, but without that strength and firmness which usually accompany equal quickness and heat, in genuine inflammatory disorders.

* At least, of all the parts about the neck, except the parotids themselves; which sometimes continue swelled and hard a long time after the other symptoms abate, and at length suppurate.

The uvula and tonsils are sometimes so much swelled, as to leave but a very narrow entrance into the gullet, and this entrance frequently surrounded with ulcers or sloughs; *yet the patients usually swallow with less difficulty and pain than might be expected under such circumstances.*

They frequently complain, soon after they are taken ill, of an offensive putrid smell affecting their throats and nostrils, which often occasions sickness before any ulcerations appear.

In those who have this disease in a severe manner, the inside of the nostrils, as high up as can be seen, frequently appears of a deep red, or almost livid colour: after a day or two, a thin corrosive sanies, or with it a white putrid matter of a thicker consistence, flows from them, which is so acrid, as to excoriate the part it lies upon any considerable time. This is most observable in children, or in young and very tender subjects, whose lips likewise are frequently of the colour above-mentioned, and covered on the inside with vesicles containing a thin ichor, which excoriates the angles of their mouths, and the cheeks where it touches them.

It is probable, that part of the same acrid matter passes with the nourishment into the stomach; especially in children; and it is perhaps owing to this cause in part, that they suffer much more from the distemper than adults; this corrosive fluid, without doubt, producing the same effects

on the stomach and bowels, as it does when applied to the much less sensible skin of the face; that is, it excoriates the parts it touches; which, in fact, seems to be the case: for, if they get over this stage of the disorder, a purging sometimes succeeds, attended with the symptoms of ulcerations in the bowels; and after enduring great pain and misery, perhaps some weeks, they generally at last die emaciated.

PRACTICAL OBSERVATIONS.

SECT. XX.

HOW THE PUTRID SORE-THROAT IS DISTINGUISHED
FROM THE INFLAMMATORY.

FROM the preceding account of the fore-throat attended with ulcers*, it will, I believe, appear, that this disease is widely different from a common fore-throat, or simple inflammation of any of the parts about the fauces; both as to the subject commonly affected by it, the manner of its attack, the progress of the symptoms, and its conclusion: for the fore-throat with ulcers generally attacks children; and of these, girls more frequently than boys, as has been observed. Or if adults are seized with it, they are commonly such as have been very much conversant with the sick, or else are weak and infirm: and it seems to affect those adults in the severest manner, who have been previously indisposed, or whose strength has been

* The disease here treated of is, strictly, "a Sore-throat;" since by soreness we aptly express the uneasy sensation accompanying an ulcer, and not that which attends an inflammation, which is indeed pain, but not properly soreness.

reduced by unseasonable or immoderate evacuations.

On the contrary, the common angina, or an inflammation of the tonsils, most frequently attacks the healthy, the vigorous, and robust; the weak, the delicate, and infirm, are less exposed to it, at least suffer less from it, than the former.

As both diseases are attended with a fever, and as most fevers come on with shivering, or chillness, this symptom may at least appear equivocal: but if sickness, or vomiting, or purging, or an acute pain of the head, towards the back parts or top especially, or if all these come on in the space of a very few hours, which they generally do where the disease is vehement, it may justly be esteemed to be of the putrid kind; and if with these symptoms an erysipelatous redness discovers itself in the fauces, with ulcerations or sloughs, the disease is evident.

In some cases, the symptoms have been so obscure, that it was difficult to determine to which disease they properly belonged: but in these circumstances they were commonly so favourable, that, supposing the disorder not to be of the ulcerated kind, no other inconvenience seemed likely to ensue from treating it as such, than a supuration; which is often an event rather to be chosen than avoided.

The redness of the skin in the face, neck, breast, and hands, is another obvious and distinguishing characteristic, which in children, and young people especially, seldom fails to accompany this disorder.

In the common fore-throat, a *local inflammation* is the disease; all the symptoms are derived from this source; and an acute throbbing pain, greatly increased upon swallowing even liquids, is the principal grievance. In the other, the whole habit suffers, as if by a stimulus of a peculiar nature; and although the throat is always more or less affected, yet it is sometimes the least part of the patient's complaint; and instances have occurred to me of considerable sloughs being formed, before any soreness or pain in the fauces has been mentioned.

Again, this disease is accompanied with a greater tendency to a delirium, than either a common angina, or almost any other distemper we are acquainted with. To have this symptom appear, in the disease we are treating of, on the first night, is not uncommon; and on the second, frequent. A girl about eight years of age, whom I attended, was scarce known to be indisposed, till she alarmed the family by appearing to be light-headed. She had made no complaint of her throat, nor was this part thought to be affected, till upon examination I found it so; being led to suspect it by the colour of her hands, and the delirium. She got well through the disease, though

though its progress, at first, appeared to be very swift.

A common fore-throat, if the patient recovers, either goes off by resolution, or the parts affected suppurate; or, if glandular, become hard and scirrhous.

In that attended with ulcers, none of these circumstances happen; for it terminates in a superficial ulceration of some of the parts about the fauces, if the disease is very mild, with little appearance of any floughs, and with large and deep ones, of a white cineritious, *livid* or *black* colour, if it is more violent.

PRACTICAL OBSERVATIONS.

SECT. XXI.

TREATMENT OF THE PUTRID SORE-THROAT.

DR. FOTHERGILL concludes his valuable account of the putrid fore-throat thus: “*To expel the morbid matter seems to be the design of Nature, and to promote this design, is the duty of the physician.*”

This great and benevolent character, in writing to Dr. Withering, whose method of cure in this disease was that of repeated vomits, observes:

“It is indeed to be feared, that the too early use of bark and wine, often proportioned to the alarm of the practitioner and family, has hurried many to an untimely grave. Although in the progress of this disease, these may be indicated to keep up the tone of totally enervated vessels, if I may be allowed that expression, yet in the early stage they have, and must do abundant mischief.”

I cannot refrain from observing, that a sort of fatality has attended the treatment of diseases termed Malignant; I mean the general belief, that medicines called Alexipharmic, or Cordial, are alone able to overcome malignity, in whatever
 shape

shape it may appear. Upon what principles of philosophy or chymistry those practitioners proceed, who have adopted such ideas, they best can tell: that they continue to entertain them against the evidence of the most glaring facts, besides the want of success in many instances, is what gives me most concern, and will, I doubt not, with candid minds exculpate me, not only for the strictures I have made on the present method of treating putrid fevers in general, but also for any I shall make on the usual management of the malignant fore-throat in several important particulars; and the rather, as I persuade myself they will see how much I am disposed to fall in with their ideas where they are established on solid principles, and where manifest success, as well as sound physiology, give a sanction to their utility.

If patients are treated properly from *the first*, with one or two vomits, the inflammation of the fauces is prevented from running so high, as to effuse their contents, and no sloughing appears, or if it does, it never increases. But when that inflammation is still further increased by large and frequent doses of bark, and wine often in the intervals, it is truly melancholy afterwards to witness how the tumefaction is increased, and how rapidly the whole lining of the fauces is converted into an offensive slough.

If it be urged that success has attended this practice, the fact seems to be, that in mild cases

an improper mode of treatment is not highly detrimental: it is only in the more dangerous states of the disease that we can do much good or much harm. And I am ready, says Dr. Withering, to confess, that in two or three of the first bad cases I saw, misled by so many marks of putrescency, I early gave the bark; but the consequences were not such as could justify a continuation of its use.

Upon the whole, it appears then, that the same analogous reasoning applies to this as the other morbid poisons, and the indication first to be observed is that of a vomit. This should be repeated, after which a cathartic may be advisable, and now it may become necessary to fortify the strength of the patient, so as to master the assaults of this insidious and dangerous enemy, by means of bark, wine, serpentaria, opium, and other medicines of this class.

The ulcers in the throat demand our early and constant attention, as a considerable loss of substance cannot here be suffered without immediate danger to life itself, or the most injurious consequences to the future action of the parts, if the patient survives.

Where the disease is of the mildest kind, a superficial ulceration only is observable; which may easily escape the notice of a person unacquainted with it. A thin, pale, white slough seems to accompany the next degree: a thick, opaque, or ash-coloured one is a further advance;

and if the parts have a *livid* or *black* aspect, the case is still worse. These sloughs are not formed of any foreign matter spread upon the parts affected as a crust or coat, but are real mortifications of the substance; since, whenever they come off, or are separated from the parts they cover, they leave an ulcer of a greater or less depth, as the sloughs were superficial or penetrating.

When the tendency to putrefaction is stopped, these sloughs in most cases come off spontaneously; or their separation may be promoted by suitable remedies and applications: but it seems by no means adviseable to attempt it by force, or to scrape them off with the fingers or instruments, as Severinus proposes; since the experiment has been tried, but with such unhappy consequences*,

* Si quis tamen vel digitis, vel aliquo instrumento levi ipsam (materiam albam) auferre tentasset, quamvis operatio hæc fieret absque dolore, ea tamen ablata brevissimo tempore peribant ægrotantes; quod præ cæteris in Petro Soprano genero meo observatum est, cui cum hujusmodi mortificatio apparuisset in suprema superficie dictarum glandularum faucium, et palati, ita ut videretur esse maximo respirationi et deglutationi impedimento, chirurgis existimans posse facillimo negotio a subjectis partibus eam separari solis digitis, levissime quidem eam abstulit; quæ ablata, tantum abest ut juverit deglutationem aut respirationem, ut utraque potius actio læsa magis fuerit, unde brevissimo tempore miser, meo cum maximo dolore, mortem appetiit; id quod etiam in aliis quamplurimis pueris sæpius observavi, et præsertim in ejusdem Petri filiolo nepoti ex filia, quinque annorum, mihi carissima, qui post paucos dies eodem modo, quo pater, vitam cum morte mutavit.—Cortesi. Miscel. Med. p. 697.

as are sufficient to discourage one from persisting in this method*.

In a case where I was concerned, previous to my being called in, a surgeon had endeavoured to separate the sloughs by the assistance of his probe: he succeeded in his attempt without much difficulty; but was surprised to see the same parts covered the next day with thick, dark, ash-coloured sloughs, penetrating deep into the substance.

It is true, the sloughs have been sometimes scarified, from an apprehension that matter was lodged underneath them, without any manifest inconvenience; but as there are instances of fatal mortifications having ensued, it seems most prudent to decline the practice.

From under these sloughs, and from every part of the ulcers which they cover, a thin corrosive ichor is discharged, so acrid as to excoriate the external parts upon which it is suffered to remain. This is sometimes observable in adults, when the parts above the fauces are affected; the ichor in these cases flows through the nostrils, and frequently raises pimples and small blisters on the skin of the upper lip; but it is most obvious in children, who often have this part, the corners of

* Quod si enim adhærentem adhuc crustam avellere aggrediamur, ulcerationes magis in profundum procedunt, et inflammationes consequuntur, augentur dolores, et in ulcera serpentina proficiunt.—Heredia, p. 109.

the mouth, and the cheek on which they commonly lie, blistered or excoriated.

It is probable, as has been already hinted, that part of the same virulent matter, passing down the œsophagus into the stomach and intestines, acts upon them as it does upon the skin, when applied to it externally; it frets and corrodes the parts it touches, and produces that sickness, vomiting, purging, and faintness, which sometimes accompany this disease in different parts of its progress.

In children, and very young subjects, the symptoms arising from this cause are yet more dangerous: the natural softness and laxity of the parts liable to be affected, disposes them to suffer by it much more than adults: at the same time they are commonly alike incapable of promoting the discharge of this matter themselves, and of admitting assistance from others, being generally, if the distemper is not very mild, either comatous and stupid, or delirious and untractable.

That this corrosive matter produces these effects is farther confirmed, by observing, that those whose throats are severely affected, if they have a plentiful discharge from the fauces, are seldom distressed with sickness, vomiting, or excessive faintness; though after longer sleeps than ordinary, or a neglect of encouraging this evacuation, they have complained of sickness, and have had retchings come on: and in such cases, where
there

there has been little or no discharge of this kind, the symptoms are commonly the most dangerous.

From hence it is obvious, that great advantages may be expected from the constant use of acidulous gargles; as they promote the discharge of the pituitous matter flowing to the fauces, and doubtless, with it, of some part of the corrosive fluid above-mentioned: to which if we add antiseptics and detergents, in order to check the progress of the mortification, and cleanse the fordid ulcers it produces, every indication is provided for.

Where the disease is mild, the symptoms favourable, the sloughs superficial, or scarce perceptible, it may be sufficient to order a gargle of sage-tea, with a few rose leaves added in the infusion; three or four spoonfuls of vinegar may be mixed with half a pint of the tea, and as much honey put to it as will leave it agreeably acid.

But where the symptoms are urgent, the tendency to putrefaction great, the sloughs large and thick, and the breath offensive, recourse must be had to more efficacious remedies: a composition like the following, varied only as the patient's age and the circumstances of the disease required, has in general been attended with very good effects. The proportion here given may be used for adults, and the more active parts lessened for younger subjects.

R. Decoct.

R. Decoct. Hordei, unc. 12,
 Cui inter coquendum adde rad. contrayerv.
 contuf. unc. 6.
 Liquori colato admisce acet. vin. alb. unc. 2.
 Tinct. Myr. unc. 1.
 Mei. opt. dr. 6. f. gargarisma.

That is, take of

Barley water, 12 ounces.

To which, whilst preparing, add

Contraerva root bruised, unc. 6.

To the strained liquor add,

White wine vinegar, two ounces,

Tincture of myrrh, one ounce,

Best honey, six drachms,

So as to make a gargle.

As the parts about the gullet are frequently so much affected, as to render it painful or impracticable for the sick themselves to make use of the gargle so freely as they ought, it is commonly ordered, that a few spoonfuls of this liquor, made somewhat warm, should be very often injected into the fauces with a small syringe; and especially before the patient swallows any thing, in order to wash off as much as possible the putrid fœces adhering to the ulcers, and prevent it from passing into the stomach and bowels*. In young

* The same caution was given by Heredia, and almost in the same terms.—Cujusque rei deglutitionem (præcedat excrementorum oris excretio, deterfio, ne lotione venenosa excrementa cum rebus deglutiendis ferantur ad viscera. p. 109.

subjects this method is the more necessary, as they do not always know how to manage a gargle to any purpose, did the foreness of the parts permit them to do it*.

As so much depends upon the frequent use of gargles, or rather of injections, a strict attention to this affair can scarcely be too strongly enjoined on those who have the care of the sick committed to them; since an assiduous repetition of these lotions not only promotes a discharge from the glands of the throat, which is probably of great use, but retards the progress of the ulcers, by washing off the putrefactive corroding virus, and prevents a large train of very dangerous symptoms; and has, therefore, been strenuously insisted on by several writers, especially by Mercatus†.

The following mercurial solution is strongly recommended by Mr. Townsend, upon the authority of Mr. Wathen.

R. Hydr. purif.

Hydr. muriat. aa unc. 1.

Acet. vin. distil. unc. 8.

Agita per horam totam, et post horas duas cola, colaturæ adde acet. vin. q. s. donec cum spir. cor. cerv. nihil dejecerit.

* — cum pueri nequeant gargarismatis uti, injiciantur cum fyinga. Idem, ibid.

† Cavendum est diligenter, ne sic affecti deglutiant propriam salivam, quinimo ora puerorum diligentissime sunt abluenda.—Mercat. p. 137.

That is, take of

Quicksilver,

Muriated mercury, equal parts, one ounce,

Distilled vinegar, eight ounces.

Shake these during a whole hour in a bottle.

Let it settle, and then pouring off the clear solution, add to it so much of the vinegar, until the solution ceases to precipitate a white cloud with spirits of hartshorn. It is then fit for use.

A bit of lint rolled on a probe, and made moist with this, is to be applied once a day to each ulcer.

If the sloughs are large, and cast off slowly, they may be touched with oxymel *Æruginis*, by means of an armed probe; or if the condition of the fauces is such, that this cannot conveniently be done, a spoonful of the following gargle may be injected, and retained in the throat as long as the patient can endure it; the parts may then be washed two or three times with the gargle alone.

R. Gargarism. præscript.* unc. 2.

Oxymel *Æruginis* dr. 1. m.

That is, take

Of the former gargle*, eight ounces,

Oxymel of verdegres, one drach.

Mix for a gargle.

* See p. 286.

PRACTICAL OBSERVATIONS.

SECT. XXII.

OF THE MARINE ACID IN PUTRID SORE-THROAT.

READING a pamphlet, published in 1664, by one Constantine Rhodocaracides, on the great virtues of the internal and external use of muriatic acid, I was induced from this, says Sir William Fordyce, to use it internally in all putrid fevers and malignant diseases; and this I have done with continued success ever since, especially where I found the tongue black and dry, with a black glare on the teeth, and the worst sort of sore-throat; and it has proved, in truth, wonderfully efficacious on such occasions, in checking the dyscrasy of the humours, in restoring the vital powers, that are more or less broken down according to the degree of putrefaction, and in changing the petechiæ from a purple to a brown, and still more diluted colour, till they become quite evanescent.

I might here mention, adds Sir William, a great variety of cases, to illustrate its surprising power in correcting the most putrid state of the

juices ; but shall confine myself to a few, which I hope will be sufficient.

The Earl of Bute used often to mention how sensibly he felt the salutary effects of the mel-rosæ, to which was added the spirit of sea-salt*, when applied to his tonsils by Sir William Duncan, in the year 1760, when his lordship was seized with the malignant fore-throat, when many, even adults, fell sacrifices to this disorder. This was among the first fruits of so invaluable a remedy.

When the late Earl of Morton charged me with the care of the present Lord, while a youth, labouring under the same distemper, I comforted his Lordship extremely in the hope of preserving his son, if I could have time to pickle his juices with the spirit of sea-salt; which I did very largely, and it succeeded. After this, he recommended me warmly to those of his friends who required such pickling in similar cases.

The children of Mr. Jeacock, Belton-street; Long-acre (attended by Mr. Toofey, apothecary, in that neighbourhood), were seized with all the worst symptoms of the malignant fore-throat. They were recovered in the same manner, to the amazement of the father and the apothecary.

Mr. Gallini's son had the putrid fore-throat and scarlet fever, in the most violent manner I had

* An ounce of the mel-rosæ to 16 drops of the muriatic acid.

ever seen; he was covered all over with petechiæ. He owed his recovery to the abundant use of the muriatic acid. He also lost his skin like a snake. It was stripped off his hands and fingers like gloves, which I carried home with me.

Having been requested, when it was too late, to look in on Miss Grace, of Cornhill, I found her dangerously ill of the malignant fore-throat, with petechiæ and delirium. I directed the usual medicines, as bark, Mindererus's spirit, and camphire. When I visited her next morning, a nurse and child were sitting on the bed; of which I expressed the highest disapprobation, from a fear of the child's catching the infection. When I returned, I found Miss Grace a corpse; and the child died that morning. Three female servants had taken to their beds, with symptoms of the malignant fore-throat, and innumerable petechiæ. Their tonsils and parotid glands were swelled externally to an extraordinary height, and their hands, up to the wrist, were as purple as violets. From the quantity of bad symptoms, theirs were the very worst cases of the malignant fore-throat I have ever witnessed; yet they all recovered in the course of three weeks, by pursuing the same plan. To prevent the spreading of this disease in the family, I took every possible precaution, by ventilation and fumigation with vinegar, which succeeded to my wish.

Sir William Fordyce observes generally, that in a great military hospital which he superintended during nineteen years, *not one died* of putrid fever, or putrid fore-throat, although many had these disorders in their worst form.

Sir William concludes with observing, that where there was a looseness, he generally corrected the irritating humour with whey made in the following manner :

R. Lact. vaccin. lb. $1\frac{1}{2}$.

Aquæ puræ, lb. $\frac{1}{2}$.

Simul ebulliant ; dein admisce vini Rhenani veteris, vel vini albi cujusvis Hispanici, unc. 2. succ. limonior. unc. 1. ut fiat serum.

That is, take of

Cow's milk, a pint and a half,

Water, half a pint.

Boil them, and then add of old Rhenish, or any Spanish wine, two ounces, with an ounce of lemon juice.

Or he gave lemonade, or tamarind tea, or imperiale. I never, he adds, saw the looseness treated in this manner do hurt, though the purging is commonly dreaded as the greatest scarecrow in the malignant fore-throat.

PRACTICAL OBSERVATIONS.

*SECT. XXIII.**THE MUMPS.*

THE Cynanche Parotidæa, or Mumps, is a contagious disorder, affecting only children. In this disease the fever is slight, which subsides upon the appearance of a tumour under the jaw, near its extremity, which goes on extending from the parotid to the maxillary glands, until it covers a great part of the neck, sometimes on one side only, but more commonly on both. The swelling continues to encrease until the fourth day, from which period it declines; the tumour resolves, and the little sufferer is left, in general, very well.

This disorder is so very slight, for the most part, that nothing more is required, than 20 or 30 drops of antimonial wine in a glass of water. To be repeated every five or six hours.

PRACTICAL OBSERVATIONS.

SECT. XXIV.

OF THE ORIGIN AND NATURE OF THE PUERPERAL
FEVER.

THE late Dr. Thomas Young, professor of midwifery, in the university of Edinburgh, although he printed nothing on the subject of the Puerperal Fever, wrote a very ingenious dissertation respecting it, which was read in the Philosophical Society of Edinburgh. In that dissertation, after giving a very accurate account of the symptoms of the disease, which coincides very nearly with the account given by others, he endeavours to shew, that the puerperal fever, strictly so called, is in every instance the consequence of contagion; but he contends, that the contagious matter of this disease is capable only of producing its effect, in consequence of a peculiar predisposition given by delivery and its consequences. In support of this doctrine, he remarks, that for many years the disease was altogether unknown in the lying-inward of the Royal Infirmary at Edinburgh; but that after it was once accidentally introduced into the hospital, almost every woman was in a short time

time after delivery attacked with it; although prior to her delivery, she may have lain even for weeks together, not only in the same ward with the infected, but even in the very next bed. He remarks, that it was only eradicated from the hospital in consequence of the wards being entirely emptied, thoroughly ventilated, and new painted. After these processes, puerperal females in the hospital remained as free from this disease as formerly. The puerperal fever, according to Dr. Young, has very generally a strong tendency to the typhoid type; although he allows, that in the beginning it is not unfrequently attended with inflammatory symptoms, and even with topical inflammation, particularly in the intestinal canal. On this idea, he considers the puerperal fever as admitting of the same variety of treatment with other affections depending on contagion, in which sometimes an inflammatory, sometimes a putrescent tendency prevails; such, for example, as small-pox or erysipelas. But from the prevailing putrescent tendency in this affection, he considers the free access of cool air, with the liberal use of antiseptics, as being very generally requisite.

This fever is most commonly incident to women within 48 hours after delivery, though it may supervene on the fourth or fifth day, and sometimes considerably later. It is preceded, like other fevers, by a rigour, which is commonly violent; and, when happening during the time of labour, may

may be confounded with the pains of parturiency. In its earlier stage it is attended with the signs of inflammation. A great pain is felt in the back, hips, and the region of the uterus; which, in the part last mentioned, is accompanied with the sense of heat and throbbing. The patient is frequently troubled with a tenesmus; and the urine, which is very high coloured, is discharged in small quantity and with pain. At the first attack of the fever, the woman is generally seized with a vomiting of porraceous matter, as in the cholera morbus, to which disease it then bears a strong resemblance. But instead of this symptom, there is sometimes only a nausea, or loathing at the stomach, with a disagreeable taste in the mouth. The belly swells to a considerable bulk, and becomes susceptible of painful sensations from the slightest impression. The tongue is generally dry, though sometimes moist, and covered with a thick brownish fur. At this period, if not at the very beginning of the disorder, a bilious or putrid diarrhœa, of a dangerous and obstinate nature, supervenes, and accompanies it through all its future progress; each motion to stool being preceded by a temporary increase, and followed by an alleviation of pain. Through the whole course of the fever, the patient is affected with great anxiety and dejection of spirits.

PRACTICAL OBSERVATIONS.

SECT XXV.

OF THE CURE OF THE PUERPERAL FEVER.

PHYSICIANS have been much divided respecting the proper treatment of this disease, as happens also in every other case of infection, for want of a due consideration of the laws of the animal œconomy.

The question that has been more than any agitated is that of bleeding. Dr. Leake, who published his observations on this disease, affirms that venesection is the only remedy which can give the patient a chance for life. But, though it be the principal resource to be depended upon at the beginning of the fever, he very prudently observes, that it will seldom prove of service after the second or third day; and, if directed yet later, will only weaken and exhaust the patient. At this period the blood begins to be tainted by the absorption of the purulent fluid; and the fever, from being inflammatory, is changed into a putrid nature. Dr. Denman differs much from this gentleman, and thinks we may safely affirm from experience, that for one who will be benefited by large bleed-

ing,

ing, a much greater number will be injured, and that even almost irretrievably. Nor can this seem surprising, when we consider the situation of child-bed women. Experience in this, as in all other diseases, is the only unerring guide we can follow; and whoever regulates his practice by fact and observation, will be convinced that bleeding, especially in a larger quantity, is, in general, very far from being attended with success. Bleeding is seldom proper, except in women of plethoric constitutions, and in whom signs of inflammation rise high. Nor even in such patients ought it to be repeated without great caution, and the existence of strong indications. Bleeding, when used in proper circumstances, may unquestionably palliate the fever; but that it often shortens the duration of it, appears to be a matter of much doubt. On this account the practice becomes still more suspicious and exceptionable, when we consider that by venesection improperly used, the person's strength may be so far reduced as not to support the tedious looseness by which the disease is generally carried off. Though bleeding, however, ought in general to be used with great caution, there are certainly many cases in which it is both necessary and advantageous.—Thus far Dr. Denman.

I have the more readily given this disputation, as *the abstraction of stimuli* may perhaps be better performed by evacuating the primæ viæ, probably
 . the

the first feat of this disease, as well as of other morbid poisons, than by shedding of the vital stream. On the subject of *bleeding* in contagious disorders, many high authorities have been adduced to shew its advantage; but then this must be early and plentiful, or the disorder being but partially subdued, there remains less of the *vis vitæ*, powers of life, to resist the influence of the morbid poison, and, therefore, unless strongly urged to it, I cannot but recommend great *caution* in the use of the lancet.

All authors, however, seem to be agreed, that evacuating the *primæ viæ*, is proper. For this purpose Dr. Denman uses the following recipe:

R. Antim. tartar, gr. 2.

Ocul. cancror præp. scr. 1.

Intimè misceantur. cap. gr. 2, vel 6, et
repet. p. r. n.

That is, take of

Tartarized antimony, two grains,

Prepared crabs eyes, one scruple.

Mix them. The dose is from two to six grains, to be repeated every two hours, until some sensible effect be produced.

Should the disease be abated, but not removed, (which sometimes happens), by the effect of the first dose, the same medicine must be repeated, but in a less quantity, till all danger be over. But
if

if any alarming symptoms remain, he does not hesitate one moment to repeat the powder, in the same quantity as first given; though this be seldom necessary, if the first dose operates properly.

Frequent doses of the saline draughts ought also to be given, which not only promote the evacuation by the intestines, but likewise increase the salutary discharges of urine and perspiration. These medicines are particularly serviceable in subduing the remains of the fever, after its violence has been broken by the most efficacious remedies above-mentioned; but when they are used even in the decline of the disease, gentle laxatives of rhubarb and magnesia, as advised by Dr. Denman, ought to be frequently interposed, since, as he justly observes, without stools we can do little service.

In the second stage, or period, when the pulse becomes quick and low, bark and confectio aromatica, or columbo, may be given with great advantage.

PRACTICAL OBSERVATIONS.

SECT. XXVI.**OF THE CHICKEN-POX.**

THIS is among the number of animal poisons producing a disease, which is attended with so little danger, that it would not merit any notice, if it were not apt to be confounded with the small-pox, and thus give occasion to an opinion that a person might have the small-pox twice in his life; or it is apt to deceive into a false security those who have never had the small-pox, and make them believe that they are safe when in reality they are not. This eruption breaks out in many, according to Dr. Heberden, without any illness or previous sign; in others it is preceded by a little degree of chillness, lassitude, cough, broken sleep, wandering pains, loss of appetite, and feverish state for three days.

In some patients the chicken-pox make their appearance on the back; but this perhaps is not constant. Most of them are of the common size of the small-pox, but some are less. Dr. Heberden never saw them confluent, nor very numerous.

The

The greatest number was about 12 in the face, and 200 over the rest of the body.

On the first day of the eruption they are reddish. On the second day there is at the top of most of them a very small bladder, about the size of a millet-feed. This is sometimes full of a watery and colourless, sometimes of a yellowish liquor, contained between the cuticle and skin. On the second, or, at the farthest, on the third day from the beginning of the eruption, as many of these pocks as are not broken seem arrived at their full maturity; and those which are fullest of that yellow liquor very much resemble what the genuine small-pox are on the fifth or sixth day, especially where there happens to be a larger space than ordinary occupied by the extravasated serum. It happens to most of them, either on the first day that this little bladder arises, or on the day after, that its tender cuticle is burst by the accidental rubbing of the clothes, or by the patient's hands to allay the itching which attends this eruption. A thin scab is then formed at the top of the pock, and the swelling of the other part abates, without its ever being turned into pus, as it is in the small-pox. Some few escape being burst; and the little drop of liquor contained in the vesicle at the top of them, grows yellow, thick, and dries into a scab. On the fifth day of the eruption they are almost all dried and covered with a slight crust. The inflammation of these pocks is very
small,

small, and the contents of them do not seem to be owing to suppuration, as in the small-pox, but rather to what is extravasated under the cuticle by the serous vessels of the skin, as in a common blister. No wonder, therefore, that this liquor appears so soon as on the second day; and that, upon the cuticle being broken, it is presently succeeded by a slight scab: hence too, as the true skin is so little affected, no mark or scar is likely to be left, unless in one or two pocks, where, either by being accidentally much fretted, or by some extraordinary sharpness of the contents, a little ulcer is formed in the skin.

The principal marks by which the chicken-pox may be distinguished from the small-pox are,

The appearance, on the second or third day from the eruption, of that vesicle full of serum upon the top of the pock.

The crust, which covers the pocks on the fifth day; at which time those of the small-pox are not at the height of their suppuration.

Morton speaks of the chicken-pox as if he supposed it to be a very mild genuine small-pox. But these two distempers are surely totally different from one another, not only on account of their different appearances above-mentioned, but because those who have had the small-pox are capable of being infected with the chicken-pox; but those who have once had the chicken-pox are not capable of having it again, though to such as have never had this distemper,

distemper, it seems as infectious as the small-pox. Dr. Heberden wetted a thread in the most concocted pus-like liquor of the chicken-pox which he could find ; and after making a slight incision, it was confined upon the arm of one who had formerly had it ; the little wound healed up immediately, and shewed no signs of any infection.

Remedies are not likely to be much wanted in a disease attended with hardly any inconvenience, and which in so short a time is certainly cured of itself. Nevertheless a few drops of antimonial wine given, so as to produce perspiration more speedily and certainly, extinguishes this mildest of all the animal poisons

PRACTICAL OBSERVATIONS.

SECT. XXVII.

THE ITCH.

THE uses of insects have employed the pens of many able writers; subjects which relate to the convenience or elegancies of life are pursued with pleasure: the natural history of silk and wax, that of lac, kermes, the cochineal employed in dying, the cantharides and millepedes in medicine, has for that reason been very assiduously investigated. It is certain that the intention of the great Architect of the Universe was not confined to our apparent utility alone in their creation; but that by their assistance the earth should be purified from dead animals and putrefaction, and a proper proportion and natural equilibrium kept up in the numbers of vegetables; further ends were also to be answered by them; Providence uses them as ministers to repress the arrogance of mankind, to rouse them from their insensibility, to sharpen and excite their diligence, or impress a conviction upon them of their infirmity and weakness. The consideration of the noxious qualities of insects will convince us fully of this.

The *Acarus ricini* * sometimes surrounds us in

* Dog-tick.

great numbers: if we sit down near them, we become totally covered with them and experience their rage. The fox-coloured and red-ant will hinder our resting upon a bed of roses with their pungent sting and the venom they infuse with them. The *Forficula auricularia* * sometimes endeavours to get into the ear, and unless prevented, brings on a head-ache which terminates in death. The *Cimex lectularius* † is now a very common evil in Europe: it fills our houses, tapestry, and beds, it bites those who are asleep, and allows those who are waking no respite: its smell is insufferable. The *Conops calcitrans* likewise enters our houses before rain, with its sharp proboscis piercing our legs like an awl.

Many species of the *Tabanus* ‡ pester us when abroad, especially against a shower. The *Culex pipiens* § with his unceasing buzz and sharp bite disturbs our morning and evening sleep: near water, in summer, this species of insect is a perpetual calamity of the most serious kind; the gnats swarm so there that they dare not expose their faces and hands to the air, unless they be covered with pitch. The *Culex pulicaris* hovering in the evening in great swarms are extremely troublesome; their feet exciting a disagreeable itching upon the skin, and their bite an

* Earwig.

‡ The breeze fly.

† Bug.

§ The common gnat.

inflam-

inflammation, particularly in Norway. The hornet and wasp attack us with their stings, in woods and our own houses, where we might expect repose.

The *Pulex Irritans**, in the months of July and August, by its multiplication, becomes an intolerable plague in our houses.

The *Acari* sirones † ingratiate themselves under the cuticle of man, ulcerating and covering it with a leprous eruption from head to foot; the irritation it produces is so intolerable, that they cannot refrain scratching themselves violently, from whence arise ulcers and the most intolerable pains.

Many have fancied that we shall find in some of the species of the *Acari* ‡ yet undiscovered, the cause of many cutaneous disorders, as the herpes, serpigo, elephantiasis, and tinea. I entertain, says Baeckner, no very great doubt, although I propose it only as a probable conjecture, that the dysentery, the venereal distemper, the small pox, spotted fever, plague, and all those other distempers which are called contagious, producing exanthemata, and make such havoc in the human species, are derived from different species of the acari.

* Common flea.

† Also called ulcerating tick, or mite. Its body is oval; head small and pointed; colour whitish; two dusky semicircular lines on the back; long retainous legs, two short.

‡ Tick.

PRACTICAL OBSERVATIONS.

SECT. XXVIII.

METHOD OF CURING THE ITCH.

THIS filthy disease is readily cured by mercurial ointment, by sulphur, and by the vitriolic acid. In the country we frequently apply a quicksilver girdle without the least apprehension of any evil consequence, or in case of timidity in the patient, we cause him to be anointed with brimstone and hog's-lard.

The following is a very efficacious ointment:

Flor. sulph. lot, unc. 1.

Rad. helleb. alb. dr. 2.

Azung, unc. 2.

Esent. citri, scr. 1.

F. unguent vespere utend.

That is, take of

Flowers of sulphur, an ounce,

White hellebore-root, two drachms,

Hog's lard, two ounces,

Essence of lemon, one scruple.

Mix for an ointment to be employed at bed time.

In cities, where the smell of sulphur would disgust, it is more common to adopt the following:

R Acid. Vitriol. gtt. 50.
 Aq. Rosar. gtt. 20.
 Axung. Porcin. unc. 1.
 Effent. Citri. gtt. 15.
 M. f. Liniment. m. et v. utend.

That is,

Hog's lard, one ounce,
 Vitriolic acid, fifty drops,
 Rose water, twenty drops,
 Effence of lemon, fifteen drops.

Make an ointment to be used morning and evening.

The patient may likewise wash two or three times a day with elder-flower water, acidulated with vitriolic acid, thirty drops to a wine glass.

This plan of cure by vitriolic acid may be forwarded by an electuary of nitre one drachm, with six drachms of sulphur mixed up in honey, of which the patient may take the size of a nutmeg three times a day.

Bathing in Harrowgate water very speedily effects a cure.

PRACTICAL OBSERVATIONS.

SECT. XXIX.

OF THE VENEREAL POISON.

ONE of the most dreadful of our * diseases, that scourge, with which in this life offended Heaven chastens the indulgence of criminal desire, appears to have its original from the Americans. By this retaliation on their conquerors, they have not only amply avenged their own wrongs, but have also perhaps more than counterbalanced all the benefits which Europe has derived from the discovery of the New World. Astonishment and terror accompanied this unknown affliction in its progress, and men began to dread the extinction of the human race by such a hard visitation. The disease at first was supposed to be propagated by the breath, and those affected with this dreadful distemper were exiled from Paris by an edict of the king. Its true nature, however, soon became better understood, and the enemy by his frequent visits appeared less formidable, and the power of art was found at length able to overcome this Proteus-monster.

* Some poisons seem peculiarly to affect man, for brutes have no hooping-cough, measles, small pox, nor has inoculation of the venereal poison been found to have the least effect upon them.

Delicacy would have prevented me even mentioning the venereal poison ; but when I consider that it belongs to a class of poisons whose action is slow and deceiving—when I see the country people, once so blooming and robust, the proper stock for supporting the race of men, through the more frequent connection with the city, from the greater facility of travelling—when I see them very generally eat up by this most loathsome of all the poisons, the bones of the nose and palate rotted, the beauty of face and speech destroyed, the body covered with copper coloured ulcers, the period of rest rendered to them the time of insufferable torment from pains along the shin-bones, and finally in the forehead—when I see fine youths, the darlings of their parents, the hopes of their country, thus severely smarting perhaps for the folly of one unguarded moment—when I see it also sometimes insinuate itself privately into the circle of domestic felicity, and the virtuous wife a prey to a poison she does not understand, and extending its influence at the same time to the innocent offspring, I cannot refrain shewing the means of diminishing so growing an evil*.

It has long been my opinion, says the benevolent Dr, Buchan, that much of the mischief occasioned

* I might have also produced here the apology of Sydenham. “ I have met,” says this illustrious physician, “ with several, who either with a good intent, in order to deter the incontinent

sioned by the venereal disease might be prevented, and that whoever effects this purpose will be a great benefactor to society. This important point can only be accomplished by endeavouring to advance the morals of the people, and when the disorder is obtained, to point out the danger and the means by which its bad consequences may in general be obviated.

An attention to health, which ought to be a primary object in the education of children, is seldom considered as even a secondary one; while trifling accomplishments, of little importance in the pursuits of life, generally engross the attention both of father, son, master, and scholar.

Young men are prodigal of life. They throw it wantonly away at the very time it is most worth preserving, nor do they know the value of health till it is lost. Many a painful hour might be prevented by a few cautions duly impressed on

ment from their vicious practices, by the apprehension of the succeeding punishment, or to acquire the character of chaste persons, have not scrupled to assert that the cure of the venereal disease ought to be kept secret. But I cannot be of their opinion, because I conceive that there would be very little room left for charity, unless the misfortunes which the inconsiderate bring upon themselves by their own fault were to be alleviated with humanity and tenderness. It belongs to God to punish the offence, but it is our duty to assist the distressed, and relieve the diseased to the best of our power, and not to make too strict an enquiry into the cause of the evil, and irritate them by our censures. For this reason, therefore, I will deliver what I have observed and experienced in this disease; not that I intend to make men's minds more vicious, but to cure their bodies, which is my province."

the young mind. Early impressions are seldom eradicated. They generally form the conduct, and become the rules of life. Were a young man taught to believe that the paths of pleasure lead to destruction ; that if he pursues them, he will never arrive at mature age, but fall the early victim of loathsome disease, he would learn to consider pleasure as his greatest enemy. The genuine consequences of vice need only to be painted in their true colours, in order to make it an object of horror to the youthful mind.

As example has more influence than precept, it might be of use to young men were they occasionally taken to places where the unhappy sufferers, under the venereal disease, are congregated. They would there see the wretched condition to which thoughtless youth may be reduced by the act of one unguarded moment. I have known the first mistake made by a young man, in this way, cost him his life ; and have seen others, who, from a single unhappy connection, were rendered incapable ever after of enjoying connubial happiness.

Though parents, tutors, and guardians, were to use every endeavour to keep youth from the snares laid for them by bad women, yet, owing to the want of police in most great cities, they would find their efforts equally frustrated. It is there the corruption of youth is almost unavoidable,

able, and their destruction, alas! is but too often the consequence.

Much might be done towards lessening the ravages of this baneful malady by the exertions of the public magistrate. But to effect this purpose would require more skill and attention than few magistrates would wish to encounter. Improper interference in these matters does mischief, and to put bad women under proper regulations would require the most consummate wisdom. This, however, is no reason why lewd women should be suffered to prowl about in the public streets without the least restraint.

Were men to be seen at the corner of every street in a great city, armed with swords and bludgeons, to put every one in fear of his life, who would not comply with their demands: the public mind would be quickly roused, and proper measures taken to suppress them; yet the danger is nearly equal from those unhappy females who lie in wait to ensnare the unwary youth as he passes along. The young man must have uncommon resolution indeed who can always resist these temptations; yet, by yielding in a single instance, he may be undone. One step leads on to another, till the unhappy youth, immured in vice, finds it impossible to retreat. It signifies very little if a man is robbed of his health or property, whether it is done under the influence of fear or lust.

Even

Even the delicacy of modest women is hurt by the number of common prostitutes which they daily see plying in the open streets, and their example must have an unfavourable influence on the younger part of the sex.

Were it my province here to dip into affairs of police, I should think it an easy matter to suggest a plan by which the public streets of great cities might be freed from those women who by night and by *day* infest them, without laying any unnecessary or improper restraints on the liberty of the subject.

But the grand corrector of this evil are suitable laws against *seduction*, which leads to all the after-misery attendant upon a life of pleasure, or rather of misery, as it should be more justly called, such as is well described in the following song :

IN a cottage embosom'd within a deep shade,
 Like a rose in a desert, oh! view the meek maid,
 Her aspect all sweetness, all plaintive her eye,
 And a bosom for which e'en a monarch might sigh;
 Then in neat Sunday gown see her met by the
 squire,
 All attraction her countenance, his all desire;
 He accosts her, she blushes, he flatters, she smiles,
 And soon blue-eyed Mary's seduc'd by his wiles.

Now

Now with drops of contrition her pillow's wet o'er,
 But the fleece when once stain'd can know white-
 nefs no more ;

The aged folks whisper, the maidens look shy ;
 To town the squire presses, how can she deny ?
 There, behold her in lodgings, she dresses all gay,
 Vauxhall she attends, or always goes to the play,
 Learns to squander, they quarrel, his love turns to
 hate,

And soon blue-eyed Mary is left to her fate.

Still of beauty possess'd, and not yet void of shame,
 With a heart that recoils at the prostitute's name,
 She tries for a service, her character's gone,
 And for skill at her needle, alas! 'tis unknown ;
 Pale want now approaches, the pawnbroker's near,
 And her trinkets and clothes, one by one disap-
 pear ;

Till at length sorely pinch'd and quite desperate
 grown,

The poor blue-eyed Mary is forc'd on the town.

In a brothel next see her trick'd out to allure,
 And all ages, all humours compell'd to endure ;
 Compell'd, though disgusted, to wheedle and
 feign,

With an aspect all smiles, and a bosom all pain ;

Now

Now caressed, now insulted, now flattered, now
scorn'd,

And by ruffians and drunkards oft wantonly
spurn'd,

This worst of all misery she's doom'd to endure,
For the poor blue-eyed Mary is now an impure.

Whilst thus the barb'd arrow sinks deep in her
soul,

She flies for relief to that traitor the bowl;
Grows stupid and bloated, and lost to all shame,
Whilst a dreadful disease is pervading her frame;
Now with eyes dim and languid the once bloom-
ing maid,

In a garret on straw faint and helpless is laid!
Oh! mark her pale cheek, see, she scarce takes
her breath,

And lo! her blue eyes are now seal'd up in death!

Or, as is also well-described in the following

ELEGY.

WEEP o'er the mis'ries of a wretched maid,
Who sacrific'd to man her health and fame;
Whose love, and truth, and trust, were all repaid
By want and woe, disease and endless shame.

Curse not the poor lost wretch, who ev'ry ill
That proud unfeeling man can heap, sustains;
Sure she enough is curst, o'er whom his will,
Inflam'd by brutal passion, boundless reigns.

Spurn

Spurn not my fainting body from your door,
 Here let me rest my weary weeping head;
 No greater mercy would my wants implore;
 My sorrows soon shall lay me with the dead.

Who now beholds but loaths my faded face,
 So wan and fallow, chang'd with sin and care?
 Or who can any former beauty trace
 In eyes so sunk with famine and despair?

That I was virtuous once, and beauteous too,
 And free from envious tongues my spotless fame;
 These but torment, these but my tears renew,
 These aggravate my present guilt and shame.

Expell'd by all, enforc'd by pining want,
 I've wept and wander'd many a midnight hour;
 Implor'd a pittance Lust would seldom grant,
 Or sought a shelter from the driving show'r.

Oft as I rov'd, while beat the wintry storm,
 Unknowing what to seek, or where to stray,
 To gain relief, entic'd each manly form,
 Each hideous form contemptuous turned away.

Where were my virgin honours, virgin charms?
 Oh! whither fled the pride I once maintain'd?
 Or where the youths that woo'd me to their arms?
 Or where the triumphs which my beauty gain'd?

Ah!

Ah! say, insidious Damon! Monster! where?

What glory hast thou gain'd by my defeat?

Behold the miseries I am doom'd to bear,

Such as have brought me to my winding-sheet.

The law of the land for *seduction* is a penalty of money to be levied by the father for the supposed incapacity of the daughter to earn her livelihood, and such a law may be instantly seen to be but the chicanery of law, a mere subterfuge. Nothing short of imprisonment in solitary cells will ever restrain so licentious a passion as that of lust.

The confinement of the woman should be short, but still she should be so punished. That of the man should be longer. Or if the he-wretch was to be pilloried*, there would be fewer seducers, and he merits it as much as those she-devils who are ever prowling about seeking whom they may devour.

When a woman has had her fling of debauchery (See the Life of Ann Bellamy), she then sets

* How ridiculous then would the seducer appear, and the boast of gallantry would no longer be his unfeeling sport. At present, owing to the punishment both for seduction and adultery being money, little or no disgrace is attached to either, and plans are hourly laid to make this the object of extortion, so easy is it for a nation to be corrupted by *bad laws*.—To encourage an innocent gratification of a proper and useful passion, every batchelor should pay, besides taxes, an *income tax* in proportion to his gains. This would prevent celibacy, and the worst vices. A heavy tax should be laid on those who have unmarried people of a certain age as servants.

up a regular traffic of sacrificing innocence to the shrine of gold. She even in different directions has her infants at school, and before they know a passion, carry the iniquitous *rich* old man to see her nieces, as she stiles them, and before they are ripe, the virgins are deflowered by this villain. They are then brought forward to be the common sport of the world, false debts are contracted with the old Jezebel, and when sickness has eat away the rose of health, and the object of desire has become but little attractive, the poor wretches are turned adrift to seek a worse fortune in the streets. They there hire clothes for the night at an exorbitant price—pay, to use the vulgar expression, through the nose for every thing, and soon after become almost naked patients of some hospital*, or perish unpitied and for want.

With regard to the second point, I will affirm, that a timely flying to the assistance of remedies will obviate the greater part of the evil, nor need there be any interference of the practitioner, if remedies be seasonably applied.

* Even heavier afflictions than are right await them in this asylum of misery. Dr. Sangrado's practice is that of an hospital, so many frictions of mercurial ointment without reference to age or constitution, is the *rule*, and all are put down into one general salivation.

PRACTICAL OBSERVATIONS.

SECT. XXX.

CONSIDERATION OF THE QUESTION, WHETHER
GONORRHŒA AND LUES VENERA ORIGINATE
FROM THE SAME CONTAGION.

AN opinion has been generally received among practitioners, that gonorrhœa virulenta and lues venerea are of the same nature, that they originate from the same contagion, and are only distinguished by the circumstance of gonorrhœa being a local disease, while the other is a general affection of the system. But as there is cause to imagine that these diseases arise from different specific contagions, and as the establishing of one or other of these opinions must undoubtedly influence the conduct of the cure, it becomes a matter of importance to institute an enquiry into this part of our subject.

Both diseases are contracted in a similar way; both, in the first instance, affect the same organs; and they occasionally appear at the same time in the same patient: hence it has been concluded, that they have a common origin, and one method of cure has been supposed applicable to both.

The refusal of some patients to submit to the distress and inconveniency, the frequent result of a

protracted mercurial course, and who nevertheless recovered from the usual symptoms of gonorrhœa, first suggested a doubt of the two diseases being of a similar nature. It is well known that lues venerea can be certainly cured by mercury only; and the opinion respecting the existence of a specific contagion of gonorrhœa, arising from this obvious and marked difference in the method of cure, appears to be fixed and established by the following facts.

The symptoms and consequences of gonorrhœa are perfectly different from those which take place in lues venerea. Both diseases have appeared, at different periods, in the same countries; and, in some instances, they have remained distinct and uncombined for a great length of time.

That the symptoms of the two diseases are different is universally known. A particular detail of such as are peculiar to each will be given in the ensuing sections. At present, it is only necessary to observe, that gonorrhœa consists of a discharge of puriform matter from the urethra; which, even by those who support a contrary opinion, is now admitted to be, in almost every instance, a *local affection*, and that it very rarely contaminates the general habit of body: while lues venerea is a disease of the constitution, arising from the absorption of venereal virus from any part of the surface of the body, but most frequently from those only covered with cuticle; by which are produced buboes, ulcers in various

parts,

parts, particularly in the throat, pains and swellings in the bones, with a variety of other symptoms which it is not at present necessary to enumerate.

The first appearance of the lues venerea is, for the most part, in the form of a chancre or small ulcer, just as a pustule of the small-pox. It is universally admitted, that even the slightest affection of this nature is apt to produce the pox, or a general affection of the system; insomuch, that no practitioner of experience will trust the cure of this symptom to local remedies. If the sore be left to itself, it almost always becomes worse. The matter which it affords is taken up by the absorbents; and buboes, with the other symptoms mentioned above, very certainly ensue. These are almost the universal consequences of a sore produced by the venereal virus; but they also occur frequently where the skin remains sound and entire; that is, absorption of the venereal poison often takes place where no vestige of ulceration is perceptible. This, indeed, is denied by many, but I have met with various instances of it, and it will be admitted by every practitioner of experience. Now, this being established, in the application of the venereal virus to every other part of the body, if the matter of gonorrhœa were of the same nature, why does it not, in almost every instance, enter the system, and produce pox? So far as we know, the urethra is as plentifully supplied with absorbents as

other parts of the body; the same kind of matter, when applied to them here, ought therefore to be productive of similar effects: and hence lues venerea ought frequently, perhaps in every instance, to be the consequence of gonorrhœa, were the matter by which the two diseases are produced the same.

As this is a strong argument in favour of the two diseases proceeding from different kinds of contagion, much ingenuity has been exerted by those who support the contrary opinion, in endeavouring to account for it.

In the first place, it has been said, that gonorrhœa sometimes terminates in pox, and therefore, that this of itself is a sufficient proof of the two affections being of the same nature.

Were it certain that this ever happened, no farther evidence would be required, as a few well-marked instances would be conclusive; but every unprejudiced practitioner will admit, that no sufficient proofs of it have ever occurred.

In order to support this opinion, data must be received, which we know to be inadmissible. We must admit, that a person with chancres only, communicates to another, not only every symptom of pox, but of gonorrhœa, and that another with gonorrhœa only gives to all with whom he may have connection, chancres with their various consequences. This ought, indeed, to be a very
common

common occurrence, infomuch that every practitioner should be able to decide upon it with certainty, if this opinion was well-founded; instead of which, it will be admitted by all that the one disease being produced by the other is even, in appearance, a very rare occurrence. I have paid much attention to the point in question; and in almost every instance, and where the most particular enquiries were made, it has proved, from enquiry, that a person infected with gonorrhœa has received it from another evidently labouring under that disease, and that chancres have been communicated by such as were distressed with chancres only.

This, I am convinced, will be very commonly found to be clearly the case, so that a few instances, bearing some appearances of the contrary, are much more readily explained on the idea of the two diseases being produced by different kinds of contagion; and this may also be said of the few solitary cases that may be met with of chancre being supposed to terminate in gonorrhœa, and gonorrhœa in chancre, and other symptoms of pox. We can more easily perceive that the same person should, in some instances, receive, and therefore be able to communicate both kinds of contagion, than that the incident we are considering should be so seldom met with, were the

the opinion well founded. of the two diseases being originally of the same nature.

However ill founded an established opinion may be, if it has received the sanction of being generally adopted, we know how difficult it is to overturn it. There are few who enter so minutely into the consideration of such points as to be able to decide upon them, and of those who do, there are very few who will take the trouble of engaging in such discussions as are necessary for the conviction of others. This may be considered as the chief cause of the point in question remaining so long in obscurity, as well as of the explanation hitherto usually given of various circumstances in gonorrhœa and lues venerea having been uniformly made to support it. It will also serve to account for circumstances being held forth as matter of fact, which, on enquiry, are perceived to be ill-founded; for, when once an opinion is admitted, we are apt to give such an explanation of whatever may seem to relate to it, as can in any way tend to support it

Thus, although few in the present age will assert that gonorrhœa often terminates in lues venerea, yet by many we are told, that it is very apt to do so when it is improperly treated. Whatever puts a sudden stop to a severe or copious discharge from the urethra, is by many supposed to do harm. Hence all who condemn the use of
injections

injections in gonorrhœa affirm, that they often convert a simple clap into a pox, by throwing into the blood what otherwise would have been carried off. This, however, is by no means supported by experience. A very stimulating injection will no doubt excite pain and inflammation in the urethra ; and this, in some instances, will be productive of swelled testes, and perhaps of sympathetic swellings in the glands of the groin, but I have not known a single instance of pox induced in this manner ; and as I have long been in the daily use of injections, many cases of it must have occurred, if the idea I have just stated were well founded. Till of late, indeed, a patient who was so unfortunate as to have a clap suddenly stopped, was so certainly considered as poxed that he was immediately put under a very complete course of mercury, by which he was made to undergo a very unnecessary and distressful confinement.

Although this practice, however, is now very commonly exploded, yet there are some who still adhere to it. I was called, in April 1784, to visit a gentleman, who in a gonorrhœa, attended with a good deal of inflammation, had been so foolish as to live freely, and to ride much on horseback. This, with the unguarded use of a very stimulating injection, put a sudden stop to the discharge, and at the same time it excited a very considerable degree of pain and inflammation

along

along all the posterior part of the urethra, towards the prostate gland and neck of the bladder, attended with a painful and frequent desire to make water.

On the idea of these being symptoms of pox, he was immediately put under a course of mercury; and when I first saw him, he had been using it for the space of six weeks. The surgeon in attendance acknowledged, adds Mr. Bell, that no advantage had been derived from it; and the patient himself said, that his distress was daily increasing; they were both, therefore, easily persuaded to lay the mercury aside, and by the repeated application of leeches to the perineum, of fomentations, and opiates, to allay the pain, the inflammation soon began to subside, and in a short time he was perfectly well.

In December 1788, a young man called upon me, with a painful hard swelling in his groin, of an oblong form, nearly an inch in diameter, and reaching from the ring in the external oblique muscle down to the top of the testis. It appeared suddenly about four months before, and seemed to be the consequence of a clap being too hastily stopped. He was at first attacked with severe pain at the neck of the bladder, which stretched to the groin, and down to the testis of the same side. This, together with a constant and painful inclination to void urine, rendered his life miserable. Nor was his distress in any degree abated

abated by a course of mercury which he was immediately put under. On the contrary, the swelling which at first was not thicker than a common quill, was now very considerable. My idea of the swelling was, that at first it had been merely an inflammatory affection of the vas deferens, which by degrees had spread to the rest of the spermatic cord; but, what was unusual, it had never affected either the testis or epididemis. As a considerable quantity of mercury had been taken, and as, instead of proving useful, it had rather appeared to do harm, the surgeon whom he employed was easily persuaded to trust the cure to other remedies. Local blood-letting with leeches was frequently repeated, both in the perineum and groin. The parts were regularly fomented with a solution of saccharum saturni. His bowels were kept easy with gentle laxatives, and he was put upon a mild diet of milk and vegetables. In a few days the pain abated, and the tumour gradually lessened, till at last, in the course of five or six weeks, it was entirely gone.

In the course of last winter, I attended two different patients, with alarming symptoms about the neck of the bladder, evidently induced by the improper management of gonorrhœa. The parts in both were not merely pained, but considerably swelled; and, at the same time, almost a total suppression of urine took place. Although
in

in both the discharge from the urethra had been suddenly stopped, I did not advise mercury. The patients being both plethoric, were plentifully bled, first at the arm, and afterwards repeatedly with leeches in the perineum. This, with fomentations, and opiates to allay the violence of the pain, assisted by a cooling regimen and gentle laxatives, very soon completed the cures.

These instances are given out of a great number that might be adduced, merely to shew that the symptoms which supervene on the sudden stoppage of a clap are local, and not connected with any affection of the constitution, which they necessarily would be if they were of the same nature with lues venerea.

It will perhaps be said, that although this may have happened in a few cases, yet that in others there has been cause to suspect that lues venerea has been the consequence of a clap disappearing in this manner. In answer to this, it is sufficient for me to shew, that this is at least a rare occurrence, as I think I am entitled to do, from my never having met with an instance of it. It has been supposed, that the sudden check given to the discharge in cases of clap, must necessarily throw the matter into the blood, and that pox must accordingly ensue from it. Were the matter of the two diseases the same, this would happen in every instance, so that when we can show that it seldom happens even in appearance, we
are

are entitled, from this argument alone, to conclude that they are produced by two different kinds of contagion; and, where pox has appeared at the sudden termination of gonorrhœa, that the two kinds of infection had either been communicated together, or, what may more frequently perhaps be the case, the patient will be found to have received the pocky contagion by communication with a diseased woman at the very time he laboured under gonorrhœa. I have already remarked, that lues venerea is sometimes produced by absorption, while the skin remains entire, and where no chancre or excoriation is perceptible; there is therefore much cause to imagine, that in long continued cases of gonorrhœa many may be infected with lues venerea by communication with others labouring under it; and as this may happen without any external mark of it taking place, it is not surprizing that some fallacy should arise from this circumstance.

The abettors of the opinion, that the matter of the two diseases are the same, admit that gonorrhœa very seldom terminates in pox*. And they attempt to account for this, that is, for the
two

* This is even granted by one who keenly supports the opposite doctrine in every other point. In speaking of gonorrhœa and chancre not terminating so frequently as might be expected in the production of each other, he says, "Although it does not often happen, yet it sometimes does, *at least there is great reason to believe so.* I have seen cases where a gonorrhœa
came

two diseases not being produced more frequently by the application of the same matter, by saying, that this depends upon the difference of parts to which the matter is applied.

They divide the different surfaces of the body chiefly into two kinds, what they term *secreting surfaces* and *non-secreting surfaces*. By the first they mean all the passages for extraneous matter, including also the ducts of glands, such as the mouth, nose, eyes, ears, and urethra, and by *non-secreting surfaces*, the external skin in general. To which they add a third kind of surface, leading from the one to the other, as the glans penis, prolabium of the mouth, the inside of the lips, and the female pudendum; which surfaces, partaking of the properties of each of the others, but in a less

came on, and in a few days after in some, in others as many weeks, a chancre has appeared; and I have also seen cases where a chancre has come first, and in the course of its cure a running and pain in making water have succeeded." V. Treatise on the Venereal Disease, by John Hunter, page 16.

This is what every practitioner has seen; but by admitting so clearly that it is a very rare occurrence, Mr. Hunter tends rather to strengthen the contrary opinion; for, were the two diseases produced by the same kind of matter, the one would clearly and necessarily *often* terminate in the other. In the few cases which Mr. Hunter, in the course of extensive practice, has met with, there is more cause to imagine either that the two diseases were communicated at once, or that the one was given while the patient laboured under the other, than that nature should deviate so much from her ordinary course as to produce them in a few instances so very differently from what obviously happens in the course of general observation.

degree,

degree, are capable of being affected both ways, sometimes by being excited to secretion, and at other times to ulceration*.

Upon this their theory or opinion of the point in question, is attempted to be established: when the contagion, either of gonorrhœa or pox, and which they consider to be the same, is applied to any part of the external skin, particularly to the glans, where the skin is very thin, chancre, or ulceration, they observe, will most readily ensue, as these are *not secreting surfaces*; while the same kind of matter applied to the urethra must necessarily excite gonorrhœa, from this being a secreting surface, and therefore not so easily affected with ulceration as with irritation, by which an increased discharge, attended with some change in the mucus of the part, must accordingly be produced.

This idea, however, is more ingenious than solid. It might answer the purpose of giving a specious appearance to an ill-founded opinion, but it will not stand the test of enquiry.

In the first place, on the supposition of the matter of gonorrhœa and lues venerea being the same, the latter ought to be a much more frequent occurrence than the former, from the greater ease with which the matter of infection must, in every instance, be applied to those parts

* Vide John Hunter on the Venereal Disease.

on which it can produce chancres than to the urethra, where, instead of chancre or ulceration, it almost always excites gonorrhœa. It is difficult to conceive how the matter by which the disease is communicated should find access to the urethra; while, on the contrary, all the external parts, particularly the glans, must be easily and universally exposed to it; and yet gonorrhœa is a much more frequent disease than pox. Cases of gonorrhœa are in proportion to those of chancre and pox, so far as my observation goes, of about three to one; while it is obvious, that the very reverse should happen if the two diseases were produced by the same kind of matter*.

Again, were this the case, should we not find gonorrhœa in almost every instance terminating in pox, and chancre in gonorrhœa; for every one knows, that in gonorrhœa the matter is at all times passing from the urethra over the glans and prepuce; and in chancre, that it is passing from the glans into the entrance of the urethra. It happens indeed, in a few instances (Mr. Hunter, we see, has met with some cases of it) that

* Mr. Hunter supposes, that the proportion the cases of gonorrhœa bear to those of chancre, is as four or five to one. Vide Treatise on the Venereal Disease, p. 217. This is surely a weighty argument against the opinion he endeavours to support, of gonorrhœa and chancre proceeding from the same contagion.

the one disease supervenes upon the other: but we have also seen that these are rare occurrences, and where they have not been communicated by subsequent connection with an infected person, that the two diseases have probably been given at one and the same time. It is no argument against this suggestion to say, that instances have been met with of a gonorrhœa appearing during the continuance of chancres of several weeks duration, and *vice versa*; for every practitioner must have met with instances of these diseases both appearing at the distance of two or three months from any exposure to infection.

I have at this moment a gentleman under cure, for a deep foul chancre, altogether within the urethra. It was of several weeks duration before I saw it, and yet no gonorrhœa took place. He is now getting well by a complete course of mercury.

I have met with various cases of this, as every practitioner must have done; and, so lately as the month of April last, I was called to a gentleman with a painful chancre on each side of the urethra. The fore extended about the eighth part of an inch up the passage; and the parts being much inflamed, I hesitated to apply caustic. This rendered the cure tedious, but still no gonorrhœa took place. At last, after having taken a considerable quantity of mercury, and when the chan-

cres

eres were looking clean, and in a healing state, he was seized with all the symptoms of a severe clap, with heat in making water, and a plentiful discharge of a thin green matter. This, however, bore all the appearance of a recent infection. I at once said so to my patient, and he candidly acknowledged that he had imprudently exposed himself, by having connection with a girl of the town three or four days previous to the accession of these symptoms.

We may also remark, that the discharge from gonorrhœa frequently becomes so acrid as to excoriate the glands and preputium, and even to excite a very plentiful formation of matter, but every one knows that this is materially different from chancre. It is altogether different in appearance, and so materially different in its effects, that scarcely any practitioner of experience will trust the cure of chancre to any thing but mercury, while in the other, mercury, I imagine, is very seldom employed. However extensive the excoriations may be, they are easily removed by local remedies, and I have never known an instance of pox succeeding to this kind of treatment. Nay, I have met with various instances of such affections, where mercury had been given in considerable quantities with no advantage whatever, and where a cure was effected by the use of an astringent injection.

About eighteen months ago a gentleman came to town from a considerable distance, with an extensive excoriation, attended with a discharge of a large quantity of thin offensive matter. The quantity of matter indeed was so considerable, that at first sight it appeared to be the discharge from a very inveterate recent case of gonorrhœa; but on farther examination, it was found to proceed entirely from the prepuce, the clap by which it was produced being entirely gone.

He had taken mercury for the space of six weeks, and the parts had been regularly bathed in milk and water, but with no advantage. The discharge continued as plentiful as ever, and the preputium was beginning to acquire some degree of thickness, and to be difficult to retract. In the space of a week he was completely cured, merely by bathing the parts from time to time with brandy and water, and applying, during the night, a poultice strongly impregnated with saccharum saturni.

This, as well as a variety of similar affections, which, were it necessary, I might enumerate, clearly evince not only that the matter of gonorrhœa, when confined to the urethra, does not terminate in pox, but that it proves equally inoffensive to the constitution, where it is even so sharp and acrid as to excoriate the surrounding parts. This points out a very marked difference between the matter of the two diseases. In pox,

even the slightest fore never fails to throw matter into the system, while the most extensive affections proceeding from gonorrhœa are so seldom found to injure the constitution, that I have never met with an instance of it.

By those who wish to support the opposite doctrine, it is said, that the matter of gonorrhœa would more frequently terminate in pox, were it not for the mucus of the urethra with which it is blended, and by which they suppose it to be rendered not only milder in its nature, but not so apt to be taken up by the absorbents. This, however, is merely ideal; and no proof can be advanced in support of it. Besides, the force or the argument is entirely done away, when we see, from what has been observed before, that even where the matter of gonorrhœa is more acrimonious than almost ever occurs in cases of chancre, so as in some instances to produce very extensive excoriations, that still no affection of the constitution ensues from it.

Nay, we see even in such diseases as are found to proceed from what is termed a translocation of the matter of gonorrhœa to other parts of the body, and which we suppose to happen through the sympathy of parts, as swelling of the testes, that still no affection of the constitution proceeds from them. I have seen some instances of ophthalmia proceeding from gonorrhœa, and in which a con-

considerable discharge took place of a puriform matter from the eye-lids, very similar to the matter of a recent clap. I have also met with instances of patients labouring under gonorrhœa being seized with a similar discharge from the membrane of the nose, but in none of these have I ever known lues venerea ensue. A considerable number of examples might be adduced of each of these, but the three following will be sufficient.

In the year 1786, a young man applied to me with a very troublesome painful disease in both eyes. The eye-balls were not much inflamed outwardly; but as he experienced an intense degree of pain from the admission of light, I concluded that the retina, or other deep-seated parts of the eye, were in a state of inflammation; and the membrane of the eye-lids was not only inflamed, but a constant and copious discharge took place from them of a greenish yellow matter, bearing much the appearance of the matter of a recent clap.

The account I received of his disease was this: That he had for eight or ten days laboured under gonorrhœa, the symptoms of which, however, were not more severe than usual; when, after being heated with drinking port wine, the discharge from the urethra, which had previously been copious, disappeared almost entirely. His eyes, almost immediately thereafter became pain-

ful, and in less than twenty-four hours the discharge of matter had taken place from the eye-lids.

The disease was at first treated with blisters, slight evacuations of blood, and the usual applications of ointments and collyria. These not proving successful, a course of mercury was prescribed; but although different attempts were made with it, mischief always ensued from it. It did not lessen the discharge, while it obviously increased the inflammation, and rendered the eyes more irritable. I therefore advised this remedy to be laid aside. A quantity of blood was taken from the temporal artery of one side; such vessels as were turgid upon the eye-balls were divided; scarifications were made in the inflamed parts of the eye-lids; poultices were applied over the eyes, in which opium and saccharum saturni were dissolved; and gentle laxatives were prescribed. By these means the pain soon abated, the inflammation and discharge of matter lessened, and in the course of a fortnight no symptom of the disease remained but a degree of irritability on exposure to much light, with which both eyes continued to be distressed for five or six months afterwards.

In the course of the following year, on being attacked with gonorrhœa, but of a more violent nature than the former, he was again seized, after exposure to much cold, and riding on horse-back,

back, to a similar affection of his eyes. In this instance too, blood-letting, and the other remedies formerly prescribed, proved successful, and he has not since that period had any return of the disease.

About two years ago I was desired to visit a patient, who, during confinement from a swelled testis induced by a gonorrhœa, was suddenly seized with a profuse discharge of matter from one of his nostrils, very similar to the running of a clap. The membrane of the nostril appeared tender, and somewhat inflamed, but little or no pain occurred from it. The discharge from the urethra had diminished considerably previous to the testis becoming inflamed, and on this taking place from the nose, it disappeared entirely. This suggested the propriety of attempting to excite a return of the discharge by the urethra; but no advantage being derived from this, I advised the affection of the nose to be treated with injections similar to what we use in cases of clap. An astringent solution was thrown up, sometimes with a syringe, and at other times by inserting a bit of sponge immersed in it up the nostril, and in the course of a few days the running ceased entirely.

Since that period, the same patient has been twice affected in a similar manner, and the same kind of treatment proved equally successful. No
mercury

mercury was given, and no symptom of pox ever appeared.

In the course of a few weeks after the recovery of this patient from the first attack of the disease, I was desired to see a friend of his, who for several years had been distressed with a similar discharge from both his nostrils. The running had occurred during the continuance of a clap; and although it had frequently diminished in quantity, yet at all times it was so considerable as to be productive of much uneasiness. No ulceration appeared on the membrane of the nostrils, but it was of a deep red colour, and tender over its whole extent. A variety of remedies had been employed; and at last, after the disease had gone on for upwards of three years, although no other symptom appeared, he was advised to undergo a course of mercury. This was done in the most attentive manner, but no advantage ensued from it.

In this situation, I expected that the same plan of treatment which proved successful in the preceding case, and which had also done so in others, would likewise answer here. In this, however, I was disappointed; for, although every variety of injection was used that I ever employed, yet no material advantage ensued from them. The running was sometimes indeed lessened by them, but it always returned equally severe as before; and although it has of late, even when no remedies

dies were employed, become considerably less, it still continues in such quantities as to prove highly distressful. No other symptom of the disease, however, has ever occurred.

As a farther proof of the difference of the contagions of syphilis and gonorrhœa, it may be remarked, that no stage of pox has ever been known to induce gonorrhœa, which surely would occasionally happen if the two diseases were of the same nature. We may also remark, that in numberless instances people have been poked by the matter of syphilis being by accident applied to a cut or a scratch, as often happens with surgeons in the dressing of chancres and buboes, but no one ever heard of a pox being got in this manner from the matter of gonorrhœa. It has indeed been said, that chancres may be produced by insinuating the matter of gonorrhœa beneath the skin. But experiments upon this subject are productive of such anxiety and distress, that they never have been, nor ever probably will be repeated so frequently as the nature of it would require. Nothing, therefore, can be admitted from this argument; for in order to avoid fallacy, and to give support to the opinion, these experiments would not only require to be conducted with accuracy, but to be numerous, and to be repeated on a variety of patients under every possible variety of circumstances; whereas we have heard of only a single experiment or two being made

made by any individual, and even these seem to have been made under the management of such as were strongly and obviously biassed in favour of one side of the question.

In opposition to these too, I may mention, that induced by some late publications upon this subject, two young gentlemen of this place have made some experiments upon themselves, with a view to ascertain the point in dispute, but the result was materially different from what appears to have happened in the experiments to which I allude. By the introduction of the matter of chancres, as well as of buboes, into the urethra, some pain and irritation were excited, but no gonorrhœa ensued; and, by fretting the skin of the prepuce and glans with a lancet, and rubbing the parts with the matter of gonorrhœa, slight sores were produced, but they never assumed the appearance of chancres, and they healed easily without the use of mercury. For the reasons mentioned above, however, we cannot place much dependence upon these or any other experiments that have yet been made upon this subject; we must trust therefore to experience and observation in the ordinary course of practice for means to ascertain it.

The other fact on which the doctrine we attempt to establish rests, is, that gonorrhœa and syphilis have appeared at different times in the same countries, and in some instances have remained

mained distinct and uncombined for a great length of time.

If these two diseases were of the same nature, and proceeded from the same contagion, they ought to have appeared nearly at the same time in every country to which the infection was carried. This does not appear, however, from the history of the disease, to have been the case. From the earlier writers upon this subject it is evident that the lues venerea was known in Europe at least forty years before the gonorrhœa virulenta. Dr. Astruc, whose accuracy and minute attention to this subject has not been equalled by any one, asserts, that in his time gonorrhœa had not been long known in China, although we know that the lues venerea had long prevailed in that country; and it would appear, notwithstanding of any thing that has been said to the contrary, that the lues venerea was imported to the Island of Otaheite a considerable time before gonorrhœa. It seems to have been carried to that and other islands in the South Seas by the very first European navigators who touched there, and to have remained distinct, without being connected with gonorrhœa, for a very considerable time; for when Captain Cook visited these islands in his second voyage, we have authority for saying that gonorrhœa had not then appeared in them.

These historical facts all tend to prove, that where only one of these diseases has been imported

ported to any particular district, it has always remained distinct, without producing the other, and which we cannot suppose would have happened, if both were formed by the same contagion. And, in addition to these, I may add another not less remarkable, the truth of which may be ascertained by all who incline to enquire concerning it, as the scene of it lies in our own country.

In various parts of the country of Scotland, particularly in some parts of the Highlands, in Galloway, and in Dumfries-shire, the common people have, for a great length of time, been afflicted with the lues venerea, under the denomination, as they term it, of *Sibbens*, and which, from those distressed with it having no communication with those infected with gonorrhœa, has still retained its original unmixed form, without a single instance, so far as I know, of gonorrhœa having been ever produced by it *. There is evidence in some of these districts of this disease having prevailed among them for upwards of seventy

* This must have happened from the disease in these districts prevailing almost entirely among poor country people, whose manners do not expose them to the hazard of being infected with gonorrhœa. None, however, can escape the sibbens who are much in company with those labouring under it; and so much are they convinced of its being the same disease with lues venerea, that even those who get it in the most innocent manner, are so ashamed of it, that they never speak of it as long as it can possibly be kept secret.

years. Nay, in some of them, it is said, from tradition, to have been left there by the soldiers of Oliver Cromwell, and to have been given, since that period, by one generation to another; and although I have had opportunities of seeing many hundred people labouring under it, with ulcers in the throat, nodes of the bones, fungous excrescences about the anus, blotches over the body, with almost every other symptom of syphilis, yet not an instance has occurred to me, as I have observed above, nor have I heard of any, where gonorrhœa took place in it. Whether it is from those infected with it concealing it longer than usually happens in towns, or what may be the cause of it, I shall not at present pretend to determine; but certain it is, that the symptoms produced by it are more inveterate than we usually find them to be in the ordinary form of this disease. They appear to be more particularly infectious, the slightest communication with those labouring under the disease being apt to produce it. The symptoms spread more rapidly, and a greater quantity of mercury is, for the most part, required to remove them, but still gonorrhœa is never produced in any stage of the disease.

A disease very similar to this broke out among the country people of Canada some years ago, owing, as is imagined, to communication with some of the soldiers quartered among them, who were infected with lues venerea. It is attended,

as

as is the case with the sibbens in Scotland, with all the symptoms of syphilis in the most virulent form of that disease; and it is so very infectious as to be communicated by eating or drinking out of the same vessel, or drying with the same cloth that has been used by those labouring under it. It often enters the constitution by absorption from the surface, without any previous ulceration, in which case it afterwards breaks out in buboes, nodes, ulcers, and other symptoms of a confirmed lues; but not an instance, I am informed, has happened of gonorrhœa being produced by it.

This, as well as what has occurred in the progress of Sibbens, is precisely what happened with the lues venerea when it first appeared in Europe, as well as at a late period in the South Seas; and there cannot be a doubt of the same circumstances taking place wherever the syphilis only is communicated. We have seen, in all these instances, that gonorrhœa has never been produced by it, which surely could not have happened if the two diseases were of the same nature, and produced by the same contagion. They could never, in that case, have remained for any length of time so distinct and precisely marked, for the one must necessarily in almost every instance, have soon been productive of the other.

As a farther support of this opinion, I may add, that if the two diseases were of the same
nature,

nature, and produced by the same infection, the remedies proving useful in the one might be expected to prove likewise so in the other. Instead of this, we find that those upon which we depend with most certainty in gonorrhœa, have no effect whatever in the cure of syphilis; while mercury, which is the only remedy, as we have observed above, upon which any dependence can be placed for the cure of syphilis, does not in gonorrhœa produce any advantage. Nay, that in some cases it evidently does harm.

We also know, that gonorrhœa will often terminate whether any remedy be employed or not, merely by moderate living, and keeping the parts regularly clean. The disease by this alone will, in most instances, become gradually milder, till at last it will disappear entirely. No such thing, however, happens in lues venerea. In this, as we have already remarked, even the mildest symptom becomes daily worse, unless mercury be employed, nor will any practitioner of experience trust the cure even of the slightest chancre to any other remedy.

Upon this evidence alone, of the method of cure of the two diseases being so essentially different, we might, I think, conclude that they are different in their nature, and that they proceed from different contagions. Were they of the same nature, and proceeding from the same cause, it is not possible to conceive that any medicine
would

would act as a certain cure for the one and do harm in the other, and yet every practitioner will admit that mercury is the only remedy hitherto known, upon which we can depend for the cure of lues venerea, while it evidently often does harm, as I have already observed, in gonorrhœa.

If the subject now under discussion was merely of a speculative nature, I should not have entered so minutely into it, for in that case it would have been a matter of indifference both to practitioners and patients whether these diseases were of the same nature or not; but as the treatment of gonorrhœa ought to depend much upon this circumstance, I judged it proper, before proceeding to treat of it, to make this attempt to have the point in question ascertained, as much as the present state of knowledge will allow.

PRACTICAL OBSERVATIONS.

SECT. XXXI.

OF THE CURE OF GONORRHOEA.

TILL of late, this disorder was confounded with the Lues Venerea, and treated in the same manner with mercury; and how many have not been the martyrs to this error in practice, which, I am sorry to say, truth has as yet hardly blushed out of daily practice!

Whenever a smarting heat or burning accompanies making water, with a purulent discharge staining the linen, appearing a few days after connection, we should immediately suppose that the reckoning is come, and endeavour to ward off the impending evil.

I will venture to affirm, from a large experience, that if the following injection be early employed, the disease will speedily disappear.

R. Hydr. muriat. gr. $1\frac{1}{2}$.

Aq. font. unc. 8.

Ft. injectio ter die utend.

That

That is,

Take of muriated mercury, a grain and a half.

Water, eight ounces.

This injection is to be used three times a day.

This was the famous injection of John Hunter.

Or the following,

Zinci vitriolat. gr. 15.

Aq. font. unc. 8.

That is, take of

Vitriolated zinc. fifteen grains.

Common water, eight ounces.

For an injection.

During the employment of either of these injections, the body should be kept extremely temperate, little exercise used, and in plethoric habits some of the natural stimuli abstracted, as bleeding, or purging with cooling salts. A quantity of mucilagenous drinks should also be taken, in order to wash away the matter as much as possible, and lubricate the passages, and obtund the salts of the urine.

This disorder is merely *local*, and if not speedily attended to is apt to remain for months, nay, years, still continuing infectious, and afterwards to terminate in a troublesome gleet, from a habit of morbid secretion set up in this part.

This is to be treated with bark, and an astringent injection, as the one above.

PRACTICAL OBSERVATIONS.

SECT. XXXII.

OF THE CURE OF THE LUES VENEREA

THIS disorder is at first local, like the inoculated small pox, and begins with a sore of a peculiar form, having a hollow crater or excavation with a prominent rising surrounding it, or as writers style it, a chancre is a sore, with a thick red and hardened basis.

Now is the time to take alarm, and immediately think of getting rid of the horrid poison. It should be as much dreaded as arsenic in the stomach. You stand upon a brink, and it is your own fault if you fall into the precipice. Mercury is at hand, and it will save you.

The method of applying it, is by means of pills, or in the form of ointment.

The formulæ are :

R. Calomel, scr. ʒ. ʒ.

Conserv. ros. q. s.

F. pil. 20. Cap. pil. 1. Primo mane
et horâ somni sing. diebus.

That is, take of

Calomel, one scruple,

Conserve of roses, as much as is sufficient
to make 20 pills.

Take one in the morning, and a second at
bed-time.

R. Unguent Hydr. fort. unc. 2.

Inungr. dr. 2, horâ somni. sing. noct.

That is, take of

Strong mercurial ointment, two ounces.

Rub in two drachms along the thighs every
night, until the mouth becomes sore.

The latter mode is most adviseable.

Some persons strongly recommend the follow-
ing solution:

Hydr. muriat. gr. 2.

Aq. fort. unc. 8.

Cap. coch. larg. 1. horâ 6tâ vespere & horâ
somni ex cyath. decoct. hordei.

That is, take of

Muriated mercury, two grains.

Common water, eight ounces.

Take a table-spoonful at six in the evening, and
at bed-time, in a cup of barley-water or gruel.

An opiate may be taken at night.

Medicines are daily advertised as containing
not a jot of mercury for the cure of this disease,
and the evils produced by mercury are aggravated
by reporting its effects, if such happen, upon certain

constitutions, as general*. Not only quacks of this description, now undertake to cure this disease; but every idle fellow who does not chuse to follow some useful employment, sets up for doctor, assumes some fictitious name, and advertises an intallible specific for the venereal disease. Some have even the effrontery to advertise an infalible preventative. The apothecary's man, or even the apothecary's man's man, often passes for an adept in curing this malady. Nor is it uncommon for the fellow who brushed the surgeon's coat, or cleaned his shop, to step into his master's shoes, and sometimes into his chariot, by his pretended skill in curing the lues venerea.

The credulity of the sensible part of mankind in regard to medicine, is truly astonishing. Even those who affect to be sceptical in other matters, are the easy dupes of every pretender to a secret medicine: they will neglect the advice of the most skilful physician, and run after the ignorant quack, because he promises them a cure, and without mercury; but alas! this cure, nine times out of ten, turns out to be no cure at all, and the disease is, by this means, trifled with, till it becomes nearly incurable.

The most frequent dupes to quackery, however, are the young and thoughtless. They credit the contents of every puff that is put into their hands as

* See *Mercury Stark-Naked*, a recommendatory pamphlet for De Velno's vegetable syrup, a medicine which, as Dr. Buchan affirms, never cured a single venereal case.

they walk the streets, and swallow with eagerness the drugs it recommends. I would beg leave just to hint to such inexperienced youths, that the advertising quack is ten to one more ignorant of medicine than themselves; that his sole aim is to take their money, and when he has got that, he cares no more for the patient. I am warranted to say this from daily observation, and am sorry to add, that too many, from woeful experience, know it to be true. So great, however, is the influence of quackery over the young mind, that I have seen one of those unfledged gentlemen, while I was writing a prescription for him, take up a newspaper, and casting his eye on an advertisement, which promised to do in a few days what I had told him would require weeks, if not months, to complete, put my prescription in his pocket, and haste away to the performers of quick and easy cures.

From the prejudice raised against mercury, by the hue and cry of these *legal murderers*, the disgrace and pest of civilized society*, it is now become a difficult matter to persuade patients to continue mercury a sufficient length of time. The wish to be soon well is natural, but it is productive of much mischief. The victims to quick cures are innumerable: yet men will run after those who make such promises, though to their own destruction.

* Is there no Member of the House who has courage to stem this torrent?

Few days pass in which I do not see instances of the danger arising from imperfect cures of the lues venerea; and I have reason to believe, that those which are not seen, nor regarded, are still more numerous.

Nor is the difficulty much less in getting men to take mercury in sufficient doses. Mercury may be taken for any length of time, but if it is not administered in such quantities as to produce sufficient effects on the system, it will not subdue the poison. This, however, is not an easy matter to estimate. The difference of constitutions is such, that two persons can hardly be treated exactly in the same way, and our conduct must be regulated chiefly by its effects on the system. Every symptom of this dreadful disease should be overcome at least a fortnight before mercury be discontinued, and even here we must admit of calculation rather than of certainty.

The great art in administering mercury is to regulate the dose in such a manner as to keep the system fully saturated, without forcing it off by any of the outlets. This may generally be done by gradually increasing the dose till the mouth is sore, and then keeping it so by smaller doses. But it is difficult to persuade patients to let mercury be employed with due energy. A sore mouth and fever is an evil too great to be endured! I am poisoned with mercury, they exclaim. But what is this to the devastation of so foul a disease?

ease? and what is this poison in comparison to the other? but not yet feeling it in all its horrible effects, they choose often to desist before a sufficient trial has been made, and thus bring themselves and mercury into disgrace. If a man could keep *a medium* he would be perfect; but this is not in his nature: he flies from one extreme to another, and is equally wrong in both. This has been strictly the case with regard to the exhibition of mercury. Many constitutions were ruined by pushing it too far; and now effects equally hurtful are produced, from its being too sparingly administered. We are therefore to follow a *middle path*, and, if possible, to avoid the bad consequences arising from either of the extremes. I do not mean to recommend the old and justly exploded practice of exhibiting mercury, so as to raise a violent salivation. This was productive of many bad consequences, and is by no means necessary. All the purposes of mercury may be answered in a much milder way: I mean, by a gentle salivation; or a moderate degree of soreness of the mouth being kept up for a considerable length of time.

Another great evil is the want of precaution whilst employing mercury. The *quack* not only holds out the lures of expedition, secrecy, and cheapness, but also that of employing a remedy that will not oblige a man to take any peculiar precautions,

or make any change in diet. With regard to expedition, there is no great difficulty in healing a chancre, and this is expeditiously done, for sake of the pay. The object is to touch the cash, and the poor deluded wretch is dismissed; and we are not surprized at the appearance afterwards of a fore-throat, obstinate ulcers, and carious bones. The wish of following the usual mode of free life is great, and the greatest risk is incurred, and the dead tell no tales. The true science of medicine, however, teaches that the natural stimuli must be at first moderated, whilst under the influence of mercury, and catching of cold most anxiously avoided, as the effects of mercury are lasting, and the abstraction of stimuli difficult under the operation of mercury, which wears down excitement, and requires supporting, although this is not to be done until towards the conclusion of the course, when tonic medicines, a generous diet, and the benefit of country-air, are absolutely necessary.

SECT. XXXIII.

THE OPPOSITION WHICH THE EXPLODING OF
SALIVATION MET WITH.

SYDENHAM seeing that gonorrhœa was cured with purgatives, and this being confounded with syphilis, or the lues venerea, affirms that *jalap* alone has cured the venereal disease. Hence he argues, that mercury is no specific, and only cures by *evacuation*, just as the lancet is not a specific for pleurisy, although it be a cure for that disease. He recommends, therefore, mercury to be employed so as to excite not less than a spitting of two quarts a day. This practice has been very generally followed. When an attempt to explode salivation was made, it is pleasant to observe the opposition that was then made to it, and the manner that the controversy was conducted.

Dr. Willoughby having published a translation of Mons. Chicoyneau's New Method of curing the lues venerea, there soon appeared remarks upon this work, (which was entitled, *The Practice of Salivating shewn to be of no Use or Efficacy in the Cure of the Venereal Disease, but greatly prejudicial thereto,*) with a letter from Mr. Palmer, surgeon, to the author of the aforesaid remarks, upon the subject of the exploding of salivation,
by

by Daniel Turner, M. D. of the College of Physicians in London.

But as these two great heroes are out of date, it may be necessary to shew, that this Samuel Palmer was a man of some eminence. Dr. Turner's work, was entitled, (A Practical Dissertation on the Venereal Disease: in which, after an account of its nature and origin, the diagnostic and prognostic signs, with the best ways of curing that distemper, together with many histories relating to the same, are candidly, and without reserve, communicated. In Two Parts. The Second Edition, revised, corrected, and improved, not only by many considerable observations interspersed throughout the book, but the addition also of several rare cases at the close. To which REMARKS are added, dedicated to Mr. Palmer.) —The Dedication is as follows:

SIR,

The first edition of my Syphilis (appearing some few years since, under the name, by way of sanction, of that worthy and fair practitioner, Mr. Richard Blundel, deceased) having met with the general good opinion of your fraternity, and the proprietors of that copy soliciting a second, when I had made some farther additions, and increased the number of histories, I concluded to prefix your's. For as no man has met with better opportunities, so neither greater abilities to improve this

this

this branch of practice than yourself, and consequently none can better judge of the performance.

A farther motive to this second choice of patronage was this : that however eminent therein, you have pretended to no secret way of cure ; being open and communicative, as every fair and honourable practitioner should be.

We have, you know, Sir, an old Latin proverb, *Quod ars non habet inimicum, nisi ignorantem*: unto which I will take leave to adjoin another, *Nec ullus, nisi fraudulens, in profligandis morbis, secretum*.

I wish some gentlemen, too fond, I think, of these *new ways*, would consider what company they are got into, and the umbrage they give to some of our *most scandalous empirics*, and indeed all other pretenders.

From hence you will easily observe, that although for the reputation of the patient, I would have his cure undertaken and performed with all imaginable secrecy ; yet do I verily believe, he is least likely to obtain it from one pretending to any secret therein. Would our College of Physicians rase out of their catalogue all these *arcanists*, and your company set a mark upon the like members, both *physic* and *surgery* might be *better esteemed*, and the *public secured from designing men* *.

* Tu dors, Brutus, may be justly said of these bodies, except when they are quarrelling among themselves. Vide *The Battle of the Wigs*, a poem, by the late Bonnel Thornton, of facetious memory, a new edition, published by Symonds.

In allusion to this; I will recite the following passage :

A certain person, noted for a nostrum in this particular disease, sent for me not many years past, to consult with him in a case, which, at that time, he thought would prove his death ; and in one of my visits, when he seemed in greatest danger, I put the question to him, whether or not, for the general benefit, he would not divulge a particular preparation? When he ingenuously answered me, it was not worth while ; for that although it had been a good article to him in private practice, yet it was no other than the same thing disguised, which he named to me, that was in use with many others of the profession.

It happened that he recovered, and having given my word, that neither his name nor his remedy should be ever brought upon the stage by me, I shall religiously observe it ; having got only this particular satisfaction hereby, that whatever he may do in other company, I am sure, in mine, he will pretend to no *singular* method of curing this distemper.

But I need not acquaint you with the mean artifices practised by some among us, of which yourself so often have been a witness. Wishing, therefore (which is all indeed that I can do), that every gentleman, who is related to the profession of physic, would, for the honour of the same, practise

practise in their several stations with that integrity and candour that becomes them, and *that civil usage of each other*, which seems, I must needs say, *much wanting**, I shall only subjoin farther, that

I am, SIR,

Your friend and humble servant,

DANIEL TURNER.

Devonshire-square,
Without Bishopsgate,
June 1st, 1724.

After the foregoing sheets, says Dr. Turner, were sent to the press, I received from my book-feller a pamphlet with the title above said; in the dedicatory Address whereof, I find, lest we should have drawn in all the hospital-surgeons by their heads and shoulders, the editor has endeavoured to secure one: in whose hands leaving the great discovery, backed with his repeated successful practice to thrive and receive improvement, I shall proceed to his Advertisement, which is to supply the place of a preface, and which I intend to insert, with a paraphrase on the same, in the manner following:

* This is curious. But as Christ justly observes, it is common for a man to see the mote in the eye of another, when he has a beam in his own.

The

The piece here offered him, is a little system (yet big enough in conscience for its value) of facts and experiments (not to find out the longitude, but made on persons who possibly had the pox, but more probably had not) accurately observed, (that is, after they had let the devil in by the port-holes of the skin, he did not presently sally out by the mouth) and fairly stated. (Yet not one word of the quantity of the remedy.) There needs not any defence either of the matter or manner thereof, (if you will take Dr. W——'s word for it) both being what all physical treatises are, or ought to be. (Well said, however, but woe surely to the state of physic, if all its tracts were managed after such a manner, whatever matter they contained.) The reader may here rest secure; (if nobody disturbs him) he is not to be amused with words, (but with whole sentences and paragraphs made up with somewhat like them) or betrayed into a persuasion of any thing by a shew of reasoning, (unless perhaps in explicating the modus of mercury's operation, and the stench of the mouth or so, thereby occasioned.) We obtrude no hypothesis on him, (excepting that of the venereal poison's being possible to be carried off by a salivation.) espouse no party, (but the inoculators;) beg no principles, (yet assume those of railing against all who shall oppose us; particularly the C——e, and the company of S——s;) propose no conjectures, (only tell you in many of the cases, the patient having formerly been infected with this disease, we thought, which

is a little of kin to a conjecture, there might be some reliques thereof mixt with the other complaints, and accordingly made use of the frictions) but facts and experiments (of little significancy) undoubtedly attested, and observations (of much less) invincibly (here he begins to put on his armour) warranted.

(Having now put on his buff, with head-piece, the front especially of burnished brass, he comes on.)

Though nature, reason, and experience are on our side, (What say you to this, Mr. S—I P——r, Mr. J——s D——y, and all you, H——l S——s?) yet I foresee we shall not want opposers, (how lamentably would the poor gentleman have been disappointed, if nobody had taken notice of him?) but on what principles, (surely not anti-salivating ones) and with what weapons (hardly FIGG's the fencers) it is no hard matter to divine. (Once again, gentlemen, what say you, how do you intend to arm? for though this conjurer can, I profess I am unable to find out.) We shall have prejudice start up in a hundred shapes, (come, Doctor, let us hope the best, it may be not above ninety-nine, and so we escape one) and clamour with a thousand tongues (are there so many within the district of Billingsgate?) Custom will be trumped up as evidence, (and where is the harm if it be found preferable to innovation, or backed with solid reason and still greater experience?) and a physical process, like a title at law, pleaded for from patent and prescription. (I hope the Doctor is not kept out of his estate by a possession of the right
owner,

owner, time immemorial, that has turned his head from physic to the law.) The practice of the town will be urged again and again, (*that is, twice*) and Warwick-lane and the hospitals (*unless one of their members possibly be tickled into his interest*) hauled into the controversy by head and shoulders, (*this controversy must surely be a large one.*) We know who are the advocates of old women's notions, and who pay a religious regard to practices on account of their staleness, we know who are sworn to wage war (*good Sir, keep on your buff and front-piece*) with every thing not taught them by tutors and nurses, (*who do you think? why still the same C——e and H——l S——s.*)

(*Now, gentlemen, look to it—Hark! the trumpets.*)

It is fresh in every body's memory, who were the opposers of inoculation——(*Hark! again, the drums*) Doubtless, the same spirit (*or ghost*) that rose against a safe and gentle method (*witness, young L——d S———d, L——d B———t's man, Mr. Ac———t's daughter, &c.*) of treating the small-pox, will be inflamed (*for you know this is an inflammatory disease*) against a like method (*that is, an inoculating one*) of treating the other.

(*Keep clear, gentlemen, of the other side, he is now going to make the onset.*)

We shall have more Maffey's and Sparham's (*alas! poor parson Maffey, or is it apothecary Maffey that is fallen by the first fire*) enter the lists, (*stand buff, however, dear Doctor*) and new Wagstaffe's
(*for*

(for the old one, whether killed or not by our artillery, is certainly dead) prickt forth (for goodness' sake!) in burnisht steel, (which yet is held by some for far better armour than that of brass.)

(The engagement being over, the dialect now differs.)

But it is to the few, (coax him, Pug!) the honest, (that never broke lock, nor pickt a pocket) the ingenious, (who, like the famous Farwkes, can play twenty legerdemain-tricks with cards as well as cups and balls) the discerning few (that see plainly no man was ever one farthing the better for a salivation, unless some few where the same happened against our wills, or by mere chance) that we make our application; (but the mischief is, we are not much regarded) men of too extensive thought (reaching the ultra-mundane space) to be pinned down (surely a good ten-penny nail would have made them faster) by prejudice: whose understandings sit loose (or indifferent on which side the truth lies) or unembarrast with popular opinions, (you see I am right, one that regards not either side of the question, or what the people opine of the matter) who have no interest inconsistent with those of their patients, (unless taking a guinea of a rich miser for a fee, should by the said miser be so accounted) and only visit the sick (taking none at all, no, not for the world) to recover him with all the ease (without cauterys to be sure) and safety they can: with such the following picce will have its weight, (for surely none of those who have been thus carest with the few, honest, ingenious,

ingenious, discerning, men of application, extensive thought, loose understandings, unembarrass'd, inconsistent, interests, and the like, will ever attempt to put this piece in the scale, or so much as question the standard weight thereof.)

To proceed.—The author is a person of the first eminence, with regard both to his dignity and abilities in physic, (*of the former there is no dispute, of the last the world will judge by the performance*) being head of the faculty of Montpellier; (*a city of more renown, in the editor's opinion, it should seem, than that of London, where the professors of the same are most of them, if not all, old women and nurses*) a place to which our countrymen fly (*I suppose he means in the packet boat*) after the popular salivations (*this man is a dear lover of the populace*) have proved ineffectual: (*here, methinks, it had been necessary to have given us some examples of those cured at Montpellier without spitting, having been thus popularly salivated with us to no purpose*) nor must it be omitted, (*well thought of on my word*) that the person they have recourse to is our very author, (*prodigious!*) Monsieur Chicoyneau (*surely it must be worth while to take wing to Montpellier, to see so wonderful a man, who understands so well not only when the same is necessary, as you will find presently by the invincible experiments, but also how to rub the mercurial ointment upon the skin of the patients, so that they shall never salivate*). If people can be content to have experience,

without paying dearly for it, (*for though the operator is never so kind to our people, yet the people at Montpellier, he tells you plainly, will make you pay, and dearly too, for every thing else*) it is here offered à bon marché (*excessively civil if he had not confounded our people with these two hard words, brought over, I suppose, when he last took wing from that wonder-working place, the city of Montpellier*). He shews them how to save the fatigue of a voyage (*just before it was a flight*) to Montpellier, and the torture of a salivation at home; (*for you must know they never have sore chaps at that city as you may see in the undeniable experiments here following*)

(*We are now got towards the conclusion, and it is surely time, though some of the greatest blunders and absurdities are yet behind.*)

What he here publishes, is only the practice of a single person (*with nine more in company*) and a single year, among a number of each equally successful (*unless that some were cured perfectly, others imperfectly, and many were never the better*). From the notes (*which are the editor's*) it will appear, that the method recommended is no local one, (*howbeit ointments and plaisters too have been ever so denominated; but to set us right here, we are told what is still more surprizing surely*) that the change of air and climate make no alteration in its effects, and that it succeeds every whit as well at London as at Montpellier, (*curious that is, in spite of your teeth,*

teeth; sometimes there may happen a sore mouth, and slavering in both places.)

(Before we come to our author's experiments, it may be needful we make some remarks upon his introduction, though not in the way of descant, as in the editor's advertisement; yet otherwise, as the matter thereof requires, and which we will answer paragraphically, as they stand inserted. To begin, therefore,)

Though mercurial salivation be almost universally allowed the only cure of a confirmed lues; yet if reason, facts, and experience, may prevail over custom, authority, and vulgar prejudice, it will be found ineffectual, and pernicious therein*.

To begin the proof of this assertion with matters of fact.

1. If a person free from a venereal taint be salivated in the common method, the saliva he evacuates is as fetid, and its quantity as large, as if he were infected: hypochondriacs have afforded too many instances hereof: it is, therefore, a vulgar prejudice to suppose that a copious evacuation of fetid saliva argues the virulency of the venereal infection; both the quantity and ill scent are otherwise satisfactorily accounted for. The quantity proceeds from the vehement stimulating.

* REMARKS BY TURNER.—This, I think, so bold an advance, that no man who had not the utmost assurance of truth being on his side, would have offered to the world, much less in opposition to that reason, those facts, and that experience he calls upon to umpire; as will be manifest, I doubt not, presently.

power of the mercurial particles admitted into the blood; whereby the saliva is increased, its secretion promoted, some of the vessels it passes through are distended, burst, and dilacerated, and consequently corrupt, and give a bad smell*.

2. Common experience assures us, that the distemper, though palliated for a season, often remains uncured, and breaks out more severely after a salivation has been accidentally raised, by mercurial preparations internally taken; which gives us a suspicion, at least, that such an evacuation is not the proper cure in this case: nay, so far are the skilful artists from promoting this discharge, when it thus happens, that they endeavour by all means to put a speedy stop thereto; a considerable argument, surely, that they think salivation either useless here or detrimental †.

3. After

* REMARK.—As to the saliva evacuated, either in the sound, or the diseased state, we have taken notice in our Preface to the Practical Dissertation foregoing: but surely it may be made a question, whether the quicksilver, as merely such, acts otherwise than by its pondus, as I have there also observed.

† REMARK.—If these are the undoubted and invincible observations by which he would establish his new method, I am afraid they will weigh little; and for the same reason we must disclaim the bark, because some intermittents stand out against it: but common experience, as well in the first as the last, proclaims the contrary to that which he asserts. What he says of the distemper growing worse after accidental salivation, I think cannot be imputed there-

to

3. After the use of a little mercurial ointment, or before the salivation rises to its intended height, many symptoms of the distemper, as ulcers, chancres, pains of the limbs, &c. usually vanish: but if the effects of mercury be so great without salivating, why may not a proper continuance of it in this manner complete a cure*?

4. On the other hand, the same symptoms will sometimes remain after a profuse salivation has

to, but to the nature of the disease, which possibly, though not yielding to this slight accidental spitting, might have been subdued, had the same been carried on, or not been checked after its appearance. However, we do not pretend that salivation is at all times infallible, nor, I think, does he the way of *friction*, as may be guessed by the following experiments. If the greater numbers, and the most deplorable objects are holpen thereby, it is deservedly to be continued: who these artists are I cannot imagine, unless himself and some few of his countrymen, together with the *honest, ingenious, discerning, &c.* taken notice of in the Editor's Advertisement.

* REMARK.—Here, doubtless, is a solecism, and the author, I fear, is running himself into a snare. First, he says, the symptoms vanish before the salivation is at the height; and then talks of the effect of the remedy without salivating at all; but I think the interrogatory may be fairly retorted, his query standing thus in his first words: if the effects of Mercury are so great, even before the salivation is at its intended height; what might we not expect by prosecuting the said method, when not only these symptoms enumerated, but all others, the attendants upon that disease, notwithstanding all our author's invincible arguments to prove the same useless and detrimental, are generally vanquished?

been

been obtained ; in which case it is certain, that the venereal taint is not all carried off with the saliva*.

5. When a salivation proves ineffectual (*here we have a tacit consent that sometimes it is effectual, though just before it was always detrimental and useless in this distemper*), the most judicious practice orders the patient, after the recovery of his strength, to apply the mercurial unguent in small quantities, at proper intervals, so as to prevent a second flux at the mouth ; and this with very good success. The most experienced physicians are therefore sensible, that salivation not only sometimes fails to eradicate the lues, but also that this grand evacuation ought to be guarded against in future attempts to cure it †.

6. Salivation,

* REMARK.—The amount of all this is only that there are some instances which nobody that I know of ever disputed ; wherein, neither this, nor any other method, will avail, not even his own dear darling frictions without salivation ; and we readily join issue, that such as are not cured, have not received their cure, whether they spit or not.

† REMARK.—Here likewise, as before, we have hot and cold in the same blast ; salivation cures, but it does not cure ; or when mercury does not cure by spitting, we must try what it will do without. We have already owned, that at some times the disease is too powerful for salivation ; but let the Doctor give us but one instance of a profound infection (of which none such appears among his forty experiments) as gummi, nodes, exostoses, or cariosity, instead of chancres, buboes, or serpigines, &c. removed without a salivation ; I will engage to produce half a score of that

6. Salivation, because of the great danger that attends it, is never practised upon very ancient or worn out persons, infants, pregnant women, hectic, highly scrophulous, or scorbutic patients; but the cure of these, when infected with the lues, is happily committed to the prudent use of mercurial frictions, so as to prevent the least salival flux. But if the lues be thus curable in tender and shattered constitutions, why not also in strong and robust bodies*?

that kind, for each single example, restored to perfect health thereby. Some of them, where his frictions, as he has insinuated on the other side, had been divers times undergone, the patient growing still more diseased than before; and in justice surely, he should have told us who his experienced physicians were, as well as given us better proofs than we can find here, to justify that practice.

* REMARK.—We have here an account of the subjects not fit to undergo the remedy; yet such as these we see his own experiments are made upon it. If it be answered, without a design of salivating, it may be replied, that no man using the friction in this manner, can absolutely warrant the same shall not ensue; as you will see happened in his first experiment, as also in several of the rest. Nor surely, I think, would any experienced artist but himself, have rubbed a quicksilver-ointment into the body of a man seventy years of age, whether with intention of spitting or not. As for the success with the stronger, where it will answer in the weaker, I think this is out of the question; unless he believes any man can be so silly as to suppose what is safe and harmless to an infant, should be hurtful to the adult.

7. Persons

7. Persons of the largest experience in venereal cases, from duly reflecting upon their own practice, have ingenuously acknowledged, that salivation contributes nothing to the cure of the lues; and wished to perform it by a less hazardous, painful, and nauseous means; declaring themselves willing to abandon the old method, and make use of this, would the groundless prejudice of their patients allow them*.

8. Upon a careful examination of the whole matter, I was firmly persuaded, that the usual

* REMARK.—This is the most jejeune argument of all; there being none certainly so prejudiced against an easy cure, could the same be ascertained from reason and experience, especially so large: nor have I heard yet of any one in his senses, who desired his surgeon to cut off his arm or leg, when he was well informed, that with much ease and safety, the same might be preserved by a long experienced remedy. It is much he would not inform us of these persons of large experience, who have thus exposed themselves to continue a dangerous and painful method, merely in compliance with the prejudice of their patients, and contrary to their own better judgment, or knowledge of an easier and safer way. I am persuaded the city of London can furnish gentlemen of as large experience in these cases as any in France, not excepting Monsieur Chicoyneau himself, or those of the same faculty in Montpellier: and notwithstanding his editor's suggestion, I know not one of the whole number but would readily come into any easier method than that practised at present, which they should find, upon experience, would answer their expectation.

method

method of salivating for the lues, was not only insignificant, but prejudicial to the cure. I therefore resolved to pursue a more gentle means, and last year made use of mercurial frictions, at convenient intervals, to forty patients, who, notwithstanding the vulgar prejudice, were many of them fearful lest a salivation should rise upon them*.

9. It usually happens, indeed, that those who have no notion how mercury acts upon the body, observing venereal patients to grow well after salivation, presently attribute the cure to the sensible evacuation, whereof their eyes are witnesses.

* REMARK.—It is, doubtless, the duty of every honest artist, to study the ease and security of his patient; and therefore I am far from blaming our author's industry: but when he makes so bold a step, as to tell us the method of salivating is insignificant, nay prejudicial, contrary to the experience of so many hundreds yearly cured thereby, some of which had fruitlessly also undergone his frictions; this, I say, is arraigning not only the opinions, but the senses of mankind, and argues, surely, a want of that due examination he pretends to, before the same was delivered. In his preceding paragraph, it was the patient's prejudice opposed his cure, without spitting: but here of a sudden they become fearful of what they desire. So unhappy is our author, for want surely of examination, or somewhat like it; but if they did really fear that they should spit, their fears, at least, of many of them, were not groundless; since notwithstanding the Doctor's different intention, it so fell out, as we observed but now, and as you will find in several of his invincible experiments we shall come to presently.

But

But as philosophical reasoning would be thrown away upon these people, I refer them to visible (*that is, ear-witnesses*) matter of fact for conviction*.

10. I must here farther observe, that salivation is judged necessary by the vulgar, to throw off the quantity of Mercury received from the unction: but our eyes will tell us, this is also evacuated by stool, by urine, and common perspiration; not here to mention, that the cure is universally found to be best performed, when the Mercury is longest detained in the body †.

11. Nor

* REMARK.—If the Doctor had not given us a little of his philosophy before, about the stimulus and stink of the mouth, this might have passed well enough; but, doubtless, till we have some farther intelligible explication of this affair than he has laid down, the people will be apt to stick to their eye-witnesses; and if they see a poor miserable object, who had been greased several times to no purpose without spitting, recovered afterwards under a salivation, they will, I say, be apt to think (maugre all the Doctor's flourish to the contrary) that such salivation was the means of his cure.

† REMARK.—As to this matter, the vulgar, I believe, think nothing of it; I mean the remedy; nor dwell upon the manner of its operation, it sufficing them to receive their cure: but in regard to the artist, it certainly behoves him to take care his patient is freed, as well from the said remedy, having done its office, as the disease thereby to be encountered; lest a palsy take place of a pox, which is too frequently the case, or a tremor that of an intense pain. Whether this friendly enemy pass off by stool, urine, spitting, perceptible or imperceptible transpiration, it may be indifferent

11. Nor must I omit, that it seems more difficult to convince some physicians than some patients, that the cure is not performed by evacuating the infection along with the saliva: however, the question is not, Whether the virus be discharged with the saliva, but whether a salivation be necessary or superfluous, assisting or detrimental to the cure? With me it is certain, where either a salivation, or any other considerable evacuation happens, the mercury escapes before it has totally insinuated itself, and struck off the lurking infection from the finer vessels, or inmost recesses of the body; and hence I make no question the cure is often left unfinished by salivation*.

12. And

indifferent for ought I know; yet surely no one can keep him very long an inmate, whatever good opinion this gentleman has entertained of his being harmless, without suffering thereby in the most sensible part too of his tenement: although from our author we may surmise, that the mechanics occupied therein, contrary to what I have laid down in my Preface, must have the halest and robushest habits; and above all others, longevity and a strong system of nerves, must be entailed upon the miners, who are so happy as to converse daily with this harmless guest, and that too in *puris naturalibus*.

* REMARK.—It is plain, from the foregoing, that the capacity of all physicians, who think differently from himself, is called in question; and that they are, at least as to this subject, as ignorant as their patients, in believing the venom thrown off with the saliva, without a syllable of proving the inconsistency thereof. But waving that perhaps too knotty a task, the question, as he says, is not whether the virus, &c. which question we have already resolved.

12. And if the mercury acts upon the venereal virus, by virtue of its mechanic properties, it must doubtless cause some alteration in the fluids of the body, which effect will be hindered by any large evacuation, that, like phlebotomy, or a strong cathartic, only empties the vessels*.

13. Most

solved. As for the time this remedy requires to enter the inmost recesses of the body, whoever has seen the method of injecting thereof, will easily be convinced, that the smallest tube in the animal structure, is instantly pervaded thereby, though perhaps not so suddenly as by the syphon; yet considering the velocity of the motion of the blood, now increased, and the extreme fineness of its *moleculæ*, together with the form thereof, which is spherical or globular, and so fitted to pass the vessels of whatever diameter, must easily reconcile how few circulations will carry it into those recesses: that in a few days they must blend themselves with the fluids therein contained, as well as if whirling about for a whole month; and that when once the venom is so altered thereby, as to be fit for carrying off, by any proper excretory ductus, together with itself, whether the same be done by stool, as frequently falls out, by sweat, or urine, as I suppose more rarely, by spitting called salivation, as most natural and common, the sooner it is eliminated, certainly the better; and the less stay after this apparatus, or fitting it for such expulsion, the less danger to such parts of the fabric, to which it is found so manifestly injurious.

* REMARK.—That mercury acts by its mechanic properties, no one, I suppose, doubts; and that it causes some alteration in the fluids of the body, is as indisputable: but what these mechanic properties are, and in what the alteration consists, he very discreetly overlooks, for fear possibly he might throw away his philosophical reasoning upon us: but doubtless he must be out in fancying the same hindered,
after

13. Most of the forty patients mentioned, went through a gentle course of frictions, in between eighteen and twenty-five days, the usual term

after the alteration induced by the evacuation; which, it is more than probable, consist of the salutary effects thereof. Is not the practice alike in almost all our alexipharmicks, viz. having subdued the malignity, and fitted it for that end, to assist the expulsion by the most suitable outlets, if I may borrow one of the Doctor's own phrases? Is not this the voice of Nature? Do we not give vomits in some, and after previous preparation of the morbid matter, diaphoretics in others, diuretics again in others, with cathartics after all, to carry off the illuvis yet remaining, by the common sewer of the intestines? And all founded upon the observation, that Nature several ways oppressed, endeavours diversely to acquit herself thereof; and under which oppression she must still groan, if such passages happen to be shut up, or entrance denied for throwing off the same. It was, I make no doubt, by chance, as in many others, we hit upon this discovery, as it has been already noted by an antiquary; that from rubbing the sores of these, and others the grieved parts, with some quicksilver ointments, without the least view or apprehension of a ptyalism, but in order to destroy the disease in the skin, and observing the sores mouths attending, after which the malady, by a sort of enchantment, disappearing; not only ulcers drying up, but the pains ceasing, they after designedly tried the like experiments, by which to overcome the like, in a way perhaps more cautiously, and, by degrees, methodically also, until it came to be practised in the manner now-a-days with us. Evacuations by bleeding and purging have both their use and abuse, as well in smaller as the larger quantity; none being too large, whilst the patient is rather strengthened than weakened thereby; the spirits, before oppressed, enlivened,

term for actual salivating in the common method; but the time that is spent to prepare for a salivation, and the time required for recovery after it, are saved in our method; which consequently lessens, as well the expence and duration, as the uneasiness of a cure*.

I will

livened, and the morbid matter, offending either in quantity, or quality, by plethora, or cacochymia, is unloading. With almost, if not altogether, the same reason, might this author deny the benefit, or advantage of that spontaneous ptyalism, so truly critical in some fevers; particularly the confluent small-pox of the adult, as this of the salivation raised by mercury: the former being depuratory to the blood, and deriving such part of the variolous matter by those of the mouth, as cannot be discharged by the glands of the skin: the latter, that of the venereal poison, thus linked with itself, and freeing the blood, as well thereof as of itself, by the same passages.

* REMARK.—What time they take up in France in this useless preparation, I cannot say, though I have been told of one longer continued than the salivation itself; which our wiser English artists, upon experience, finding unnecessary, have many years discarded: though the editor of this Treatise supposes this neglect the reason why some have been disappointed, not considering the Idiosyncrasy, or peculiarity of temperament; whence all the preparatives in the world will not render some bodies susceptible of this particular secretion, so natural to others: and therefore though bathing a few days before with warm water, may suit with some thin habits; bleeding in the plethoric, and purging, especially by lenients, for over costive bodies, together with the abstinence I have already prescribed in the preceding discourse; yet is the rest of the apparatus a direct amusement, a cheat upon the fancy of the patient, and an unnecessary

I will finish, says Mr. Turner, by giving a case of a gentlewoman, strong and vigorous before, who, on the account of some venereal symptoms, chiefly pains

unnecessary procrastination of his intended cure. Nor will the method of friction be less tedious, some having required a month, then stopped by reason of sore chaps, and to it again, as I have known it, and all to no purpose, unless by the delay of spitting, the symptoms encreasing, the patient has been in danger of being thus fooled out of his life. So that the sum of all seems now reduced to this short query, notwithstanding the chicanery of Monsieur Chicoyneau; whether a sore mouth and flavering with a cure, are not preferable to all this greasing and daubing without, however easy to be undergone, and entertaining a secret enemy, which at unawares, may after undermine and ruin him, as certainly, though perhaps less sensibly, than his disease?

We are now arrived at the experience itself, (as he calls it) or his forty patients; in which it must not be expected that I shall recite every paragraph at length, as I have done the preceding, but collate only the several cases, and report the success of each; when the reader may judge of this method, whether he can see any thing therein that is fit to be pursued, or for which we ought to lay aside our practice of salivation.

Twenty of the forty were uncertain as to the disease being venereal, or not; and that near upon the same number, that is, half, did salivate; though, perhaps, less than in the common way, where we encourage the same, at least do not endeavour to stop it. That five of the six last, particularly (the principal of the venereal cases) obtained their cure in all likelihood thereby. As to the miscarriages, we find three out of eight; four out of eleven; three more out of eight, and one out of two, besides one that out of three deceased:

pains in her limbs, very lately underwent the frictions, which, without sensible evacuation of any kind, have left her with such entire resolution of

So that here are twelve, as above, missing their aim out of his forty patients. I wish some of them were not much worsted, as we say, by the rash undertaking; nor among them all will you find one instance of a profound infection.*

The conclusion of the piece is made up of the same rhodomontade with his introduction; extolling this gentle harmless method of insensibly wounding us in the most tender part, the nervous system; lodging an enemy in our bowels, or trusting to his getting out again any way but that which Nature seems more peculiarly at this time to indicate; I mean his running off together with a flood of diseased lymphæ, (now melted down) by the glands of the mouth.

With respect to the use of this remedy, whether intending salivation, or not, in the hysteric, hypochondriacal, or melancholy, in the scrophulous in ancient people, and above all, in those who are paralytical, I think the Doctor stands by himself: I am sure the generality of physicians will declare against it, as utterly pernicious and detrimental; so that from any of his premises, I cannot, for my own part, conclude this method so valuable as he represents it; nor that salivation should be discontinued in the cure of the lues; though I heartily agree, that all physicians and surgeons should communicate their observations, not only on this, but any other, by which mankind may be benefited, and physic advanced; having long since borrowed for my own Motto, that of the most learned and illustrious body in Europe, viz. Nullius in Verba; and sincerely wishing, be it on which side it will, ut magna est, sic Veritas prævaleat.

* How like this reasoning to the opposition which the acids have received, when chancres, buboes, blotches, are called *Illegitimate Marks* of Venereal Infection.

the nerves, and loss of the locomotive faculty, that she is no more in condition to help herself, than in her infant state: but for the greater satisfaction of our editor, with those of his opinion in this business, I will here insert a letter I have received from that noted practitioner more particularly therein, Mr. Samuel Palmer of Bow-lane, by way of answer to one I sent him, whence an inference is easily drawn between his calculation and that of Monsieur Chicoyneau's forty cases.

MR. PALMER'S LETTER.

SIR,

I have perused, at your request, Dr. Willoughby's Version of Monsieur Chicoyneau's Experiments of curing the lues venerea, by mercurial frictions, without salivation.

The original I read over two years ago at the desire of a friend, whom I told, some of the symptoms there related, were in themselves so *trivial*, that a few doses of calomel would have done as much, and that some other of his cases did not appear to me to be venereal.

It is my opinion the method proposed by him will not answer the designed end, which I am the more confirmed in, having known one, very little differing from this, not many years since practised in England without success.

The following case will, in some measure, demonstrate the uncertainty of it.

About the latter end of August, or the beginning of September, 1721, I was desired to visit a gentlewoman just then arrived from *Montpellier*, where, in the space of nine months, she had gone through various courses of mercurial frictions, for breakings out on several parts of her body. When I saw her, she had a phagedenic ulcer spreading from one of her eyebrows to the lid.

Two others of the same kind upon her head, with a caries of the bone under each ulcer: a node upon each ulna, with several serpiginous ulcuscula upon her arms: another node upon each tibia, and so much emaciated, that she appeared like a skeleton covered with a loose skin.

As to your desire of knowing how many patients might annually be taken into the Lock-Hospital, Southwark, I here send you an exact account of those that were admitted and discharged from that house in 1720, which was the last year they were under my direction.

Admitted from January, 1719-20 inclusive, to	
January 1720 exclusive	115
Cured and discharged	108
Died	7*

* This is a larger proportion of deaths than in the present improved practice, generally without salivation. We shall say nothing of the after-injury to the constitution, arising from a violent mercurial course.

In answer to your question relating to a salivation, I have generally found, upon the nicest observation, when a fever, looseness, or rash appeared in the course of a salivation, raised by mercurial ointment, if (upon the removal of those symptoms) the salival ducts were well floughed, and the ptyalism continued a due length of time, in proper quantity, we seldom, or never, were disappointed of our cure.

If this gives you any *satisfaction*, it will be a *pleasure* to,

SIR,

Your humble servant,

SAM. PALMER.

PRACTICAL OBSERVATIONS.

SECT. XXXIV.

OF THE CURE OF SYPHILIS BY OTHER SUBSTANCES
THAN MERCURY.

GIRTANNER was the first who alledged that the effects produced on the human body by the different preparations of mercury were entirely owing to their combined oxygen, and that it was on the disengagement of this principle, which had a powerful action on the system producing the mercurial disease, that their anti-venereal effects depended.

We do not find, however, that Dr. Girtanner had ever put this assertion to the proof, by exhibiting other substances, containing a large proportion of oxygen, in the place of mercury, in the lues venerea.

Mr. Scott, surgeon in the East India Company's service at Bombay, was the first who attempted to verify this doctrine by actual experiment. The nitric acid*, containing about four
parts

* The acid of nitre is obtained in various degrees of oxygenation. When the proportion of oxygen to that of azot is less than three of the former to one of the latter, it is termed nitrous

parts of pure air and one of azot, was the first substance that occurred to him as being fit for a course of experiments in the venereal disease : he tried this acid also in some other complaints, the result of which it is not my present business to notice*.

Mr. Scott's first letter is dated April the 30th, 1796 ; at which time, he alledges, that the nitric acid had been tried so fully as to satisfy him of its efficacy. His words are as follow: " I have now had a pretty extensive experience of the good effects of the nitric acid in syphilis, and I have reason to believe that it is not in general less effectual than mercury in removing that disease, in all its forms, and in every stage of its continuance. I think that, in some cases, it has even superior powers, for I have succeeded completely

trous acid, and in this state fumes of a red colour are very freely emitted. But when there are four parts of oxygen, by weight, combined with one part of azot, the acid is transparent and colourless, emits no vapour, its constituent parts are more firmly united than in the other species, and it is denominated nitric acid. So that nitrous acid, is the acid of nitre containing a smaller proportion of oxygen, whereas, the nitric acid is superoxygenated, or furcharged with that principle.

* The following observations of Mr. W. Scott are extracted from a small pamphlet which was sent to Sir Joseph Banks, entitled, Some Letters upon the application of the Nitric Acid to Medicine, first published in the Bombay Courier, 1797. And it is curious to observe, that Sir Joseph gave these letters to Dr. Pearson, who was so *laughed at* by the different medical men to whom he mentioned their contents, that he returned them to Sir Joseph Banks, reporting his total want of success in the cause of science and humanity.

with

with the acid, when mercury administered both in this country and in Europe for years together, had failed of success.

“ A mass of mercury in the circulation produces many disagreeable effects, that make it often necessary to give over its use before it has answered its intention ; but the nitric acid may be taken a long time without any material injury to the health, nor are its effects on the mouth, in producing inflammation and a flow of saliva, so disagreeable as from mercury.

“ As the acid I distil is not strong, and is of unequal strength at different times, I am regulated chiefly by the taste in giving it. I make two pints of water as acid as it can well be drunk. This quantity is finished every twenty-four hours, taking about a Madeira glass full only at a time.

“ I have sometimes removed syphilitic symptoms with the acid in five days ; more commonly, I think, they give way in a fortnight ; but sometimes, though seldom, they continue for twenty days without any apparent relief. I have cured syphilis with the acid under a variety of forms, where no other remedy had ever been employed, and for two years I have seen no relapse in those cases. I have administered it against the primary symptoms of the disease, and I have given it for exostoses, for carious bones, for nocturnal pains, for eruptions and ulcers of the skin, and for all the train of misery that is attendant on lues.”

This

This respectable writer concludes by hinting, “ that several of his friends had begun to use the nitric acid in syphilis, and that an account of their experience should make the subject of a future paper.” I hope,” says he, “ this slight account will induce medical practitioners to try the effect of the nitric acid in syphilis ; a disease which, in this climate (viz. the East Indies), is so frequently the disgrace of their art.”

The second letter of Mr. Scott is dated June the 11th, 1796. He therein endeavours to obviate an objection which might be made against the nitric acid, on account of its decomposing the teeth. His method is, to mix the congee of rice with it, or to sweeten it with sugar, or liquorice root. Although these additions may deprive the remedy of some of its oxygen, he has not found that they diminish its effect.”

Mr. Scott also notices, that when the acid has been united with the earth of alum, it had the advantage of not acting in the same way on the teeth. From this nitric clay he obtained the same effects as from the nitric acid.

He concludes thus, “ In a few years, I think that mercury, as a remedy for lues venerea, will be banished by this acid ; and in some of my dreams for the improvement of the condition of man, I even imagine that the poison of syphilis may, in a great measure, be extinguished over the face of the earth, not by the doubtful efforts of the
magistrate,

magistrate, but by an agent like this, safe, simple, and efficacious."

With a view, says Mr. Cruickshanks*, Surgeon and Chymist to the Ordnance, to satisfy ourselves of the antisyphilitic property of the nitrous acid, and, at the same time, to discover how far this might be owing to its oxygen, the following trials were instituted:

The first substances employed were acids, such as are known to contain much oxygen, and which part with it readily; as yet we have only used the nitrous, oxygenated, muriatic, and citric acids. It is well known that the basis of these are different, and the only thing which they have in common is oxygen; if, therefore, they should all produce the same, or nearly the same, effect, on this disease, as well as on the constitution, the natural inference to be drawn is, that this must depend upon their common principle.

The only other substance which we have yet tried, is the oxygenated muriat of potash, a neutral salt, containing likewise much oxygen, and which parts with it very easily. We mean, however, to extend our researches farther when a proper opportunity shall offer, and to make trials with some of the other acids, the black oxyd of manganese, &c.

* Vide Dr. Rollo's most excellent work on the Diabetes, with the Appendix by Mr. Cruickshank, who is universally acknowledged to be the first chemist in this country.

In detailing the following cases, we shall satisfy ourselves with describing the symptoms at the commencement, and any remarkable change which afterwards occurred during the cure; with enumerating the doses of the different medicines employed, and their effects in general on the disease and constitution; and with giving the final result and duration of the treatment. A more particular, or daily, account (although such was regularly kept), would be tiresome, and could not afford any additional information, or satisfaction.

It may be proper to observe, that most of the patients whose cases are here related, were kept in a ward set apart for the purpose, and where it was impossible, from the nature of a military hospital, they could procure any medicines but such as were given to them. The cases were also selected, being primary affections*, and such as were *strongly and distinctly marked*, and where *no mercurial remedies had been employed*.

* Primary cases, according to John Hunter, are the best criterions of venereal infection. His words are: "Of the symptoms of the second stage of the lues venerea, it must be observed, that *this stage of the disease is not so well marked as the former*, and as it is of more importance, it requires *all our discernment* to determine *what the disease is*."—Vide page 327.

GENERAL ABSTRACT

Of the Patients admitted in the Royal Infirmary at Woolwich, dividing their Cases into the Primary and Secondary Nature of the Venereal Disease, specifying the particular Remedies employed, and the respective Numbers who have been treated.

1st. PRIMARY DISEASE.	Number of Patients.
<i>Remedies employed.</i>	
Nitrous acid	54
Oxygenated muriat of potash . . .	54
————— manganese .	3
————— muriatic acid	4
Lemon-juice	3
Nitrous acid and oxygenated muriat of potash	7
Ditto and oxygenated muriat of manganese	1
Mercury and the new remedies com- bined	16
Total	142 cured.
2d. SECONDARY DISEASE.	
Nitrous acid	5
Oxygenated muriat of potash . . .	5
————— manganese and potash	1
Nitrous acid and oxygenated muriat of potash	2
Total	13 cured,

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It would appear from the cases just related, that the nitrous, citric, oxygenated, muriatic acids, and, more particularly, the oxygenated muriat of potash, are capable of removing the primary symptoms of the lues venerea, and that too without producing any thing like mercurial salivation. How far these cures may be permanent, or whether the secondary symptoms may not hereafter supervene, can only be determined by further experience and observation; as the primary symptoms, however, have not yet returned in any one instance, we should suppose that these have been completely removed; the only doubt therefore which can reasonably remain, must relate to the secondary ones; and if, in a few cases, should even these make their appearance at some future period, it can form no solid objections to this mode of treatment, as similar consequences frequently follow the use of mercury.

In our first trials it was thought proper to confine ourselves to cases of primary affections, these being always less equivocal and doubtful; we intend, however, when an opportunity shall offer, to employ the same substances in the more advanced states of the disease, particularly where mercury has either failed, or had little effect.

Before we attempt to explain the *modus operandi* of these remedies, it may be proper to take a review of the effects they were observed to produce on the constitution in general.

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The general effects from the acids were, an increase of appetite, an augmentation in the quantity of urine, more, or less thirst, white tongue, and an increased action of the whole system, most generally accompanied with fizy blood. The oxygenated, muriatic acid appeared to be the most active, and the citric acid the least so. The nitrous acid, in a few instances, likewise affected the bowels. The oxygenated muriat of potash produced thirst, the white tongue and the increased action of the system, in a more remarkable degree than the acids, but there was less alteration perceived in the quantity of urine, and on the appetite. The effects, therefore, induced in common by these different substances, appear to be a general, increased action of the whole system, accompanied for the most part with fizy blood.

That this increased action is occasioned by the disengagement of oxygen, is rendered highly probable from the following considerations :

1st. It is now sufficiently known that oxygen is the substance which imparts to the different acids their activity, their tendency to combination, and other characteristic properties, their radicals being all different, and possessed of powers either opposite, or in no respect similar to those of the compounds, or acids.

2d. The oxygenated muriat of potash appears to be, in fact, nothing more than the common muriat, combined with nearly half its weight of oxygen;

gen; for if this substance be exposed to heat in a retort, a very large quantity of the purest oxygen gas is disengaged, what remains being the common muriat of potash, amounting to a little better than half the weight of the salt employed. Now it must be allowed that the common muriat, at least in the doses given upon the present occasion, could not have produced the remarkable effects which we have ascribed to the oxygenated muriat. This difference of effect must, therefore, be owing to its combined oxygen, a circumstance rendered the more probable, when we reflect that a similar action is produced by the union of the same substance with the radicals of the acids.

3d. When oxygen gas has been inhaled into the lungs, a general increased action of the whole system has succeeded, and that sometimes to a very remarkable degree. (See Beddoes on the Medical Qualities of Factitious Airs, &c.)

From these considerations, therefore, we would infer, that the general, or constitutional effects which have been observed to follow the use of these remedies, must be ascribed to the disengagement of their oxygen.

How then does this increased action cure the local sores produced by the venereal virus? Is it true, that all general affections of the system suspend for a time the local ones, proceeding from this poison, or must we have recourse to some specific

specific powers, as has generally been the case in explaining the action of mercury? We are inclined to adopt the first hypothesis, and to suppose, with Mr. Hunter, that mercury, as well as the remedies under consideration, cure this disease by exciting a new action in the system, in consequence of which, the syphilitic one is suspended; and this suspension being continued for a sufficient length of time, the whole of the virus, from the change which the fluids naturally undergo, is at last completely expelled from the body.

With regard to the last hypothesis, we would observe, that there can be little or no doubt if oxygen could be applied directly to this poison, it would destroy it specifically, in the same manner as it destroys many others; but it is extremely difficult to conceive how this substance, so prone to combination, should, when taken in by the mouth, be applied in its pure state to a remote, local sore, in a quantity sufficient to produce any sensible effect; and this objection applies still more strongly to mercurial remedies, because in some of these, as the *mercur. muriat. corrosiv. and mitis*, the quantity of oxygen disengaged must be extremely small. From these considerations, therefore, we are inclined to adopt the opinion, that these different remedies produce their effects by exciting a new disease, or action, in the system; and that this action, for the reasons already given, is produced by the disengagement of their oxygen. Should this

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this theory be correct, we have no more reason to expect relapses after a course of these acids, &c. than after one of mercury; nay, if we conceive the virus to be absorbed, and carried into the general mass of circulation, where it must be exposed to the action of the disengaged oxygen, the patient, upon the whole, may be considered as more secure, for there will be a greater chance in this case of its complete destruction and eradication. This is a point, however, which experience alone can determine.

If these remedies should be found, from further experience, to be adequate to the cure of this disease in all its stages, the advantages which they possess over mercury are so great and important, that they must, in a great measure, supersede its use. They require no particular regimen, no confinement, are not accompanied with any disagreeable consequences during their operation, and they seem, in general, to produce their effects more quickly and certainly, particularly the oxygenated muriat of potash. But what we consider to be of far greater importance is, that they do not appear to excite, in any sensible degree, the action of other diseases, especially inflammations, one of the greatest inconveniences attending a mercurial course, and by which many have lost their constitutions, and several their lives. Mercury, besides its occasionally bringing other diseases into action, has also very deleterious effects upon

some particular habits; and this has been so remarkable in certain cases, that from the necessity of occasionally leaving it off, cures have not only been protracted, but the complaint has had an opportunity of running through all its different stages, by which the constitution has too often suffered an irreparable injury. No disagreeable consequences of this kind are likely to follow the use of these acids, or the oxygenated muriat of potash; for although they were given in several weak habits, the health did not suffer in the least, on the contrary, it, in general, seemed to have been improved.

Although we suppose that mercury and the acids, &c. cure the venereal disease by exciting some peculiar action in the system, the nature of these we, nevertheless, conceive to be perfectly different; the mercurial action must, no doubt, be owing in part to the metal, and not to oxygen, for all the mercurial preparations, whether oxyds, or combinations with acids, produce salivation, ulceration of the tongue and mouth, &c. very much alike; effects which, we have shewn, are not occasioned by oxygen disengaged under different circumstances. The mercurial action is also accompanied with an impaired appetite and general wasting, the reverse of which takes place during the action of the new remedies. Indeed, the white tongue and sily blood appear to be the only circumstances common to both, for in
all

all other respects they differ essentially. We know it has been said, that the nitrous acid produces salivation, but this is certainly a mistake, which has probably arisen from confounding the local and temporary soreness in the gums and teeth, occasioned by the acid, with the inflammation and ulceration produced by mercury; for in no one instance, even where the common concentrated acid was given to the quantity of three drachms daily, did we perceive any thing like mercurial salivation. The mercurial action we, therefore, conceive, must be owing to the metal rendered active by its union with acids, &c.; but that of the acids and oxygenated muriat of potash, to the disengagement of their oxygen.

Of the different substances which we have yet employed, we would prefer the nitrous acid and the oxygenated muriat of potash; the first, because it may be readily procur'd, and seems in most cases sufficiently active, and the last, on account of its being the most efficacious and certain, producing, in most instances, an almost immediate effect upon the disease, without injuring the constitution. The nitrous acid which we have hitherto used, has never been perfectly pure, nor highly concentrated; in short, it was nothing more than the common fuming acid of the shops. The nitric acid has not been tried, nor do we conceive that it would possess any superior advantages. This medicine for the most part produces a sensible

effect in six, or eight days, and frequently accomplishes a cure in fifteen, or sixteen. We have generally begun with a drachm in the day, diluted with about a pint and a half of water; but where the acid is only of the usual strength, and free from any metallic impregnation, a drachm and half, or even two drachms, we believe, will seldom be found too much. We have never exceeded three drachms in the day, but we do not by any means suppose this to be the greatest quantity which can be taken with safety and advantage. Of the oxygenated muriat of potash, we have generally begun with three, or four grains, although in general six, or eight may be given, at first, four times a day; where it produces sickness, or griping (which is sometimes the case) the dose should be diminished. We have never yet exceeded the quantity of fifteen, or sixteen grains four times a day, not but that more might have been given had it ever been found necessary.

One of the greatest objections to the oxygenated muriat is, the difficulty of preparing and purifying it; nor is there any process yet known, by which it can be manufactured and sold at a low price; for these reasons we have no doubt that a very impure kind will be offered for sale, the consequences of which must be, want of success and disappointment to those who employ it.

Its purity may be judged of by attending to the following circumstances: the crystals should be
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shining flat rhomboïdal scales, or tablets, without any mixture of cubes; they should have little, or no taste, and when thrown upon red-hot coals, should detonate rapidly, with a very vivid flame, and without any decrepitation; but when the crystals feel rough, have a bitter saltish taste, and decrepitate much when thrown upon live coals, we may be certain that they contain a considerable proportion of the common muriat of potash, which is always formed in great quantity during the process. This salt, when perfectly pure, does not decompose the nitrats of silver, or mercury. But this degree of purity is not necessary when it is to be employed as a medicine; only when completely, or nearly freed from the common muriat, a smaller dose will be sufficient, and much less thirst excited.

The oxygenated muriatic acid appears likewise to be a very efficacious remedy in this complaint; but in the way in which it is usually prepared, it always contains manganese, and not unfrequently lead, particularly when the manganese employed has been procured from Bristol; for the manganese from the Mendip Hills very generally contains more, or less of this metal. In every case where either the oxygenated muriat of potash, or oxygenated muriatic acid are prepared in a medicinal point of view, nothing but the purest crystallized manganese should be used; that upon Upton-pine, near Exeter, is the best. The acid given in the

four cases related above, was procured by adding the common muriatic acid to the oxygenated muriat of potash; by this means a very large quantity of the purest oxygenated acid may be quickly obtained; and it is this process we have been in the habit of using for some time, where a very pure acid for delicate chemical experiments has been required.

Instead of making the gas pass through water in the usual way, the oxygenated salt was sometimes simply added to the common muriatic acid, diluted with about an equal bulk of water; in this case the salt was slowly decomposed, and the acid converted into the oxygenated acid. About a drachm of the salt, when pure, was found to be sufficient for three ounces of the dilute acid: of this we have given to the extent of half an ounce in the day, always beginning, however, with a much smaller quantity.

The philanthropic Dr. Beddoes at this time took up the question with his accustomed zeal and liberality, and through him we have copious accounts of trials made in the Royal Hospital at Plymouth by Mr. Hammick's son with similar success, authenticated by the late Dr. Geach.

To DR. BEDDOES.

“ SIR,

ROYAL HOSPITAL, JULY 26, 1797.

“ I do myself the honour, agreeably to your request, of writing to you, and assuring you that the patients, whose cases Mr. Hammick, junior, lately transmitted, were regularly attended by myself; and every circumstance was remarked as minutely as possible, and is strictly true. So great, indeed, has been the success of this nitric medicine in the venereal disorder, that many patients, who had been broken down by an antecedent use of mercury, under which the disorder gained ground, recovered their health and strength without the assistance of diet-drinks, change of air, the bark, or any other tonic medicine whatever. We have had but few instances where the stomach and bowels have been affected by it; but the precaution of taking it through a narrow glass tube has prevented the acid from affecting the teeth, and the medicine has been rendered more palatable by mixing simple syrup with it; and this addition, as far as we have hitherto noticed, has been effectual enough to prevent both mawkishness and pain. But although these circumstances have now and then succeeded the use of the nitrous acid, it does not affect the mouth, or produce a ptyalism. *It does*

not

not impair the appetite, it does not require any dietetic regimen, or confinement. Indurated buboes have yielded to it without suppurating; phagedenic buboes have healed after unsuccessful trials with mercury. In chancres, however large, or fordid, and in excoriations of the scrotum, however fetid and extensive, the cure, by its use, goes on more rapidly than by a mercurial process. Such chancres and excoriations have been dressed only with simple ointment, that the patients might not be incommoded by the friction of the linen, and that the effect of the medicine might be better ascertained when there was no local application. We have not found, after the chancres have been cured by this medicine, that the throat has been affected; a circumstance not unusual, especially when such ulcers have been dressed with any mercurial preparation. The cases sent by Mr. Hamrick were the worst that were received into the hospital, and that the nitrous acid has succeeded in fifty cases, or more, is most certain.

Suffer me to own, that when we first made trial of the nitric acid, no great opinion was entertained of its success. Accustomed to give mercury in this disease, a practice sanctioned by great authorities and time, we were inclined to think that no medicine but *mercury* would cure it. There was no bias, no predilection, therefore, for this new medicine, no attachment to system. But as the nitrous acid was so respectably recommended

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by yourself, this was a sufficient motive to make trial of it; and nothing but the success that has attended its use could authorize us to write in this manner to you, who are the best entitled to the earliest communication.

I have the honour to be, Sir, &c. &c.

FRA. GEACH."

PRACTICAL OBSERVATIONS.

SECT. XXXIV.

OF THE TREATMENT OF THE SECONDARY STAGES
OF LUES VENEREA.

SOME doubts have since been diffused, whether the remedies just delivered are to be esteemed at all as a substitute for mercury, and the controversy has been conducted with that acrimony which warps the understanding, and prevents the admission of real truth. The primary stages of disease are denied by Mr. Blair, surgeon of the Lock, in his animadversions*, to be *legitimate* examples of venereal affection, and the more dire

* Mr. Blair has a very curious motto to his book.

“Attaquer une erreur est le droit commun à tous les hommes, en médecine c’est un devoir: & celui qui s’est consacré à la conservation des citoyens, ne doit pas craindre de s’élever contre les préjugés dont il connaît les dangers; sur-tout, quand il peut leur substituer une vérité utile.”

J. S. Mittié.

“To attack AN ERROR is the common right of every man; in physic it is a duty: and he who is consecrated to the preservation of citizens, ought not to FEAR to raise his voice against PREJUDICES of which he knows the danger; more especially when in their place he can *substitute* AN USEFUL TRUTH.”

An excellent motto this for the other side of the question! Hunter conceived that the secondary stages were not distinctive marks of syphilis, perhaps another disease; for upon inoculation of the matter, it did not produce the primary symptoms.

stages of it are allowed by him to be the only criterions.

Facts have been stated on both sides, as well as with respect to mercurial frictions, and the acids, and the calm philosopher draws from them this conclusion: that to remove the secondary stages of this disease, neither venereal frictions, that is, a mild venereal course, nor the substitutes for mercury, are *always* sufficient; but that, in these cases, mercury should be aided by mezereon-root*, and that
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* R. Mezer. dr. 2.

Aq. font, lb. 2.

Coque ad lb. 1. sub finem coctionis, adde

Glycyrrh. incis, unc. 1.

Cola. bibat ad unc. 4. ter quaterve in die.

That is, take of

Mezereon, two drachms,

Water, two pints.

Boil to half. At the end add,

Liquorice root, one ounce.

Strain off. He is to take four ounces, or more, three, or four times a day.

Or if this quantity of mezereon be found too stimulant, the following form may be used:

R. Mezer. rad, dr. $1\frac{1}{2}$.

Rad sarsæ, unc. 2.

Coque in aq. lb. 3. ad lb. 2. Colaturæ, adde.

Syr. althææ, unc. 1.

That is, take of

Mezereon root, a drachm and a half,

Sarsaparilla, two ounces.

Boil in three pints of water to two pints.

Strain off, and add,

Syrup of marshmallows, an ounce.

pushed to a much greater extent than in other examples. Tutò, celeritèr, et jucundè, is inapplicable, except in the first stages of this loathsome disease.

The famous Lisbon diet-drink is:

R. Rad. Sarsaparil.
Santal alb.
Santal rubr. āā, dr. 3.
Rad. glycyrr.
Mezerei āā, unc. $\frac{1}{2}$,
Ligni rhodii,
Guaiaci,
Sassafras āā, unc. 1.
Antim. crud. unc. 2.

Misce, et infunde in aquæ fontanæ bullientis lb. 10,
per horas 24, dein coque ad lb. 5. Colaturæ capiat
a lb. $1\frac{1}{2}$ ad lb. 4, quotidie.

That is, take of

Sarsaparilla,
White santal,
Red santal, equal parts, three ounces;
Liquorice,
Mezereon, equal parts, half an ounce;
Rodium,
Guaiacum,
Sassafras, of each one ounce;
Crude antimony, two ounces.

Mix these, and infuse in five quarts of boiling water, for
twenty-four hours; after that, boil it to five pints;
strain, and take from a pint and a half to four pints
daily.

PRACTICAL OBSERVATIONS.

SECT. XXXVI.

OF ARSENIC IN THE CURE OF CANCER.

THE indulgent reader will excuse the introduction here of cancer, although not a *contagious disease*, from the similitude which this has with some acrimonious poisons engendered in the system, chiefly attacking parts related to sensual harmonies, as the lips, tongue, breasts, &c. which parts are the too frequent sufferers in this most deadly of all human afflictions, which brings the wretched by slow and painful steps to the grave.

A FEW years ago, a certain Dr. Hugh Martin, a surgeon of one of the Pennsylvanian regiments stationed at Pittsburg, during the latter part of the late war, came to that city, and advertised to cure cancers with a medicine which he said he had discovered in the woods, in the neighbourhood of the garrison. As Dr. Martin had once been my pupil, says Dr. Rush, I took the liberty of waiting upon him, and asked him some questions respecting his discovery. His answers were calculated to make
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me believe, that his medicine was of a vegetable nature, and that it was originally an Indian remedy. He shewed me some of the medicine, which appeared to be the powder of a well dried root of some kind. Anxious to see the success of this medicine in cancerous sores, I prevailed upon the doctor to admit me to see him apply it in two, or three cases. I observed in some instances, he applied a powder to the parts affected, and in others only touched them with a feather dipped in a liquid which had a white sediment, and which he made me believe was the vegetable root diffused in water. It gave me great pleasure to witness the efficacy of the Doctor's applications. In several cancerous ulcers the cures he performed were complete.

Anxious to discover a medicine that promised relief in even a few cases of cancers, and supposing that all the caustic vegetables were nearly alike, I applied the phytolacca, or poke-root, the stramonium, the arum, and one, or two others, to foul ulcers, in hopes of seeing the same effects from them which I had seen from Dr. Martin's powder, but in these I was disappointed. They gave some pain, but performed no cures. At length I was furnished by a gentleman from Pittsburg with a powder which, I had no doubt, from a variety of circumstances, was of the same kind as that used by Dr. Martin. I applied it to a fungous ulcer, but without producing the degrees of pain,

pain, inflammation, or discharge, which I had been accustomed to see from the application of Dr. Martin's powder. After this, I should have suspected that the powder was not a simple root, had not the Doctor continued upon all occasions to assure me that it was wholly a vegetable preparation.

In the beginning of the year 1784, the Doctor died, and it was generally believed that his medicine had died with him. A few weeks after his death I procured, from one of his administrators, a few ounces of the Doctor's powder, partly with a view of applying it to a cancerous sore which then offered, and partly with a view of examining it more minutely than I had been able to do during the Doctor's life. Upon throwing the powder, which was of a brown colour, upon a piece of white paper, I perceived distinctly a number of white particles scattered through it. I suspected at first that they were corrosive sublimate, but the usual tests of that metallic salt soon convinced me that I was mistaken. Recollecting that arsenic was the basis of most of the celebrated cancer powders that have been used in the world, I had recourse to the tests for detecting it. Upon sprinkling a small quantity of the powder upon some coals of fire, it emitted the garlick smell so perceptibly as to be known by several persons whom I called into the room where I made the experiment, and who knew nothing of the object of my enqui-

enquiries. After this, with some difficulty I picked out about three, or four grains of the white powder, and bound them between two pieces of copper, which I threw into the fire. After the copper pieces became red hot, I took them out of the fire, and when they had cooled, discovered an evident whiteness imparted to both of them. One of the pieces afterwards looked like dull silver. These two tests have generally been thought sufficient to distinguish the presence of arsenic in any bodies; but I made use of a third, which has lately been communicated to the world by Mr. Bergman, and which is supposed to be in all cases infallible.

I infused a small quantity of the powder in a solution of a vegetable alkali in water for a few hours, and then poured it upon a solution of blue vitriol in water. The colour of the vitriol was immediately changed to a beautiful green, and afterwards precipitated.

I shall close this paper with a few remarks upon this powder, and upon the cure of cancers and foul ulcers of all kinds.

1. The use of caustics in cancers and foul ulcers is very ancient and universal. But I believe arsenic to be the most efficacious of any that has ever been used. It is the basis of Plunket's, and probably of Guy's, well known cancer-powders. The great art of applying it successfully is, to dilute and mix it in such a manner as to mitigate the violence

lence of its action. Dr. Martin's composition was happily calculated for this purpose. It gave less pain than the common, or lunar caustic. It excited a moderate inflammation, which separated the morbid from the sound parts, and promoted a plentiful afflux of humours to the sore during its application. It seldom produced an eschar; hence it insinuated itself into the deepest recesses of the cancers, and frequently separated those fibres, in an unbroken state, which are generally called the roots of the cancer. Upon this account, I think, in an ulcerated cancer it is to be preferred to the knife. It has no action upon the sound skin. This Dr. Hall proved by confining a small quantity of it upon his arm for many hours. In those cases where Dr. Martin used it to extract cancerous, or schirrous tumours that were not ulcerated, I have reason to believe that he always broke the skin with Spanish flies.

2. The arsenic used by the Doctor was the pure white arsenic. I should suppose, from the examination I made of the powder with the eye, that the proportion of arsenic to the vegetable powder could not be more than one-fortieth part of the whole compound. I have reason to think that the Doctor employed different vegetable substances at different times. The vegetable matter with which the arsenic was combined in the powder which I used in my experiments, was probably nothing more than the powder of the root and berries of the

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the solanum lethale, or deadly nightshade. As the principal, and perhaps the only design of the vegetable addition was to blunt the activity of the arsenic, I should suppose that the same proportion of common wheat flour as the Doctor used of his caustic vegetables would answer nearly the same purpose. In those cases where the Doctor applied a feather dipped in a liquid to the fore of his patient, I have no doubt but his phial contained nothing but a weak solution of arsenic in water. This is no new method of applying arsenic to foul ulcers. Dr. Way, of Wilmington, has spoken in the highest terms to me of a wash for foulnesses on the skin, as well as old ulcers, prepared by boiling an ounce of white arsenic in two quarts of water to three pints, and applying it once or twice a day.

3. I mentioned, formerly, that Doctor Martin was often unsuccessful in the application of his powder. This was occasioned by his using it indiscriminately in *all cases*. In schirrous and cancerous tumours, the knife should always be preferred to the caustic. In cancerous ulcers attended with a scrophulous or a bad habit of body, such particularly as have their seat in the neck, in the breasts of females, and in the auxiliary glands, it can only protract the patient's misery. Most of the cancerous sores cured by Dr. Martin were seated on the nose, or cheeks, or upon the surface or extremities of the body.

It

It remains yet to discover a cure for cancers that taint the fluids, or infect the whole lymphatic system. This cure, I apprehend, must be sought for in diet, or in the long use of some internal medicine, or external application.

To pronounce a disease incurable is often to render it so. The intermitting fever, if left to itself, would probably prove frequently, and perhaps more speedily fatal than cancers. And as cancerous tumours and sores are often neglected, or treated improperly by injudicious people, from an apprehension that they are incurable, (to which the frequent advice of physicians "to let them alone," has, no doubt, contributed) perhaps the introduction of arsenic into regular practice as a remedy for cancers, may invite to a more early application to physicians, and thereby prevent the deplorable cases that have been mentioned, which are often rendered so by delay or unskilful management.

4. It is not in cancerous sores only that Dr. Martin's powder has been found to do service. In sores of all kinds, and from a variety of causes, where they have been attended with fungous flesh or callous edges, I have used the Doctor's powder with advantage.

SECT. XXXVII.

GENERAL INDUCTION.

FROM this long account of vegetable and animal poisons, which disoxygenate the blood, and from the consideration of the various remedies discovered to overcome their baneful effects, we think we are warranted to draw this general induction, that there is an analogy in their nature, and that substances containing *oxygen* are their real antidotes; and if so, the art of medicine will hereafter be built on the surest foundation, and much improvement accrue to this interesting branch of science. We conceive this part at present in its infant state, and know of no author who has before collected materials to warrant such a general conclusion. It is with extreme diffidence we have presented it before the public, and are conscious that it will meet, as other truths have, with *violent opposition*: but *truth* will always be buoyant, and however pressed down for a season, it must finally and majestically float down the ocean of time, and, if just, take its rank as a very valuable improvement.

THEORETICAL OBSERVATIONS.

SECT. XXXVIII.

OF THE MEDICINAL POWER OF OXYGEN.

IN a work, entitled, *Observations on the Use and Abuse of the Cheltenham Waters*, in which are included, *Occasional Remarks on different Saline Compositions*: by J. Smith, M. D. Savilian Professor of Geometry in the University of Oxford, which was printed in the year 1786. This little publication, says the very ingenious and learned author, was undertaken in consequence of some conversations held during the course of this last season with the proprietor of the Cheltenham water; not with any view of recommending them to the attention of the public; their increasing reputation requiring no such aid; but chiefly in order to correct some errors and abuses in the dispensation of the waters, that had been found to be injurious both to the proprietor, and to those who had occasion for them.

However, though that was my original intention, I was necessarily led, as will appear, into an examination of the waters themselves, and to

explain those peculiarities in their composition, and that particular mode of operation, on which their medicinal efficacy principally depends.

The same train of thinking carried me on to an examination of other saline compositions, which notwithstanding they might not be immediately connected with the subject, appeared to be of so much importance, as I hoped would sufficiently apologize for the deviation; especially as the few hints I had to throw out might probably induce others who were more able, to proceed in an investigation that could not but prove highly instructive and entertaining.

After an admirable investigation of the neutral salts, he enters upon the consideration of *mercury* and *antimony*, and we are happy to give the public this early specimen of true science, and place our own countryman in the rank which he so justly merits.

Many beautiful discoveries, says Dr. Smith, have been made in the course of this century, and much light has, as it were, spontaneously sprung up, and been reflected from them upon some of the most obscure operations of nature. But if the method of induction had been strictly adhered to, by which the connection between the known properties of bodies (especially their mode of operation on the living subject) and the nature and proportional quantity of their ingredients had been regularly observed, instead of accumu-
lating

lating volumes of experiments without application, much greater improvements would have probably been made in every branch of both speculative and practical knowledge ; and the medical profession particularly, would have been *rescued* out of the hands of *ignorance* and *imposture*, into which it seems to be *sinking*, and *restored* to its PROPER SCIENTIFIC DIGNITY.

Nothing would more effectually contribute to that end, than to extend the inquiry to the different metallic compositions ; especially those of *mercury*-and *antimony*, which have been all along the strong holds of empiricism, on account of the powerfulness of their operation, the facility by which they may be compounded, disguised, and preserved, and the small portable compass within which they may be comprehended.

For the philosophical chymist and physiologist, from his knowledge of the various matters, whether salts, sulphurs, or the different kinds of air with which those metals are usually united, would not only be enabled to direct, heighten, repress, and every way improve their respective operations more safely, successfully, and extensively than the blind empiric could ever attain to: but by reducing the whole under a few general principles, the utmost limits of empirical pretensions would be clearly pointed out, and the materia medica purged of an infinity of useless preparations which, through ignorance and artifice, have been multiplying

multiplying ever since the introduction of those metals into use.

To all which might be added the great pleasure attending a practice so scientifically conducted, in which both the diseases, and the operation of the medicines administered for their removal, would be viewed in the light of so many natural processes, and every step gained by that mode of investigation, considered as so much advancement in true philosophy.

In order, however, to the making any progress in so extensive a field, in which we may say with the poet,

“The night’s so dark, so deep the way,”

it would be necessary to set out with all the light, all the information that can be collected from the writings of the most eminent analytical experimentalists of this and other countries.

At present I shall but barely venture to touch upon the subject, only by way of example; and that too rather in the form of *query* than positive assertion.

Among the general principles alluded to, may not the following be adopted?

That the metals are devoid of activity while they continue in their metallic state? and that in order to their acquiring any degree of active exertion, it is necessary they should be previously converted into the condition of a salt, by their
union

union particularly with an *acid*, either in the laboratory or the body; as without that conversion, they would be incapable of solution and uniform diffusion in the fluids, or of impinging with any degree of stimulus upon the solids? but would either remain in the first passages totally inactive; or if capable of circulating, from the smoothness and divisibility of their particles, would glide along without making any sensible impression whatever.

We know that mercury (to which I shall chiefly confine my observations on this occasion), when taken inwardly in its crude undivided state, is found to be totally inactive, however large the quantity that is administered.

Its inactivity, however, has been solely ascribed to the strong attraction between its particles preventing their separate exertion on the stomach, or absorption farther into the constitution. For when the attraction is previously destroyed by the interposition of another substance, the mercury no longer continues in that inactive state.

This objection has, at first view, much seeming solidity in it, but when more attentively considered, I presume it will be found to be more specious than solid. For if the mere separation of its particles was alone sufficient, activity would be the never-failing effect. And the more perfect the separation, and consequent removal of the impediment arising from their attraction, the higher its activity would be raised.

That,

That, however, is by no means found to be the case. For when the particles are separated by a substance that resists the acid, and at the same time is insoluble in the fluids of the stomach, as in the commixture of mercury and sulphur in the formation of *cinnabar* and *æthiops*, the mercury still continues, notwithstanding the separation, in a great measure inactive. And farther, the more complete the separation, the less operative is the mercury; its particles being then more thoroughly protected from the acid, by the universal interposition of those of the sulphur.

The same may be observed of the metallic part of antimony; and, indeed, more or less, of the other metallic bodies, in proportion to their degrees of commixture, or affinity with that mineral.

We find also that other substances, when mixed with mercury, have the same debilitating effect upon it, according to their influence upon the acid of the stomach. Even the common testacea, when blended with mercury, are found, by their absorbing the acid, greatly to impede its action; as in the preparation of the *mercurius alcalizatus*. And we may observe, in general, that the different mercurial preparations of the sulphureous, or testaceous, or alcalescent tribes, are now in a great measure exploded, on account of their experienced inefficacy; though the cause of that inefficacy has never, I believe, been clearly assigned.

From

From these considerations does it not appear highly probable, that the principal advantages gained by the separation of the particles of mercury are, partly by destroying their mutual attraction, and partly by enlarging or unfolding their surfaces (while the whole mass is, by the same means, prevented from escaping too hastily) to give the acids of the stomach, or constitution at large, a power over them sufficient for their conversion to a saline state ; and that from thence their activity is derived?

Is not the probability farther heightened by the practice of the Spanish physicians, who administer the absorbent medicines as the most efficacious for relieving those who are injured by the mercury in the mines?

And is it not raised almost to a certainty by the well known circumstance of the mercury's acquiring so great a degree of activity, from its conversion into a saline state by its union with an *acid* in the laboratory, that the very trifling portion of the metal contained in a single grain of the compound, carries its specific virtue along with it, and diffuses it so effectually all over the body, that if administered only once a day for a few weeks, it is generally found to be capable of clearing the constitution of all its poison, however universally it may have been inquired.

Granting then that mercury derives its activity from its union with an *acid*, either in the laboratory

tory or the body, and that so very inconsiderable a portion of it, when prepared in the laboratory, is found to be sufficient for the total extirpation of the poison, may it not be asked why the practice of loading the constitution daily with so great a quantity, by unction, should be continued?

May not a redundancy of that heavy mineral introduced into the constitution, and circulating all over it, be productive of consequences highly injurious to it?

May it not tend to unhinge the whole system, partly by the pressure proceeding from its own gravity, and partly by its particles attracting the acids every where, and robbing both fluids and solids of an essential ingredient of their composition? and is not this confirmed by the enervating effects it is known to have on those who work on it?

May not the perpetual absorption of the *acid*, and consequent conversion of the mercury to a saline state, while there is a single particle of it remaining in the constitution, be the means of keeping up an unnecessary ptyalism, long after the poison had been extirpated? or by falling on the bowels, of bringing on a violent catharsis, when the constitution had been so far reduced as to be unable to bear any such evacuations?

Does not the ptyalism, in consequence of that method, rise sometimes to an alarming height, in spite of the most careful attention: so as to call
for

for every means of suppression, by opiates, intestinal and other evacuations; while the poor patient is all the time labouring under such a multiplicity of distresses, that life itself is scarcely a sufficient compensation? especially as, when protracted, it often brings along with it a train of calamities, the concomitants of a broken constitution, that, like so many harpies, imbitter all its comforts?

Upon the whole, then, can any reason less than that of absolute indispensable necessity, justify the continuance of a practice that so often gives rise to such a series of calamities?

It has, indeed, been objected to the other method, that the saline preparations are apt, in many constitutions, to operate with too great violence upon the stomach and bowels.

But that violence may generally be prevented or suppressed, either by plentiful dilution, in the manner mentioned of the nitrous salt, or by combining the preparation with such ingredients as are proper for allaying irritation, and at the same time determining its action to some of the principal emunctories of the body. *Of this I have had more frequent experience than usually falls to the lot of the regular bred physician, occasioned by my reading public lectures annually, for many years, in the university, on anatomy and chemistry; and at times, for the sake of those who had chosen the medical line, on the theory and practice. And I can truly aver, that I do not recollect my ever being obliged to have recourse*

to the too frequently injurious method of unction, in any one instance whatever.*

That

* After a purge, the following solution is to be given in this manner:

R. Hydr. muriat, gr. 4.

Spir. vin. tenuior. unc. 2.

Solve, et solutionis detur cochleare minimum bis de die ex decoct. hordei cyatho, vel superbibat decoct. sarsaparil. lib. dimid.

R. Opii purif. gr. 10.

F. pil 5, cap. pil. 1. horâ somni sing. noct. Or,

R. Tinct. opii, gut. 25.

Aq. Cinnam. unc. $1\frac{1}{2}$.

Syr. papav. errat. dr. 1.

F. haustus noctu dormituro detur.

That is, take of

Muriated mercury, four grains,

Spirit of wine, two ounces.

Dissolve, and let a tea-spoonful of this be given twice a day in a cup of barley-water; or let him take with it half a pint of the decoction of sarsaparilla.

A pill, containing two grains of opium, is to be taken every night, or the following draught;

Take of

Tincture of opium, twenty-five drops,

Cinnamon water, an ounce and a half,

Syrup of wild poppies, one drachm.

For a draught to be taken at bed-time.

Dr. Thornton has found the following new medicine very efficacious:

R. Hydr. muriat. gr. 2.

Decoct. Cinchon. unc. 7.

Tinct. Cinchon. comp. unc. 1.

Cinchon pulv. dr. 1.

F. mist. capt. coch. larg. horâ 11. matutin. horâ 6, vesperè, et horâ somni, cum pil. opii.

That

That method may be convenient within the walls of an hospital, or when the patient is no otherwise to be regulated than by disabling him from becoming irregular; or, finally, for those who, totally ignorant of the animal œconomy, and the first elements of science, only know that mercury is the antidote, and that if but enough is thrown in to raise the *ptyalism* up to a certain daily measure, for a certain time (in which, however, the practitioners are often divided; some making a pint, some a quart, and some more, the standard) a cure will surely be effected. Not foreseeing, or regarding the ruinous consequences to the constitution, which might have been prevented, and the cure as surely effected, by the *thousandth part* of the antidote administered in another and more judicious manner.

Upon the whole, mercury appears to be a simple homogeneous fluid, as insipid and inodorous, and as devoid of any stimulating agency, as the element of water itself. And though it may be occasionally blended with other matters, and

That is, take of

Muriated mercury, two grains,
 Decoction of bark, seven ounces,
 Compound tincture of bark, one ounce,
 Powder of bark, a drachm.

For a mixture of which, take a table-spoonful at eleven,
 at six, and at bed-time, with an opiate pill.

A precipitation and decomposition here take place, and the new compound has less virulence than the common solution, and, perhaps, the same, or superior, efficacy.

seemingly

feemingly lost, yet, like water, it probably continues unaltered; as on mere separation, it always re-appears, in the same manner with water, in its own original form.

Viewing then mercury in the light in which it has been here represented, the question arises, what are the qualities to which its *specific virtue* is to be ascribed?

If on a subject involved in so much obscurity I might hazard a conjecture, I should be inclined to ascribe its virtue to its great specific gravity, and its endless divisibility, operating together. As of all the productions in nature, a substance so eminently endowed with those qualities, and rendered diffusible in the animal fluids, by its union with an acid, appears to be the best calculated for clearing the constitution of all extraneous noxious matters; provided they are to be eradicated, either by decomposition or expulsion.

For in consequence of its gravity, the saline compound must circulate with a considerable degree of momentum; and by its divisibility, the mercury must accompany all the particles of the *acid*, however minutely it is dissolved, into the remotest recesses of the system, and so assist them in the removal of any obstructions that may have been formed in their way.

The mercury, therefore, is to be considered rather as an *auxiliary* than a *principal*; and as merely an *assistant* in carrying the particles of the *acid* forward, with an impetus sufficient for preventing
their

their being dissipated, or retarded, in the course of the circulation.

In conformity with the hypothesis I have now ventured to advance, and as a strong confirmation of its truth, we find that the comparative efficacy of the mercurial preparations, does not depend on the quantity of mercury, but on that of the *acid* in their composition.

Corrosive sublimate, for example, has considerably less mercury in a given quantity of the saline compound than calomel. But as it has much more of the *acid*, it is accordingly found to be the more *powerful antidote*. And it appears, from what we experience of the mercurial preparations, in general, to be highly probable that, according to their being *more or less charged with the acid, they would be found to prove more or less efficacious*; provided, always, the constitution was enabled to bear the stimulus, and but enough of the metal was left in the preparation, to answer the propulsive purposes above-mentioned.

Next to the mercurial preparations, those of *antimony* are justly entitled to the attention of the physiologist. Not only as being the second great hinge of empiricism; which is ever obtruding them upon the public, in a multiplicity of different disguises and pretensions that, by proper investigation, might easily be exposed, and the whole reduced to a few simple forms: but also on account of their own intrinsic merit. But if

we

we except the specific virtue peculiar to mercury, which may, in the present state of the world, be considered as the necessary instrument for preserving the human species from annihilation, the antimonials ought to stand uppermost in the scale of utility; as their salutary operation extends to a greater variety of complaints, both chronical and acute, than any other metallic composition whatever.

In this enquiry into the principles of action of the antimonial preparations, the above doctrine will appear to be strongly confirmed by its being circumstantially illustrative of all the particulars of their operation.

For in the first place, whatever substance is known to weaken the union of the metal with an *acid*, is found to impair the action of the compound: and the calx that is insoluble in the acid of the stomach, is found to have no action at all.

After the antimonials, the same mode of enquiry may be extended to the *other metallic compositions*, with great advantage. But as the nature of it has been, I hope, sufficiently illustrated, by the examples I have produced from the two principal orders of saline compounds (the neutral and metallic salts), I do not propose to carry it any farther at present*.

* This may be said to be the dawn of true science. In the next section we shall see the effulgence of the brightest day of medicine.

SECT. XXXIX.

THE SAME SUBJECT CONTINUED.

Aëra nunc igitur dicam, qui corpore toto
 Innumerabiliter privas mutatur in horas.
 Semper enim quodcumque fluit de rebus, id omne
 Aëris in magnum fertur mare, qui nisi contra
 Corpora *retribuat* rebus recrectque fluentis,
 Omnia jam resoluta forent, et in aëra versa.
 Haud igitur cessat gigni de rebus, et *in res*
Recidere assidue, quoniam fluere omnia constat.

LUCRET.

THE following is an essay on the subject of *oxygen*, read by that celebrated chemist and physician, Mons. Fourcroy, in August, the sixth year of the republic, in the school of medicine at Paris, which, the year after, was published in the twenty-eighth volume of the *Annals of Chemistry*.

Of all the discoveries, says Mons. Fourcroy, which has had influence on the art of healing, since the birth of experimental philosophy, there is none which has promised so many useful results as that of the elastic fluids.

I do not here intend to confine myself to the consideration alone of those several substances called gases, and their effects on the animal œco-

nomy, a consideration which, of late, has so much occupied the attention of the faculty, and created so much delight by the simplification and justness it has produced in our notions, and the generalizing of facts. Nor do I mean here to consider the progressive discoveries of different gases, which have been conjectured to contain great medicinal power, and this opinion afterwards as readily abandoned; nor to trace the almost antiquated history of vital air, at one time considered as beneficial in consumptions, and, anon, as a body which could only accelerate the destructive and fatal progress of that disease.

So long as the discoveries of the elastic fluids were only insulated facts, so long as physicians, confounded, as it were, by their singular properties, considered each independantly, or were only occupied to determine their respective differences, medicine could only derive some little improvement, some slight change. But the moment that, by an assemblage of multiplied facts, the theory of elastic fluids entirely altered the face of chemistry, when by a severe and more philosophic examination of the chemical phenomena than had ever before been made, a new and important revolution was produced, medicine, as all the other parts of natural history, could not fail to receive bright and unexpected lights. Before this remarkable epoch, before
those

those efforts of genius, which justly placed Lavoisier as the first chemist in the age, before the united labour of those who have trod in the same glorious path, it was admissible for physicians to rest indifferent upon the improvements which accrued, or even to err in their too hasty application of this science to their art. But the day is now arrived which opens a new career to the whole of physical science, that those thick clouds, which obscured the functions of animated bodies are chased away by the brightness of the light of pneumatic philosophy, when it cannot be disputed, but that medicine, by the accession it has received, has made an advance, which was in vain attempted by experimental philosophy, by mathematics, and all those arts which were enlisted into its service. I do not in the least hesitate to pronounce, that modern chemistry has done more in twenty years for medicine, than all the united labours of preceding ages. Only contemplate before this period, what has been written on the motion of the blood, the blood itself, the nature of respiration, on animal heat, perspiration, digestion, and irritability; examine the subtle and ingenious hypotheses on these subjects, which appear, at this time, so degrading to the human reason; let the immortal Haller be tried by this test, whose facts are so valuable, but whose hypotheses are together a mere mass of dark and futile reasonings, and we shall see how much

we are indebted for the new lights thrown in by chemistry, and how much we have yet to expect!

It is now no longer permitted to the physician to remain a mute and insensible spectator to the impulse already given to the science of the animal œconomy. No professional man, if he is at all interested in the advancement of his studies, if he is at all animated with a proper zeal for the progress of medicine, can any longer neglect to instruct himself in the conclusions of modern discoveries. The cold statue-like insensibility of some, the affected indifference of others, the sneer uttered by this man, the irritated self-love of the other, the attachment of mankind for the doctrines of their fathers, the hatred of novelty, prejudices of every kind, all the mean passions which glide into society, playing their part on the theatre of civilized life, are to be found also in the career of science; the excesses which these have produced, the pleasantries which they give rise to, the sarcasms, or epigrams, with which they arm discourse, the ridicule which some endeavour to throw on the inventors, the epithet of innovators, of which they are prodigal, all this may retard, for some days, or even for some years, the progress of new ideas, but truth will overcome every obstacle; she cannot be frightened either by the clamours of envy, or the resistance of prejudices, or by the opposition of ignorance. She is the rock against which the im-

potent

potent billows of human passions are broken, When she strikes with her bright light, spirits sufficiently elevated to support her splendour, she soon inspires them with the necessary power to proclaim her dictates with confidence, so as finally to establish her rights, in vain rejected. The cry still vibrating in our ears against the circulation of the blood and antimony, did not prevent the discovery of Harvey from taking rank among the number of demonstrated truths, and antimony from being accounted one of the most noble of our medicines, when skilfully administered.

It will turn out the same with the new chemical discoveries, when applied to illustrate the phænomena of the animal œconomy. Its career, so gloriously begun, will never stop; every thing announces a remarkable advancement in its progress begun in our time, and aided by our efforts. If mean talents, lethargic apathy, or irascible self-love, shall again endeavour to retard its steps, their opposition shall vanish, especially by the energies of the rising youth. Strangers to the tumultuous passion of envy, the new generation, so eager to acquire knowledge, shall be the witnesses and actors in the great *medical revolution*, of which we have only shewed the necessity, and laid the foundation-stone. Like to those great bodies, whose mass and velocity carry every thing before them that comes within the sphere of their action,

action, obliging them to obey their movements, so *the revolution of chemistry*, after having shaken the very basis of the former physical science, will extend its influence over the whole science of nature, and no part will receive a greater and quicker change than the art of healing, which forms so essential a part of natural history.

People have already laid to my account so many hazardous opinions, have made me say so many things, which I have never uttered, that I have thought it necessary to state exactly my PROFESSION OF FAITH, to pronounce it amidst my brethren, and to declare to them with precision, my sentiments respecting those new ideas, which, in reality, sprang from me, although they may have received some modifications since their birth. These are, I do not deny it, many of them my own offspring, but adopted by too great a warmth by some physicians, who have kindly undertaken to represent them as their own, and introduce them too early into the world, it is not impossible, that deformed by some of these obliging retailers, they may have lost some of their primitive features. It is time, therefore, that I recal them to their paternal stock, that I examine what they have acquired, or lost, and again charge myself with their education, if I wish in the end not to expose myself to regret ever having given them birth.

At

At the sound of the word *oxygen*, I can readily conceive the effect that this must have on the different classes of mankind.

One circle there is, whom the word *oxygen* affrights, because they have never understood it, and think that the shortest and easiest road is to deny its existence.

Another, angry at a word founding ill to their ears, without formally denying the existence, refuse it at least all its properties, or those chemical characters, which Lavoisier and his followers have discovered.

A third, more agitated than the rest, murmur at the brilliant part which this plays, and at the oblivion of that principle, which by the mere dint of imagination they made into fixed fire, entering into the composition of bodies under the title of phlogiston.

A yet more numerous circle, and seemingly more temperate than the last, has, however, all the disposition to become the most furious. But this did not arise before *oxygen* was introduced as a medicine, before to it was attributed the prerogative of action, and little or nothing to the basis, to which it is found attached. These, astonished to see this intruder admitted as a medicinal matter, examine every feature of its countenance, turn it on every side, and behold nothing but a phantom, which arises from being unaccustomed to its presence, and from not following its steps
from

from its appearance in the world in the month of August, since which time, it has been continually claiming fresh attentions from the philosopher.

I need scarce mention another circle of people filled with indifference and apathy, who take no part in this or any other novelty; this crowd, inauspicious at first, ends by being servile, and are to be esteemed neither as friends or foes.

In such a medley, how am I, continues Monsr. Fourcroy, to conduct myself with prudence, with that wisdom, with that dignity, which belongs to so important a subject?

Ought I to attack the first argument of my antagonists, and endeavour to persuade them of the existence of *oxygen*, in order to make them see that it possesses the most energetic medicinal virtues?

Ought I to assemble all the facts which prove that those who are averse to believe its virtues, employ it all the while they are denying its existence, and hitherto without doubting of its efficacy?

Ought I to expect that those men who so gratuitously, and with so much good will, admitted of *phlogiston*, would admit of a real existence, weighty, and capable of combination, and exhibiting effects very sensible on the animal œconomy?

It is, without doubt, a difficult task; but I feel myself placed under circumstances too imperious

rious

rious not to attempt it. I feel a sufficient hardihood not to despair of success, if I can but obtain a short silence over the prejudices and passions; for without flattering myself that I can speak louder than my adversaries, I am persuaded that my reasoning will be better from the goodness of my cause.

I will declare, therefore, with the purest simplicity, how the first ideas on this subject arose in my mind, more than fifteen years ago, what, after experience, fortified my opinions, and how far I have been able to push them. Nor will I conceal where they are weak, as I would not exaggerate what has strength, for I have no other interest in view than the progress of science.

All I have to request, therefore, is a careful attention, and not to lose the chain of facts; for the subject is new, and difficult, and, I doubt not, but that I shall be able to shew you a new road in Therapeutics.

When Berthollet, following at that time the footsteps of Maquer for theory, whilst he had to pursue the first discoveries of Scheele, which he was called upon to confirm, to enlarge, and afterwards to attach in a manner so brilliant to the pneumatic doctrine, explained in 1779, and in 1780, the *causticity* of the metallic salts, by their greediness to seize upon the *phlogiston* of animal bodies, it was then that he shewed us, that a dissolution of corrosive, sublimate (muriated mercury)

mercury) in water, put in contact with flesh, was precipitated in the form of mild mercury (calomel), whilst the animal matter was rendered friable, at which time I could not fail to perceive, that what he attributed to *phlogiston*, was really due to *oxygen*, but in an inverse manner; that is to say, that the corrosive sublimate *yielded* to the animal matter its *oxygen*, instead of *taking* from it its *phlogiston*; and it was thus, in effect, that Berthollet himself explained the action of metallic salts on animal matter, after he had solemnly, in 1785, renounced the theory of *phlogiston* as an imaginary principle, which could no longer be supported after the discoveries made by Lavoisier.

It was at this epoch that I began to present in my course, as a *positive fact*, that which I had announced before only as an *hypothesis*. I then demonstrated, by experiments, that the metallic caustics, the oxyd of arsenic, the red oxyd of mercury, the grey oxyd of silver, literally burnt animal substances, that these suffered their *oxygen* to be taken from them, and hence these oxyds repassed to their metallic state.

I explained about the same period the action which grease heated has on metallic oxyds, as explanatory of mercurial ointments; for it was natural to consider, from the fat so diffused in animal bodies, as a substance very fit to throw light on the nature of the alteration which animal

mal

mal substances experience from the action of metallic caustics.

Soon after I pushed this idea still farther; and when making my scholars observe, that the energy of caustics was nothing more than their extreme medicinal power, I began, in the years 1785 and 1786, to hint that the action of some other medicine might very probably arise from the *oxygen* which entered into their composition. The study of the properties of that principle, which I then was pursuing with ardour, made me behold it playing an immense part in chemical phænomena. Vital air, when it was precipitated from the atmosphere, into combustible bodies, by the effect of combustion itself, I shewed it as characterised in its combination with burnt bodies, as a principle of their taste and sharpness, offering to the studious youth the examples of charcoal, of sulphur, of phosphorus, almost insipid, which become sour, acrid, and even caustic, by the addition of *oxygen*; the examples also of arsenic, of copper, of mercury, of antimony, having only a weak or no action upon animal bodies in their metallic state, and assuming the quality of irritants, purgatives, emetics, and even corrosives, according to the quantity of *oxygen* arising from the different pharmaceutical processes to which they were subjected.

THUS I ROSE, STEP BY STEP, FROM EXPERIMENT TO EXPERIMENT, FROM MEDITATION
TO

TO MEDITATION, TO CONSIDER THE PURGATIVE, EMETIC, STIMULANT, AND RESOLVING QUALITIES, AS THE FIRST DEGREES, OR PROGRESSIVE MARKS OF A GRADUATED MEDICAL SCALE, OF WHICH INERTIA, OR WANT OF POWER, WAS THE MINIMUM, AND CAUSTICITY DESTRUCTIVE OF ANIMAL ORGANIZATION, THE MAXIMUM.

The objections which were raised, so far from stopping the progress of these new ideas, only tended to accelerate their career, by the readiness and assurance of the answer which chemical experiments afforded me.

Water, of all the bodies the most oxygenated, since it contains o. 85 parts, has only a very feeble medicinal virtue, because the principle which fixes the oxygen, the o. 15 of hydrogen, by which it is saturated, *retains* it with too much force to allow it to act on animal matter. If this were not the case, instead of its offering to men and animals a present, which quenches thirst, and supports existence, nature would only have given in water an inflammatory and destructive liquor, more disorganizing even than those powerful mineral acids, of which chemistry has known how to produce the separation of their compounds, or to make the compositions.

What I conceived to be the cause of the want of medicinal power in water, I simply applied to every body naturally or artificially oxygenated,
which

which likewise did not exert, or very feebly, any medicinal power over living animal matter, although possessing the presence of oxygen.

Thus there was gradually formed a second axiom concerning the medicinal power of oxygenated substances, namely, *that these substances are medicines, or exert a sensible effect on our body, inasmuch as they contain oxygen, and PART MORE OR LESS READILY WITH IT to animal matter, with which they come into contact.*

This second consideration was not less useful than the first, since it threw a great insight upon medicinal action in general, of which we may justly remark, that a slight taste, either pleasant, or disagreeable, or, in a word, that alimentary sapidness is the *minimum*, and *causticity* the maximum.

It was this that made me see that the acid, or metallic caustics were all comprised in the class of combustible burnt bodies, which holds the least its *oxygen*, and which imparts it the most readily to animal matter, such as the nitric acid, the oxyds of gold and silver, and the red oxyd of mercury.

This alone can explain how an oxydated body is active in proportion as it contains more or less of oxygen, how, for example, a red oxyd of mercury, which is caustic, is but purgative or alterative, when it is a grey or white oxyd; for it is of importance to consider here that chemical principle, become so important at this time,

that the attraction of bodies in a state of combination, is in the inverse ratio of their saturation; that is to say, the more bodies, in their union, are remote from the quantity which ought to saturate them, the more they adhere together. Thus, the red oxyd of iron, or a saffron of Mars, is more active than the black oxyds of iron, or martial æthiops, because that the portion of oxygen which it contains *above* its black oxyd, *adheres* less than that which constitutes the black oxyd.

This second axiom contains a series of propositions which flow so naturally, that never in any essay of medical theory, did explanation so clearly elucidate facts, never did light shine brighter on therapeutics. I will only relate some few of the principles of which I am speaking, and they flow so natural, that it requires scarce any attention to understand them. So true is it, that medicinal property arises from the presence of *oxygen*, and is in direct ratio of the attraction which animal matter has for that principle, and the rapidity with which it can quit the compound, of which it is a part, to unite to those organized substances, that water, as being oxygenated hydrogen (hydrogen being of all bodies that which has most affinity to oxygen), has the weakest medicinal power, that the carbonic acid, where *oxygen* is retained by carbon, which has a force of retention next to hydrogen, is only slightly acid, and has but a small medical property; that phosphorus, which

holds

holds a third rank in its affinity for *oxygen*, forms, by its combination with it, the phosphoric acid, which is very far distant from the acrimony of sulphuric acid, whose radical, the sulphur, retains its *oxygen* more feebly than phosphorus; and that the nitric acid, the most powerful of all the acid compounds, is united in its composition of azote saturated with *oxygen*, by a tie so weak, that the *oxygen* which separates from it with so much rapidity, seizes almost instantaneously the organized bodies which it touches; so that, when it is concentrated, it burns and destroys them at the very instant even it comes into contact with them.

The same series of effects, dependent upon the attraction of oxygen, is found in the metallic oxyds, and in their dissolution. All the oxyds, formed of such metals as RETAIN *oxygen* the least, are violent caustics, as I have elsewhere shewn. Those, on the contrary, which HOLD FIRMLY that principle, those which do not permit it to be taken up by animal substances, are either little energetic, or absolutely inactive, as are the grey oxyds of zinc, the black oxyd of iron, the oxyd of tin, &c.

However probable these assertions might appear, however in unison with the experience of physic, they would have been reckoned by me but simple and very probable hypotheses, they would not have sufficed to have formed a sure doctrine, if I had not found out the means of confirming

confirming them, of proving them to the satisfaction of men the most difficult to convince, by observations, or experiments, the most exact. The important discoveries of Berthollet of the difference of corrosive sublimate and calomel, the former more oxygenated than the latter; and respecting the corrosive sublimate, or superoxygenated muriat of mercury, passing to the state of calomel, or of simple muriat of mercury, when treated with an animal substance, was a ray of light; but this was only an experiment made with a dead animal substance, and I wished for proofs, that the same thing took place in living bodies. Although it was not difficult to try the experiment with a living animal, although I believed it would turn out conformable to the opinion of Berthollet; that is to say, after having given some grains of superoxygenated muriat of mercury to a dog, we should have found this salt in the viscera afterwards in the state of mild muriat of mercury, I did not make the experiment, because of its cruelty, but more so, because we had other proofs. I have always observed that which Lorry has already noticed it is more than thirty years ago, that the red oxyds of iron, which is prescribed to patients under the name of Saffron of Mars, passes from the intestines in the state of a black oxyd, which tinges the fæces of that colour; which could not happen, except that the portion of *oxygen*, which is beyond the black
oxyd

oxyd, or which forms the O,27, oxydation of the metal, is taken up by those organs along which it passes; and it is too evident, to make it necessary for a long explanation, that it arises from that portion of *oxygen*, disengaged, or slowly absorbed in the whole length of the intestines, whether taken up by the humours which lubricate that canal; or by the fibres themselves, that a great part, at least, of their tonic, astringent, and stimulant effect, is to be attributed, when these are employed.

It has been seen a long time, that the yellow, or red, oxyds of mercury become black by the contact of animal matter, and this effect takes place in the intestines; and it is probable, that from hence arise the globules of mercury which are said to have been found in the cells of the bones of those who have made a long abuse of mercury.

The application of all the metallic caustics, on ulcers, and cutaneous affections, does not leave any doubt respecting the reduction of oxyds, and the passing of *oxygen* into animal substances, which accompanies, determines, and explains their action. We see it evidently in the fuming muriat of antimony, or butter of antimony, the liquid nitrat of mercury, or mercurial water, the melted nitrat of silver, or lapis infernalis, which leave upon the scars which they form, a coating very observable, having the appearance, and sometimes even a metallic splendour.

Another order of facts, which we owe to the lights already thrown upon medical practice by the pneumatic doctrine, and which comes to the support of the theory of which I speak, embraces every thing which relates to the new discoveries, whether to destroy the terrible effects of caustic poisons, or to remedy their slow ravages which they draw after them, when one has had the good fortune to escape their first dangers.

Navier, in recommending the alkaline sulphurs (the livers of sulphur) for the poison of arsenic, verdegrise, and corrosive sublimate, knew well, that in decomposing and absorbing these acrid metallic bodies, the sulphurets which were formed, had not the causticity of these poisons; but he did not know what real advantage might be derived from the natural or artificial sulphurous waters, whose hydro-sulphur, in taking away a portion of *oxygen* from the metallic oxyds, removed at the same time the cause of their poisonous acrimony; he did not know that iron alone, in an extremely fine powder, is equally proper to destroy the causticity of the metallic salts of copper, mercury, and arsenic, in taking from them, by their strong affinity for this principle, the *oxygen* which renders them caustic.

Berthollet himself, in discovering that useful property which the decoction of bark has in obviating the violent effects of an over-dose of the
tartrite

tartrate of antimony and potash (tartar emetic), was, as yet, ignorant that it was in separating the *oxygen* from the oxydated metal, that the extract of bark robbed it of all its activity; and it was sometime after this discovery, that I noticed that strong tendency which the decoctions of bark have for *oxygen*. Thus, whilst researches after *counter-poisons* make, without ceasing, a progress, for the advancement of chemistry, that beautiful science carries, at the same time, its torch to illumine the obscurity of the animal functions, and of the action of remedies.

From all these happy and well authenticated effects, which I have just been relating, there manifestly appears a phenomenon, which we know to exist at the present time in a great number of chemical operations.—*Oxygen obeys its attractions; it either quits a body to convey itself into another, or it so divides itself as to make an equilibrium of two substances, of which one assumes of this principle more or less than the other.*

We employ, to produce this salutary equilibrium, matters, which not only have a greater affinity for *oxygen* than those we would wish to desoxygenate, or unburn, but which possess also the salutary property of removing their causticity, and of retaining, at the same time that burning principle with sufficient force to hinder its powerful action on our organs; that is to say, which obliges it to rest within itself, although

oxygenated, and remain in an inactive state with respect to us.

Such is the simple process, now so easily comprehended, by which chemists, in treating of corrosive sublimate with iron, copper, tin, or antimony, withdraw from the mercury, that *oxygen* which rendered it so caustic, and infuse into the metal which effected its decomposition, the cause of all its terrible effects.

Such is the remarkable circumstance of the participation of the *oxygen* by running mercury, which, by withdrawing it, by the acid alone of trituration, from the corrosive sublimate, losing at the same time its metallic form, so softens the acrimony of the other, that instead of being a caustic poison, it is no longer any more than a simple purge.

Such, moreover, is that very ingenious process of Mons. Vauquelin, who forms in a few minutes martial æthops, by heating red oxyd of iron with iron filings; this last withdraws a portion of its *oxygen* from the red oxyd, and makes the whole pass, by the equilibrium which is soon established betwixt the two portions of iron, into the state of one uniform black oxyd.

In the year 1790, I announced in the journal which I then managed under the title of *Médecine éclairée par les Sciences*, that, by the experiments which I had made, the oxygenated muriatic acid seemed to have the power of over-

coming

coming putrid miasms, that it therefore might be employed to destroy infection, and considered in that point of view, it would one day or other render to man the greatest services. I proposed it to the anatomical theatres, as a substance that would prevent putrefaction, and at the same time I mentioned that it would serve to destroy the poison accidentally introduced by a cut, whilst opening a putrid body, and I also proposed it to inoculators, to try whether it possessed any power to correct the variolus poison, a position which Mr. Cruickshank of Woolwich first put to the test, and he found, that inoculation would not succeed when the matter was mixed with this acid, the same matter which perfectly succeeded in every instance without this mixture. I foresaw equally well, that this powerful reagent, which has, from the *oxygen* with which it is surcharged, an action, so quickly oxydating every combustible body, might be employed also to destroy the virus of hydrophobia, in the wounds in which it was inserted, and although experience has not verified the assertion, yet to such men as are well acquainted with modern chemistry and the action of *oxygen*, I know they readily foresee what would be the result*.

It having the property to destroy all smell, I

* That *oxygen* was the general antidote to animal and vegetable poisons, was first taken up by the author of Medical Extracts, and had been in print long before Mons. Fourcroy published this paper.—Vide page 418.

resolved to try it in cancer. My friend Monf. Hallé, will eafily recollect the fuccefs of thefe trials, with a woman who had a large cancer in her breasts. We obtained an immediate change by the application of linen dipped in the liquid acid, the colour of the wound became better, the fœtor lefs offensive, and the difcharge lefs ferous, which at firft infpired us with hopes, but in two other trials we appeared to augment her pain, and it was therefore defifted from.

It was in the year 1790, that after fpeaking in my lecture at the Lyceum of the anti-venereal power of mercury as depending upon *oxygen*, Monf. Rouffille and Vauquelin propofed to make trial of oxygenated muriatic acid upon two perfons vifibly affected with the venereal virus. But the extreme prudence with which they conducted the trial, and the inconfancy of the patients, which fo often proves an obftacle to the accuracy of experiment in the healing art, did not permit them to difcover whether it acted as an anti-fyphilitic, as I had predicted, but they found that the appetite was fenfibly augmented, their urine more abundant, and without colour, their faces alfo without colour, which is at any rate fufficient to fhew that it has a powerful action throughout the whole frame.

A remarkable epocha in the annals of history, the French Revolution, fo terrible in its effects in the exterior, and fo glorious to the Republic in the interior, foon furnished me with a fair opportunity

portunity of making an useful application of my ideas respecting the medicinal virtue of *oxygēni*. Quicksilver became at that time exceedingly rare. I proposed to government the practicability of substituting several oxygenous substances for the mercurial preparation as a cure for the venereal disease and the itch, which required so frightful a quantity of such preparations in the military hospitals, but my advice was not followed, because, without doubt, the officers of health, who superintended, had too many scruples respecting the efficacy of the measures I proposed, whilst their confidence in mercurial remedies was founded upon a long experience; I therefore determined upon developing my views, and extending my ideas upon this subject in my public lectures, persuaded that they would take root in the minds of my hearers, and that they would thence find that degree of acceptance and support, which could alone give them the utility of which I believed them to be capable.

It was in the course of the fourth year, both in the School of Medicine and in the Museum of Natural History, that I insisted more strenuously than I had before done, upon this new doctrine, and on the advantage which promised to accrue from chemistry to the healing art.

I particularly insisted upon the citron ointment, the unguentum hydrargyri nitrati, of which I knew there was immense consumption for the
itch.

itch. I shewed that the oxygenation of the lard by the oxyd of mercury and the acid of nitre, ought to be considered as the chief source of its virtues, and that it was, perhaps, possible to do without the mercury in that preparation; that the nitrous acid alone appeared capable of bringing the lard to that state of oxydation, when it would acquire well-marked medicinal qualities, and there was every reason to be persuaded, that in that state, it would fulfil without mercury the conditions of the citron ointment. *Monf. Aylon*, being present at the lecture, rapidly caught up the idea, and informed me of the project he had resolved to try, viz. to examine into the effects of the nitric acid upon fat, and to discover the properties it might then possess. His first essay, conducted with a sagacity and prudence which I knew he possessed, had a success even beyond his expectations, and he proved that the oxygenated lard was both antipforic and antisyphilitic.

He employed in conjunction with it the nitric acid, which had been used with the same view by several English physicians after the example of their countryman *Mr. Scott* *, who first discovered its virtues in India. The success of this double method of external and internal application has not been disproved since, and the report of the commission of the School of Medicine, who were charged to

* Vide Sect. xxxiv, page 388.

try and examine into the new experience, will evince, better than any thing else, how the first views which I had given of this subject have been raised by the care, the genius, and perseverance of Mons. Alyon, who, as may be well imagined, according to all former examples in medicine, has had, and will still have, *obstacles* of more than one sort to conquer. Whilst my effort began to produce some fruits in France, learned strangers, so far from being idle contemplators of these new ideas, adopted them, and cherished them with more eagerness than even the French physicians. The philosophers who have already particularly distinguished themselves in this career, which I congratulate myself with having first opened, are Mons. Humboldt, who combined at Berlin, in an ingenious way, the new facts of Galvanism*, with the efficacy of

* There is scarce any need to mention, that true Galvanism has nothing to do with the *Metallic Tractors*, the contrivance of one Dr. Perkins, an American, hence its present just appellation *Perkinism*, which is a rank imposition on common sense and the public. In the present dreadful imperfect state of medicine, an easily deluded multitude will often be made the dupes of designing men. A notorious mountebank was once seriously asked by a physician, "*How he could make his lies answer?*" he pointed to a crowd, and enquired "*How many wise men there were among them?*" "*One out of ten,*" was the Doctor's answer; "*Well, then,*" says the other, "*give me the nine, and you shall have the tenth.*" These, in consequence, ride in their carriages, and have their country villas, whilst honest men starve; but the evil of *quackery* is not *alens* the discouragement of an

of chemical agents upon the organs of living animals, cleared by its bright light the phœnomena attending the functions of vegetables and animals. Dr. Beddoes and Dr. Thornton, English physicians, examined and ascertained with care the action of different elastic fluids in diseases. Messrs. Rollo and Cruickshank, in studying in the same country, the nature of a malady almost unknown, although much more frequent than one would have supposed, the diabetes mellitus, assembled, the better to ascertain its nature and causes, every thing which the new discoveries in chemistry presented them for their subject. Their ingenious theory was soon confirmed by the success of the new remedies they employed. Their work, too little known in France, but with which *Mons. Alyon* is about to enrich the French school, is one of those scientific monuments, which proves how much assistance medicine has to expect from chemistry.

It is now evident by what a series of facts, I was led to discover in oxygenated substances, qualities which, until this period, were considered as occult, or insensible to human wisdom. Thus have I given the chain of my ideas, derived
 useful body of men, but as being the hot-bed of imposition, it begets a general incredulity, brings an odium upon every one who attempts any improvements even in his own art, and as it *legally* robs the community of their money, it at the same time deprives them of what is far more valuable, their health and lives.—IS THIS EVIL NEVER TO BE CORRECTED?

from

from the new discoveries in chemistry, and endeavoured to detail some useful improvements, which may be, or have been derived, to the healing art, and which promise the happiest result. But whilst I am announcing with confidence the hope of a speedy and glorious REVOLUTION in the healing art, I cannot refrain from exposing to view that petulant activity, which instead of merely kindling genius, sets the brain on fire, that unfledged fondness for innovation, which would destroy all that we possess, before any thing is set up in its place. I deprecate that sagacity which would explain all the phœnomena of life and disease upon chemical principles. In a word, I desire, without doubt, a REVOLUTION in the theory and practice of medicine, I invoke it with my vows, I have announced it for more than fifteen years past in my lectures, I have proclaimed it, one way or other, in all my works, I will aid it with all my powers, with all my faculties; but I desire a REVOLUTION, wise, slow, and sedate, I do not burn the ancient works with Paracelsus; I do not break any pharmaceutical vessels; I do not proscribe all former knowledge; on the contrary, I would preserve all that does exist, and would even acknowledge that I prefer an empirical practice to the present infancy of chemical medical science. For there are men who desire to build an edifice* before they have col-

* Vide note *, page 461 of this volume.

lected the materials. It is, doubtless, that the animal system in which *oxygen* plays so great a part, may be in fault from either too much or too little of this animating principle; that at the same time it is the source of animal heat, it is also of irritability, and vital and muscular motion; that in applying it either internally or externally, whether in the form of air or otherwise, it, in general, excites the action of life; that we ought to admit of two classes of powerful remedies, the *oxygenating* and the *difoxxygenating*, that the first augments all the activity, the heat and circulation, the force and mobility of the system, whilst the second retards all these circumstances; that often in the prudent empiricism of good practitioners, which supplies the defect of philosophic principles, the remedies prescribed, act according to one or other of these powers. But if these assertions, which appear so well founded, due to modern discoveries in chemistry; if this salutary art can already promise itself more important assistance, and a more steady light than has yet guided it, how many things has it not still to desire? How many important problems has it not to propose to chemistry? How many solutions of difficulties has it not to expect, in order for medicine to abandon the path it has hitherto followed, in order to consider all its old foundations as so many errors, and so many chimeras? What a distance there is yet between the first truth
which

which we possess, and that system of facts which is necessary for the formation of a complete doctrine, an entire new system of medicine!

Thus the impulse which I have announced has occurred: and there is no danger that it will either be stopped or diminished. The only obstacle which this MEDICAL REVOLUTION can experience, arises from the fear of its proceeding with too much rapidity, and from its being injudiciously accelerated, by the too fertile imagination of too ardent minds. Scarcely have we explained some few of the functions of the animal œconomy, scarcely have we made some applications of the new pneumatic discoveries, scarcely have we entered on the analysis of some of the principal fluids in the human body, and yet there are men who have attempted to class diseases according to the chemical state of the fluids, and to form a *new nosology* *. It has been proposed to
 arrange

* Fourcroy here probably alludes to a very crude work published by Mons. Baumes, who divides diseases into five classes;
 1. *Diseases of Oxygenation* (les Oxigenèses.)—In these the oxygen is either superabundant, or deficient. To the former (les furoxygénèses) belong all inflammations. These arise from cold, in this manner: the air is greatly condensed by cold; and consequently, during each act of inspiration, more oxygen is taken into the lungs than in temperate, or warm weather. As proofs of the validity of the hypothesis, the author mentions, that the blood of animals, which are made to breathe pure oxygen gas, coagulates much sooner than that of animals which alone breathe common air; and in several patients to whom it was administered, that fluid, the blood, exhibited

arrange diseases according to the excess or deficiency of hydrogen, azote, oxygen, or carbon. That which may happen is confounded with what is already discovered; it might be said, that such men, calculated to create theories, injure the science

hibited signs of inflammation. Catarrh differs from inflammation only in a degree; and, therefore, oxygenated muriatic acid gas occasions cough and catarrh. The maximum of combustion, or inflammation, is when the part is too greatly oxygenated, that is, when the inflammation passes to gangrene. Spasmodic affections, according to him, greatly resemble inflammation. There are weaker degrees of suroxygenation: but what appears singular is, that chronic spasms belong to the diseases of disoxygenation, and diabetes to those of suroxygenation.

In atonic complaints particular acids and oxyds are formed, which become true morbid causes. From Bonhomme it appears, the rickets arise partly from the generation of an acid, which is similar to the oxalic acid, partly from the deficiency of phosphoric acid in the bones. Phosphat of lime, and phosphat of natron, are therefore the true specifics for this disorder. In scrophula there is a superoxygenation, and in scurvy a disoxygenation of the serum. In chlorosis there is a tendency to acidification in the stomach and secreting vessels.

2. *Diseases of Calorification* (les Calorinèses.)—All active hæmorrhagies, congestions, and ebullitions, belong to the diseases called by the author surcalorinèses; the diseases of debility to the descalorinèses.

3. *Diseases of Hydrogenisation* (les Hydrogénèses.)—To this belong almost all autumnal complaints, bilious fevers, and intermittents; for the proportion of oxygen in the atmosphere is diminished by the co-operation of heat and azote. The carbonic acid is evolved in smaller quantity from the lungs in warm as in cold weather. The unhealthiness of marshy ground arises from hydro-carbonic acid gas; therefore hydro-carbon is accumulated in the system, and it shews itself in an
overflow

science of medicine, by a premature application of their opinions, and by their hypothetical results, of which they are not sufficiently qualified to make a prudent and reserved use.

The only remedy which I know, capable of
correcting

overflow of bile. This is the reason why the liver is affected in all diseases of warm climates. According to the opinion of Dr. Beddoes, a mixture of hydrogen gas with atmospherical air is a soft anodyne. Hydro-carbonate, mixed with common air, in the proportion of one-tenth to one-fourth, occasioned giddiness and fainting. *Flatus*, which is either carbonated hydrogen gas, or sulphurated hydrogen, operates in the same manner in the intestines of people who have great nervous sensibility. In these diseases the heat augments to an uncommon degree, because the blood passes much sooner to the state of venous blood, on account of the great quantity of hydro-carbon with which the human body is loaded.

Agreeably to these premises, the author attempts an explanation of the principal phenomena of fever, and its periodical returns.

4. *Diseases of Azotefaction* (les Azoténèses.)—A superabundance of azote in the system gives birth to putrid diseases. Deficient azotization is similar in its effects to the atonic super-oxygenation. The author thinks, that azotic gas has the power of dissolving miasma: that superazotization is the effect of fever, with this difference, that in inflammatory fevers it does not occur until the end of the fever, but in those of a putrid nature it occurs sooner, and in a greater degree. He is also of opinion, that children have very little disposition to putrid diseases, because they contain little azote. But he here seems to forget, that the confluent small-pox and the putrid sore throat, and aphthæ with putrid symptoms, are frequent diseases of children. The indications of cure in this disease are to oxygenate the human frame.

5. *Diseases of Phosphorization* (les phosphorénèses.)—To this class belong, according to the author, ossification of soft parts,
and

correcting this evil, is to state with precision the point to which *pneumatic medicine* has arisen, and to prevent the confounding that which is only probable with that which is certain. Thus much I hope I have accomplished. My object having been to shew what is certain, what is likely to be discovered, and what is not yet

and rickets. The first arises when the phosphat of lime is deposited in soft parts, and the second from the deficiency of the phosphat of lime. Woolaston found the gouty depositions were formed of lithic acid and natron; a discovery which Hermsstadt had also in part made.

From this view of the subject, our readers will easily be able to judge of the spirit with which the whole work is conducted. The Theraputico-pharmaceutical Chemistry concludes the whole. From this part we shall give only a few sketches.

1. *Oxygenating Medicines*.—All these are disoxygenated in the human frame, but with this difference, that some lose their oxygen more quickly than others. In this way the oxyds of iron and quicksilver operate on our internal viscera, and those of lead and silver on our internal surface. The acids also lose their oxygen in the system; and to this cause are to be referred their various medicinal properties. Vegetable diet furoxygenates, and animal food disoxygenates, the body. Spalding observed, that he consumed the air of the diving-bell much sooner after animal, than after vegetable food.

2. *Hydrogenating Medicines*.—Moist atmosphere, bodily rest, fish, fat meat, eggs, and hyro-sulphurs, load the body with hydrogen.

3. *Azotinating Medicines*.—The principal remedies of this class are animal food, and all disoxygenating remedies. The disazotinating remedies are vegetable diet and furoxygenating medicines.

4. *Phosphorating Remedies*.—These are phosphorus, and phosphoric acid, phosphat of lime, and phosphat of natron.

known: and in doing this, I trust, I shall have stimulated, by the relation of great and beautiful experiments, more labourers than there are at present to illustrate this field, which promises such an abundant harvest.

SECT. XXXIII.

THE CONCLUSION.

IT at first sight appears a subject of great difficulty to say why poisons exist in the plan of a benevolent and all-powerful Deity; but upon serious reflection, it will appear that this arises from having very narrow and contracted views of Nature. Proud self-sufficient mortals conceive that every thing was created for their use alone. But as Pope beautifully says:

Has God, proud man! work'd solely for thy good,
 Thy joy, thy pastime, thy attire, thy food?
 Who for thy table feeds the wanton fawn,
For him as kindly spreads the flow'ry lawn:
 Is it for thee the lark ascends and sings?
Joy tunes his voice, joy elevates his wings.
 Is it for thee the linnet pours his throat?
Loves of his own, and raptures swell the note.
 The bounding steed you pompously bestride,
Shares with his lord the pleasure and the pride.
 Is thine alone the seed that sows the plain?
The birds of heav'n shall vindicate their grain.
 Thine, the full harvest of the golden year?
Part pays, and justly, the deserving steer:
 The hog, that ploughs not, nor obeys thy call,
Lives on the labours of this lord of all.
 Know, Nature's children shall divide her care;
 The fur that warms a monarch, warm'd a bear:
 While man exclaims, "See all things for my use!"
 "See man for mine!" replies a pamper'd goose;
 And just as short of reason he must fall,
 Who thinks all made for one, not one for all.

Upon a wider survey of Nature, we find that myriads of created beings are all equally the object of parental care, and have the proper food allotted to each. Hence, each vegetable has its peculiar devourers, and the powers of digestion are proportioned. Hence the meadow-sweet is not eaten by the ox, when to the bleating goat it is delicious food. Hence the hemlock, which is death to the cow, is food for the goat tribe. Hence the aconite, or monkshood, which kills the swine, may be given to horses with impunity, and the parsley, which destroys immediately a parrot, is given to fatten pigs; and pepper, the smallest quantity of which will destroy a pig, is forced down the throat of young turkeys, producing the greatest advantage. Thus Nature, with equal eye, watches over the whole creation; and if the vegetable and animal kingdoms are productive of poisons, she has given *minerals* as their antidote, leaving it to reason to make out the discovery.

Here then do I set bounds to my design. I have presented my readers with a variety of facts of an interesting nature, sufficient to enable them to form an idea of those pleasures which result from the contemplation of the animal œconomy. But this contemplation would prove fruitless, did it not lead us incessantly to seek a knowledge of

the Deity, whilst we survey those works in which His wisdom, goodness, and power, are displayed with such transcendant lustre. He does not impart to us the knowledge of Himself directly, for that is not the plan He has chosen; but He has commanded the fabric of our bodies to proclaim His existence, that He may thus make Himself known to us. He has endued us with faculties susceptible of this divine language, and has raised up men whose sublime genius explores their beauties, and who become their interpreters. Imprisoned for a while in a *small obscure planet*, we only enjoy such a portion of light as is suitable to our present condition; let us wisely improve each glimmering ray reflected upon us, nor lose the smallest beam: let us continually advance in this effulgent light! A time will come when we shall derive all light from the Eternal Source of Light; and instead of contemplating the Divine Architect in the *work* of His *hands*, we shall then contemplate the *work* itself in the Omnipotent Creator. “*We now see things obscurely, and as through a glass darkly; but we shall then see face to face.*”

APPENDIX.

GENERAL POSOLOGICAL TABLE.

		DOSES.
		Common. Large.
ACETUM Scillæ	<i>Vinegar of Squills</i>	gtt. 10.—gtt. 50.
Acidum muriaticum	<i>Muriatic Acid</i>	gtt. 15.—gtt. 40.
—— vitriolicum dilu- tum	} <i>Diluted Vitriolic Acid</i> . . .	gtt. 10.—gtt. 30.
Æther vitriolicus .....			Vitriolic Æther .....	gtt. 10.—gtt. 100.
Aloe flocotrina	<i>Socotrine Aloes</i>	gr. 15.—scr. 1.
Alumen	<i>Alum</i>	gr. 6.—gr. 12.
Ammonia præparata ...	<i>Prepared Ammonia</i>	gr. 5.—scr. 1.
Ammoniacum	<i>Gum Ammoniacum</i>	gr. 10.—gr. 15.
Antimonium	<i>Crude Antimony</i>	scr. 1.—dr. 1.
—— calcinatum	<i>Calcined Antimony</i>	gr. 15.—scr. 2.
—— tartarifatum	<i>Tartarified Antimony</i>	gr. 1.—gr. 6.
—— vitrificatum	<i>Vitrified Antimony</i>	gr. 2.—gr. 10.
Aqua ammoniæ	<i>Water of Ammonia</i>	gtt. 10.—gtt. 30.
—— acetatæ .	<i>Water of acetated Ammonia</i>	dr. 2.—dr. 6.
—— anethi	<i>Dill-seed Water</i>	un. 1.—un. 2.
—— calcis	<i>Lime Water</i>	un. 4.—lb. ½.
—— cinnamomi	<i>Cinnamon Water</i>	un. 8.—un. 4.
—— fœniculi	<i>Fennel Water</i>	un. 2.—un. 4.
—— kali	<i>Water of prepared Kali</i> ...	gtt. 20.—gtt. 30.
—— puri	<i>Water of pure Kali</i>	gtt. 10.—gtt. 30.
—— menthæ piperitidis	<i>Peppermint Water</i>	un. 2.—un. 4.
—— pimento	<i>All-spice Water</i>	un. 2.—un. 4.
—— pulegii	<i>Pennyroyal Water</i>	un. 2.—un. 4.
—— rosæ	<i>Rose Water</i>	ad libitum.
Arabicum Gummi	<i>Gum Arabic</i>	dr. 1.—dr. 2.
Asafœtida .....	.....	gr. 10.—scr. 1.
Balsamum canadense ...	<i>Canada Balsam</i>	gr. 15.—gr. 30.
—— copaivæ	<i>Balsam of Copaiva</i>	gtt. 20.—gtt. 40.
—— peruvianum ...	<i>Balsam of Peru</i>	gr. 6.—gr. 25.
—— toluatanum	<i>Balsam of Tolu</i>	scr. 1.—dr. 1.

Calomelas

		DOSES.	
		Common.	Large.
Calomelas	<i>Calomel</i>	gr. 3.—gr.	10.
Camphora	<i>Camphor</i>	gr. 3.—scr.	1.
Cantharis	<i>Cantharides</i>	gr. $\frac{1}{4}$.—gr.	4.
Cardamomum	<i>Cardamom Seeds</i>	gr. 5.—gr.	10.
Cascarilla	<i>Cascarilla Bark</i>	scr. $\frac{1}{2}$.—dr.	1.
Castoreum	<i>Castor</i>	gr. 3.—scr.	1.
Catechu .....	.....	gr. 15.—scr.	2.
Chamæmelum	<i>Camomile</i>	scr. $\frac{1}{2}$.—dr.	1.
Cicuta	<i>Hemlock</i>	gr. 5.—scr.	1.
Cinchona	<i>Peruvian Bark</i>	scr. 1.—dr.	2.
Colomba .....	.....	gr. 10.—scr.	1.
Confectio aromatica	<i>Cordial Confection</i>	gr. 15.—scr.	2.
———— opiata	<i>Confection of Opium</i>	gr. 5.—scr.	1.
Conserva absinthii maritimi	} <i>Conserve of Sea Wormwood</i>	dr. 2.—un.	$\frac{1}{2}$.
———— ari		<i>Conserve of Cuckow-pint</i> ...	scr. 1.—dr.	1.
———— corticis aurantii	<i>Conserve of Orange Peel</i>	ad libitum.	
———— cynosbati	<i>Conserve of Hips</i>	ad libitum.	
Conserva lujulæ	<i>Conserve of Wood-sorrel</i> ...	dr. 4.—un.	1.
———— pruni fylvestris	<i>Conserve of Sloes</i>	dr. 1.—dr.	3.
———— rosæ rubræ	<i>Conserve of Red Roses</i>	dr. 2.—un.	1.
———— scillæ	<i>Conserve of Squills</i>	scr. 1.—dr.	1.
Contrayerva .....	.....	gr. 10.—dr.	1.
Coriandrum	<i>Coriander Seeds</i>	scr. 1.—dr.	1.
Cornu cervi ustum	<i>Burnt Hartshorn</i>	dr. $\frac{1}{2}$.—dr.	2.
Creta	<i>Chalk</i>	gr. 15.—scr.	1.
Decoctum cinchonæ	<i>Decoction of Peruvian Bark</i>	un. 2.—un.	6.
———— cornu cervi ...	<i>Decoction of Hartshorn</i>	un. 4.—lb.	$\frac{1}{2}$.
———— hordei	<i>Simple Decoction of Barley</i>	un. 4.—lb.	$\frac{1}{2}$.
———— compositum	} <i>Compound Decoction of Barley</i>	} un. 4.—lb.	} $\frac{1}{2}$.
———— sarsaparillæ ...				} Simple Decoction of Sarsaparilla .....	} un. 4.—lb.	} $\frac{1}{2}$.
———— compositum	} <i>Compound Decoction of Sarsaparilla</i>	} un. 4.—lb.	} $\frac{1}{2}$.
———— ulmi .....				Decoction of Elm .....	un. 4.—lb.	$\frac{1}{2}$.
Digitalis	<i>Fox-glove</i>	gr. $\frac{1}{2}$.—gr.	2.
Elaterium	} <i>The inspissated juice of the Wild Cucumber</i>	} gr. $\frac{1}{2}$.—gr.	} 3.
Electuarium cassiæ .....				Electuary of Cassia .....	dr. 1.—dr.	6.
———— scammonii	<i>Electuary of Scammony</i>	scr. 1.—dr.	1.
———— fennæ	<i>Electuary of Senna</i>	dr. $\frac{1}{2}$.—dr.	4.
Extractum cacuminis genivistæ	} <i>Extract of Broom Tops</i>	} scr. 1 $\frac{1}{2}$.—dr.	} 1 $\frac{1}{2}$.
———— cascarillæ ...			

Extractum

DOSES.

		Common.	Large
Extractum chamœmeli ...	Extract of Camomile	gr. 10.—	scr. 2.
———— cinchonæ	Extract of Peruvian Bark	gr. 10.—	scr. 1½.
———— cum refinâ	{ Extract of Bark with the Resin	{ gr. 10.—	{ scr. 1½.
———— colocynthidis compositum	{ Compound Extract of Bitter Apple	{ gr. 5—	{ gr. 25.
———— gentianæ	Extract of Gentian	gr. 10.—	scr. 1½.
———— glycyrrhizæ	Extract of Liquorice	dr. 1.—	dr. 4.
———— hæmatoxyli	Extract of Logwood	gr. 10.—	gr. 2.
———— hellebori ni- gri	{ Extract of Black Hellebore	{ gr. 2.—	{ gr. 10.
———— jalapii	Extract of Jalap	gr. 10.—	scr. 1.
———— papaveris albi	Extract of White Poppies	gr. 1.—	gr. 1.
———— rutæ	Extract of Rue	gr. 10.—	scr. 5.
———— sabinae	Extract of Savin	gr. 10.—	scr. 1½.
———— fennæ	Extract of Senna	gr. 10.—	scr. 1½.
Ferri rubigo	Rust of Iron	gr. 6.—	scr. 1½.
Ferrum ammoniacale ...	Ammoniacal Iron	gr. 2.—	gr. 10.
———— tartarifatum	Tartarized Iron	gr. 2.—	gr. 10.
———— vitriolatum	Vitriolated Iron	gr. 1.—	gr. 6.
Filix ...	Male Fern Root	scr. 1½.—	un. ½.
Flores benzoës	Flowers of Benzoin	gr. 10.—	scr. 1.
———— sulphuris	Flowers of Sulphur	scr. 1.—	scr. 1½.
Gambogia	Gamboge	gr. 2.—	gr. 12.
Genista	Broom Tops	scr. 1.—	dr. 1.
Gentiana	Gentian	gr. 10.—	dr. 1.
Ginseng .....	.....	gr. 10.—	dr. 1.
Glycyrrhiza	Liquorice Root	dr. 4.—	dr. 6.
Guaiacum .....	.....	scr. 1½.—	dr. 1.
Gummi resina	Gum-resin	gr. 6.—	scr. 1½.
Hæmatoxyllum	Logwood	gr. 10.—	dr. 1.
Helleborus niger	Black Hellebore	gr. 1—	gr. 5.
Hydrargyrus	Quicksilver	un. ½.—	un. 4.
———— acetatus	Acetated Quicksilver	gr. 1.—	gr. 10.
———— calcinatus	Calcined Quicksilver	gr. ½.—	gr. 2.
———— cum cretâ	Quicksilver with Chalk	gr. 5.—	scr. 1.
———— muriatus ...	Muriated Quicksilver	gr. ¼.—	gr. 1.
———— cum sulphure	Sulphurated Quicksilver	scr. 1.—	dr. 1.
———— sulphuratus } ruber	{ Red sulphurated Quicksilver	{ gr. 10.—	{ scr. 1.
———— vitriolatus	Vitriolated Quicksilver	gr. ½.—	gr. 4.

		DOSES.	
		Common.	Large.
Infusum gentianæ com- positum	} Compound Infusion of Gen- tian	} un.	2.—un.
———— rosæ			4.
———— fennæ	Infusion of Roses	un.	2.—lb. $\frac{1}{2}$.
———— fennæ tartarifa- tum	} Tartarified infusion of Senna	un.	2.—un.
Ipecacuanha			4.
Iris	Florentine Orris	gr.	10.—scr. 1.
		scr.	1.—dr. 1.
Jalapium	Jalap	gr.	7.—scr. $\frac{1}{2}$.
Juniperus	Juniper Berries	scr.	1.—dr. 1.
Kino		gr.	10.—scr. $1\frac{1}{2}$.
Kali præparatum	Prepared Kali	gr.	8.—scr. 1.
—— acetatum ..	Acetated Kali	scr.	1.—dr. 1.
—— tartarifatam	Tartarified Kali	dr.	2.—dr. 6.
—— vitriolatam	Vitriolated Kali	dr.	2.—dr. 6.
Lac ammoniaci	Milk of Ammoniacum	dr.	2.—un. 1.
—— amygdalæ	Milk of Almonds	un.	2.—un. 6.
Liquor volatilis cornu cervi	} Volatile Liquor of Hartshorn	scr.	$1\frac{1}{2}$ —dr. 2"
Magnesia alba	White Magnesia	scr.	1.—dr. 2.
—— usta	Burnt Magnesia	scr.	$1\frac{1}{2}$ —dr. 1.
—— vitriolata	Vitriolated Magnesia	dr.	2.—dr. 6.
Manna		un.	$\frac{1}{2}$ —un. 2.
Mel acetatum	Acetated Honey	dr.	1.—dr. 2.
—— rosæ	Rose Honey	dr.	1.—dr. 2.
—— scillæ	Squill Honey	scr.	$1\frac{1}{8}$ —dr. 2.
Millepeda	Woodlice	dr.	1.—dr. 3.
Mistura camphorata	Camphorated Mixture	un.	2.—un. 4.
—— cretacea	Chalk Mixture	un.	2.—un. 4.
—— moschata	Musk Mixture	dr.	4.—un. 2.
Mucilago amyli	Mucilage of Starch	dr.	1.—un. 1.
—— arabici gummi	Mucilage of Gum-arabic ...	dr.	1.—un. 1.
—— feminis cydonii mali	} Mucilage of Quince-seed ...	dr.	1.—un. 1.
—— tragacanthæ ...			Mucilage of Tragacanth ...
Myrrha	Myrrh	gr.	10.—scr. $1\frac{1}{2}$.
Natron præparatum	Prepared Natron	gr.	10.—scr. $1\frac{1}{2}$.
—— tartarifatam	Tartarified Natron	dr.	4.—un. 1.
—— vitriolatam	Vitriolated Natron	dr.	6.—un. 1.
Nitrum purificatum	Purified Nitric	gr.	5.—scr. 1.

		DOSES.	
		Common.	Large.
Oleum amygdalæ	Oil of Almonds	dr. 4.—	un. 1.
— juniperi baccæ ...	Oil of Juniper-berries	gtt. 2.—	gtt. 10.
— lavendulæ	Oil of Lavendar	gtt. 1.—	gtt. 5.
— lini	Oil of Linseed	dr. 4.—	un. 1.
— olivæ	Oil of Olives	dr. 4.—	un. 1.
— ricini	Castor Oil	dr. 2.—	un. 1.
— sinapeos	Oil of Mustard	dr. 4.—	un. 1.
Opium purificatum	Purified Opium	gr. 1½.—	gr. 2.
Ostreorum testæ	Oyster-shells	scr. 1.—	dr. 1½.
Oxymel cochici	Oxymel of Colchicus	scr. 1.—	scr. 1½.
— scillæ	Oxymel of Squills	scr. 1½.—	dr. 1.
Pilula aloes composita ...	Compound Pills of Aloes ...	gr. 10.—	scr. 1.
— — — cum Myrrhâ	} Pills of Aloes with Myrrhâ	gr. 6.—	gr. 18.
— galbani composita		Compound Galbanum Pills ...	gr. 10.—	scr. 1½.
— hydrargyri	Quicksilver Pills	gr. 6.—	scr. 1.
— opii	Opium Pills	gr. 2.—	gr. 8.
— scillæ	Squill Pills	gr. 10.—	scr. 1.
Pimento	Alli-spice	gr. 5.—	scr. 1.
Pulvis aloes cum canellâ	Aloetic Powder with canella	gr. 10.—	scr. 1.
— — — cum ferro ...	Aloetic Powder with Iron ...	gr. 8.—	gr. 18.
— — — cum guaiaco	} Aloetic Powder with Guaiacum	gr. 10.—	scr. 1.
— — — antimonialis		Antimonial Powder	gr. 3.—	gr. 6.
— — — aromaticus	Aromatic Powder	gr. 5.—	scr. 1.
— — — e chelis cancerorum	} Compound Powder of Crab's Claw	scr. 1½.—	dr. 1.
compositus			
— — — contrayervæ compositus	} Compound Powder of Contrayerva	gr. 15.—	scr. 1½.
— — — cretæ compositus ...		Compound Powder of Chalk	gr. 10.—	scr. 1.
— — — compositus	} Compound Powder of Chalk, with Opium	gr. 10.—	scr. 2.
cum opio			
— — — ipecacuanhæ compositus	} Compound Powder of Ipecacuanha	gr. 18.—	scr. 1½.
— Myrrhæ compositus		Compound Powder of Myrrh	gr. 15.—	scr. 1½.
— — — opiatus	Opium Powder	gr. 5.—	scr. 1.
— — — scammonii	} Compound Powder of Scammony	gr. 10.—	scr. 1.
— — — compositus cum aloë		Powder of Scammony with aloes	gr. 5.—	gr. 10.
Pulvis scammonii cum calomelane	} Powder of Scammony with Calomel	gr. 8.—	gr. 16.
— — — fennæ compositus ..		Compound Powder of Senna	scr. 1.—	scr. 2.
— — — tragacanthæ compositus	} Compound Powder of Tragacanth	scr. 1.—	dr. 1.
— Pyrethrum		Pellitory of Spain	gr. 1.—	gr. 6.

		DOSES.	
		Common.	Large.
Quassia	Quassy Wood	gr. 5.—	scr. ʒ.
Quercus	Oak Bark	gr. 6.—	scr. ʒ.
Raphanus rusticanus	Horse radish	scr. ʒ.—	dr. ʒ.
Rhei	Rhubarb	gr. ʒ5.—	scr. ʒ.
Ruta	Rue	gr. ʒ5.—	scr. ʒ.
Sal ammoniac	Sal Ammoniac	gr. 8.—	scr. ʒ.
— cornu cervi	Salt of Hartshorn	gr. ʒ0.—	scr. ʒ.
— fuccini purificatus ..	Purified Salt of Amber	gr. 5.—	gr. ʒ5.
Sapo	Soap	scr. ʒ½.—	dr. ʒ.
Sarsaparilla .....	.....	scr. ʒ.	scr. ʒ½.
Saffrafas .....	.....	scr. ʒ.	dr. ʒ.
Scammonium	Scammony	gr. 5.—	scr. ʒ.
Scilla exsiccata	Dried Squills	gr. ʒ.	gr. ʒ.
— recens	Fresh Squills	gr. 5.—	gr. ʒ0.
Scordium	Water-germander	scr. ʒ.	dr. ʒ.
Seneka .....	.....	scr. ʒ.	scr. ʒ.
Senna .....	.....	scr. ʒ.	dr. ʒ.
Serpentaria .....	.....	gr. ʒ0.—	scr. ʒ.
Simarouba	Simarouba Bark	gr. ʒ0.—	scr. ʒ½.
Sinapi	Mustard-seed	dr. ʒ.	dr. ʒ.
Spermaceti .....	.....	scr. ʒ.	dr. ʒ.
Spigelia	Indian Pink	gr. ʒ0.—	scr. ʒ.
Spina cervinæ	Buckthorn	scr. ʒ½.—	dr. ʒ.
Spiritus ætheris vitriolici	Vitriolic Spirit of Æther ...	gtt. 20.—	gtt. 60.
———— vitriolici	} Compound Spirit of vitriolic	gtt. 20.—	gtt. 60.
compositus .....				Æther .....
———— nitrosi...	Nitrous Spirit of Æther	gtt. 20.—	gtt. 60.
———— ammoniæ	Spirit of Ammonia	scr. ʒ.	scr. ʒ.
———— compositus	} Compound Spirit of Am-	scr. ʒ½.—	dr. ʒ.
———— tus .....				monia .....
———— fœtidus	Fœtid Spirit of Ammonia ...	scr. ʒ.	scr. ʒ.
———— fuccina-	} Succinated Spirit of Ammo-	gr. ʒ0.—	scr. ʒ.
———— tus .....				nia .....
———— anisi compositus	Compound Spirit of Aniseed	dr. ʒ.	dr. ʒ.
———— carui	Spirit of Carraway	dr. ʒ.	dr. ʒ.
———— cinnamomi	Spirit of Cinnamon	dr. ʒ.	dr. ʒ.
———— juniperi compositus	} Compound Spirit of Juniper	dr. ʒ.	dr. ʒ.
———— tus			
———— lavendulæ	Spirit of Lavender	dr. ʒ.	dr. ʒ.
———— compositus	} Compound Spirit of Lavender	scr. ʒ½.—	dr. ʒ.
———— tus			
———— menthæ piperitidis	} Spirit of Peppermint	dr. ʒ.	dr. ʒ.
———— dis			
———— fativæ ...	Spirit of Spearmint	dr. ʒ.	dr. ʒ.
———— nucis moschatæ	Spirit of Nutmeg	dr. ʒ.	dr. ʒ.

DOSES.

		Common.	Large.
Spiritus pimento	<i>Spirit of Pimento</i>	dr. 1.—	dr. 3.
—— pulegii	<i>Spirit of Pennyroyal</i>	dr. 1.—	dr. 3.
—— raphani compo- tus	{ <i>Compound Spirit of Horse- radish</i>	dr. 1.—	dr. 3.
Spongia usta	<i>Burnt Sponge</i>	scr. 1.—	dr. 1.
Stanni pulvis	<i>Powder of Tin</i>	dr. 1.—	dr. 6.
Styrax	<i>Storax</i>	gr. 10.—	scr. 1.
Succinum præparatum ...	<i>Prepared Amber</i>	scr. 1½.—	dr. 1.
Succus aconiti spissatus...	<i>Insuffated juice of Henbane</i>	gr. 1.—	gr. 4.
—— baccæ sambuci spissatus	{ <i>Insuffated Juice of Elder- berry</i>	un. ½.—	un. 2.
—— cicutæ spissatus ..	<i>Insuffated Juice of Hemlock</i>	gr. 2.—	gr. 10.
—— cochleariæ com- positus	{ <i>Compound Juice of Scurvy- grass</i>	un. 2.—	un. 6.
—— ribris nigri	{ <i>Insuffated Juice of Black Currant</i>	un. ½.—	un. 2.
Sulphur antimonii præci- pitatum	{ <i>Precipitated Sulphur of An- timony</i>	gr. 2.—	gr. 5.
—— præcipitatum ...	<i>Precipitated Sulphur</i>	dr. 1.—	dr. 2.
Syrupus althææ	<i>Syrup of Marsh-mallow</i>	dr. 1.—	dr. 2.
—— papaveris albi...	<i>Syrup of White Poppies</i>	dr. 4.—	un. 1.
—— ——— erratici	<i>Syrup of wild Poppy</i>	dr. 2.—	dr. 4.
—— rosæ	<i>Syrup of Roses</i>	dr. 1.—	dr. 2.
—— spinæ cervinæ ...	<i>Syrup of Buckthorn</i>	dr. 1.—	dr. 2.
—— violæ	<i>Syrup of Violets</i>	dr. 1.—	dr. 2.
—— zingiberis	<i>Syrup of Ginger</i>	dr. 1.—	dr. 2.
Tanacetum	<i>Dandelion</i>	scr. 1½.—	dr. 1.
Tartari crystalli	<i>Crystals of Tartar</i>	dr. 4.—	un. 1.
Tinctura alœs	<i>Tincture of Aloes</i>	dr. 4.—	un. 1.
—— ——— composita	<i>Compound Tincture of Aloes</i>	scr. 1½.—	dr. 2.
—— ——— asafœtidæ	<i>Tincture of Asafœtida</i>	scr. 1.—	dr. 2.
—— ——— balsami peru- viani	{ <i>Tincture of Balsam of Peru</i>	scr. 1½.—	dr. 2.
—— ——— tolu- tani	{ <i>Tincture of Balsam of Tolu</i>	scr. 1½.—	dr. 2.
—— ——— benzoës compo- sita	{ <i>Compound Tincture of Benja- min</i>	dr. 1.—	dr. 2.
—— ——— cantharidis	<i>Tincture of the Spanish Fly</i>	gr. 10.—	dr. 1.
—— ——— cardamomi	<i>Tincture of Cardamom</i>	dr. 1.—	dt. 3.
—— ——— ——— com- posita	{ <i>Compound Tincture of Car- damom</i>	dr. 1.—	dr. 3.
—— ——— cascarillæ	<i>Tincture of Cascarilla</i>	dr. 1.—	dr. 4.
—— ——— castrei	<i>Tincture of Castor</i>	scr. 1.—	dr. 1½.
—— ——— catechu	<i>Tincture of Catechu</i>	dr. 2.—	dr. 3.
—— ——— cinchonæ	<i>Tincture of Bark</i>	dr. 1.—	dr. 4.
—— ——— ——— com- posita	{ <i>Compound Tincture of Bark</i>	dr. 2.—	dr. 4.

Tinctura

DOSES.
Common. Large.

Tinctura cinchonæ am- moniata	} Ammoniated Tincture of Bark	scr. 1½.—dr. 2.
———— cinnamomi ...		Tincture of Cinnamon .....	dr. 1.—dr. 3.
———— com- posita	} Compound Tincture of Cinna- mon	dr. 1.—dr. 3.
———— colombæ		Tincture of Colomba .....	dr. 1.—dr. 3.
———— ferri amonia- calis	} Tincture of Ammoniacal Iron	scr. 1.—dr. 2.
———— ferri muriati ...		Tincture of Muriated Iron	gtt. 10.—gtt. 60.
———— galbani	Tincture of Galbanum ...	dr. 1.—dr. 3.
———— gentianæ com- posita	} Compound Tincture of Gen- tian	dr. 2.—dr. 3.
———— guaiaci ammo- niata		Tincture of Ammoniated Guaiaacum .....	dr. 1.—dr. 4.
———— helebori nigri	Tincture of Black Hellebore	scr. 1.—dr. 1.
———— jalapii	Tincture of Jalap	dr. 1.—dr. 3.
———— myrrhæ	Tincture of Myrrh	dr. 1.—dr. 2.
———— opii	Tincture of Opium	gtt. 20.—gtt. 25.
———— camphorata	} Camphorated Tincture of Opium	gtt. 30.—gtt. 60.
———— rhabarbari		Tincture of Rhubarb .....	dr. 4.—un. 2.
———— com- posita	} Compound Tincture of Rhu- barb	dr. 4.—un. 2.
———— Sabinæ compo- sita		Compound Tincture of Savin	gtt. 20.—gtt. 40.
———— scillæ	Tincture of Squills	gtt. 20.—gtt. 60.
———— sennæ	Tincture of Senna	dr. 2.—un. 1.
———— serpentariæ ...	Tincture of Serpentaria ...	dr. 1.—dr. 2.
———— valerianæ	Tincture of Valerian	dr. 1.—dr. 3.
———— am- moniata	} Ammoniated Tincture of Valerian	scr. 1.—dr. 2.
———— zingiberis		Tincture of Ginger .....	dr. 1.—dr. 2.
Tormentilla	Tormentil Root	gr. 10.—scr. 2.
Tragacantha	Tragacanth	gr. 10.—dr. 1.
Valeriana	Valerian	scr. 1.—dr. 2.
Vinum aloes	Wine of Aloes	dr. 6.—un. 1.
———— antimonii	Antimonial Wine	gtt. 20.—gtt. 50.
———— tarta- rifati	} Wine of Tartarified Anti- mony	gtt. 20.—gtt. 50.
———— ferri		Wine of Iron .....	dr. 1.—dr. 4.
———— ipecacuanhæ ...	Ipecacuanha Wine	dr. 1.—dr. 4.
———— rhabarbari	Wine of Rhubarb	dr. 4.—un. 2.
Uva ursi	Bear's Whortleberry	scr. 1.—dr. 1.
Zincum calcinatum	Calcined Zinc	gr. 3.—gr. 10.
———— vitriolatum puri- ficatum	} Purified Vitriolated Zinc ...	gr. 5.—scr. 1.

THE
ANCIENT AND PRESENT
SYNONYMA

OF

THE LONDON COLLEGE.

FORMER NAMES.

Acetum scilliticum.
Æthiops mineralis.
Aqua aluminosa bateana.
 — *calcis simplex.*
 — *cinnamomi simplex.*
 ————— *spirituosa.*
 — *hordeata.*
 — *juniperi composita.*
 — *menthæ piperitidis simplex.*
 ————— *spirituosa.*
 ————— *vulgaris simplex.*
 ————— *spirituosa.*
 — *nucis moschatæ.*
 — *piperis jamaicensis.*
 — *pulegii simplex.*
 ————— *spirituosa.*
 — *raphani composita.*
 — *rosarum damascenarum.*
 — *sulphurina.*
 — *feminum anethi.*
 ————— *anisi composita.*
 ————— *carui.*
 — *vitriolica camphorata.*

PRESENT NAMES.

Acetum scillæ.
 Hydrargyrus cum sulphure:
 Aqua aluminis composita.
 — *calcis.*
 — *cinnamomi.*
 Spiritus cinnamomi.
 Decoctum hordei.
 Spiritus juniperi compositus.
 Aqua menthæ piperitidis.
 Spiritus menthæ piperitidis.
 Aqua menthæ fativæ.
 Spiritus menthæ fativæ.
 — *nucis moschatæ.*
 Aqua pimento.
 — *pulegii.*
 Spiritus pulegii.
 — *raphani compositus.*
 Aqua rosæ.
 — *cupri ammoniati.*
 — *anethi.*
 Spiritus anisi compositus.
 — *carui.*
 Aqua zinci vitriolati cum camphora.

Balsamum sulphuris barbadense.
 ————— *simplex.*
 ————— *traumaticum.*

Petroleum sulphuratum.
 Oleum sulphuratum.
 Tinctura benzoës composita:

FORMER NAMES.

Calx antimonii.
Causpicum antimoniale.
 ——— commune fortius.
 ——— lunare.
Ceratum album.
 ——— citrinum.
 ——— epuloticum.
Chalybis rubigo præparata.
Cinnabaris factitia.
Confectiv cardiaca.

Decoctum album.
 ——— commune pro clystere.
 ——— pectorale.

Electuarium lenitivum.
Elixir aloes.
 ——— myrrhæ compositum.
 ——— paregoricum.
Emplastrum ex ammoniaco cum mercurio.
 ——— attrahens.
 ——— cephalicum.
 ——— commune.
 ——— ad hæstrum.
 ——— cum gummi.
 ——— cum mercurio.

 ——— e cymino.
 ——— roborans.
 ——— e saponi.
 ——— stomachicum.
 ——— vesicatorium.
Emulsio communis.
Extractum catharticum.
 ——— thebæicum.

Flores benzoïni.
 ——— martiales.
Fotus communis.

Hiera picra.

Infusum amarum simplex.
 ——— senæ commune.
Sulphur e camphorâ.
 ——— e cretâ.
 ——— e mosche.

PRESENT NAMES.

Antimonium calcinatum.
 ——— muriatum.
 Calx cum kali puro.
 Argentum nitratum.
 Ceratum spermatis ceti.
 ——— resinæ flavæ.
 ——— lapidis calaminaris.
 Ferri rubigo.
 Hydrargyrus sulphuratus ruber.
 Confectio aromatica.

 Decoctum cornu cervi.
 ——— pro enemate.
 ——— hordei compositum.

 Electuarium e fennâ.
 Tinctura aloës composita.
 ——— sabinæ composita.
 ——— opii camphorata.
 Emplastrum ammoniaci cum hydrargyro.
 ——— ceræ.
 ——— picis burgundicæ.
 ——— lithargyri.
 ——— cum resina.
 ——— cum gummi.
 ——— cum hydrargyro.
 ——— cumini.
 ——— thuris.
 ——— saponis.
 ——— ladani.
 ——— cantharidis.
 Lac amygdalæ.
 Extractum e colocynthide compositum.
 Opium purificatum.

 Flores benzoës.
 Ferrum ammoniacale.
 Decoctum pro fomento.
 Pulvis aloëticus.

 Infusum gentianæ compositum.
 ——— fennæ tartarisatum.
 Mistura camphorata.
 ——— cretacea.
 ——— moschata.

FORMER NAMES.

Linimentum album.
 ——— saponaceum.
 ——— volatile.
Lixivium saponarium.
 ——— tartar.

Mel Ægyptiacum.
 — rofaceum.
Mercurius calcinatus.
 ——— corrosivus sublimatus.
 ——— ruber.
 ——— dulcis sublimatus.
 ——— emeticus flavus.
 ——— præcipitatus albus.

Nitrum vitriolatum.

Oleum petrolei Barbadenfis.
 ——— terebinthinæ æthereum.
Opium colatum.
Oxymel scilliticum.

Philonium Londinense.
Pillulæ aromaticæ.
 — rufi.
Pulvis e bolo compositus.
 ——— cum opio.
 ——— e cerussa compositus.
 ——— sternutatorius.

Rob baccarum sambuci.

Saccharum saturni.
Sal absinthii.
 — catharticus Glauberi.
 — diureticus.
 — martis.
 — tartari.
 — vitrioli.
 — volatilis salis ammoniaci.
Species aromaticæ.
Spiritus cornu cervi.
 ——— lavendulæ compositus.
 ——— simplex.
 ——— nitri dulcis.
 ——— Glauberi.
 ——— salis ammoniaci.
 ——— dulcis.

NEW NAMES.

Unguentum spermatis ceti.
 Linimentum saponis.
 ——— ammoniæ.
 Aqua kali puri.
 — kali.

 Oxymel æruginis.
 Mel rosæ.
 Hydrargyrus calcinatus.
 ——— muriatus.
 ——— nitratus ruber.
 Calomelas.
 Hydrargyrus vitriolatus.
 Calx hydrargyri alba.

 Kali vitriolatum.

 Oleum petrolei.
 ——— terebinthinæ rectificatum.
 Opium purificatum.
 Oxymel scillæ.

 Confectio opiata.
 Pulvis aloëticus cum guaiaco.
 Pillulæ ex aloë cum myrrhâ.
 Pulvis e creta compositus.
 ——— cum opio.
 ——— e cerussa.
 ——— afari compositus.

 Succus baccæ sambuci spissatus.

 Cerussa acetata.
 Kali præparatum.
 Natron vitriolatum.
 Kali acetatum.
 Ferrum vitriolatum.
 Kali præparatum.
 Zincum vitriolatum.
 Ammonia præparata.
 Pulvis aromaticus.
 Liquor volatilis cornu cervi.
 Tinctura lavendulæ composita.
 Spiritus lavendulæ.
 ——— ætheris nitrosi.
 Acidum nitrosum.
 Aqua ammoniæ.
 Spiritus ammoniæ.

FORMER NAMES.

- Spiritus salis marini Glauberi.*
 ——— *vinosus camphoratus.*
 ——— *vitrioli dulcis.*
 ——— *volatilis aromaticus.*
 ——— *fætidus.*
Succi scorbutici.
Syrupus ex althæâ.
 ——— *e corticibus aurantiorum.*
 ——— *balsamicus.*
 ——— *e meconio.*
 ——— *rosarum solutivus.*
- Tabellæ cardialgicæ.*
Tartarum emeticum.
 ——— *solubile.*
 ——— *vitriolatum.*
- Tinctura amara.*
 ——— *aromatica.*
 ——— *fætida.*
 ——— *guaiacina volatilis.*
 ——— *japonica.*
 ——— *martis in spiritu salis*
 ——— *melampodii.*
 ——— *rhabarbari spirituosâ.*
 ——— *vinosa.*
 ——— *rosarum.*
 ——— *sacra.*
 ——— *stomachica.*
- Trochisci bechici albi.*
 ——— *nigri.*
- Vinum antimoniale.*
 ——— *chalybeatum.*
- Unguentum album.*
 ——— *basilicum flavum.*
 ——— *cærulcum fortius.*
 ——— *mitius.*
 ——— *e mercurio præcipitato.*
 ——— *saturninum.*
 ——— *simplex.*

NEW NAMES.

- Acidum muriaticum.*
Spiritus camphoratus.
 ——— *ætheris vitrioli.*
 ——— *ammoniæ compositus.*
 ——— *fætidus.*
Succus cochleariæ compositus.
Syrupus althææ.
 ——— *corticis aurantii.*
 ——— *tolutanus.*
 ——— *papaveris albi.*
 ——— *rosæ.*
- *Trochisci c creta.*
Antimonium tartarifatum.
Kali tartarifatum.
 ——— *vitriolatum.*
- Tinctura gentianæ composita.*
 ——— *cinnamomi composita.*
 ——— *asæ fætidæ.*
 ——— *guaiaci.*
 ——— *catechu.*
 ——— *ferri muriati.*
 ——— *hellebori nigri.*
 ——— *rhabarbari.*
- Vinum rhabarbari.*
Infusum rosæ.
Vinum aloës.
Tinctura cardamomi composita.
Trochisci ex amylo.
 ——— *e glycyrrhiza.*
- Vinum antimonii.*
 ——— *ferri.*
- Unguentum ceræ.*
 ——— *resinæ flavæ.*
 ——— *hydrargyri fortius.*
 ——— *mitius.*
 ——— *calcis hydrargyri albæ.*
 ——— *ceruffæ acetatæ.*
 ——— *adipis suillæ.*

THE
ANCIENT AND MODERN
NOMENCLATURE.

IN ALPHABETICAL ORDER.

ANCIENT NAMES.	MODERN NAMES.
<i>ACID acetous.</i>	ACETOUS acid.
<i>Acid aërial.</i>	Carbonic acid.
<i>Acid arsenical.</i>	Arsenic acid.
<i>Acid boracic.</i>	Boracic acid.
<i>Acid cretaceous.</i>	Carbonic acid.
<i>Acid lignic, or of box.</i>	Pyro-ligneous acid.
<i>Acid malusian.</i>	Malic acid.
<i>Acid marine.</i>	Muriatic acid.
<i>Acid marine dephlogisticated.</i>	Oxygenated muriatic acid.
<i>Acid mephitic.</i>	Carbonic acid.
<i>Acid of alum.</i>	Sulphuric acid.
<i>Acid of amber.</i>	Succinic acid.
<i>Acid of ants.</i>	Formic acid.
<i>Acid of apples.</i>	Malic acid.
<i>Acid of benzoin.</i>	Benzoic acid.
<i>Acid of borax.</i>	Boracic acid.
<i>Acid of chalk.</i>	Carbonic acid.
<i>Acid of charcoal.</i>	Carbonic acid.
<i>Acid of fat.</i>	Cebacic acid.
<i>Acid of galls.</i>	Gallic acid.
<i>Acid of galls alcoholised.</i>	Gallic alcohol.
<i>Acid of lemons.</i>	Citric acid.
<i>Acid of molybden.</i>	Molybdic acid.
<i>Acid of muria.</i>	Muriatic acid.
<i>Acid of nitre.</i>	Nitric acid.
<i>Acid of nitre, white.</i>	Nitric acid.
<i>Acid of nitre deprived of its gas.</i>	Nitric acid.
<i>Acid of nitre, dephlogisticated.</i>	Nitric acid.

ANCIENT NAMES.	MODERN NAMES.
<i>Acid of nitre, phlogisticated.</i>	Nitrous acid.
<i>Acid of phosphorus, dephlogisticated.</i>	Phosphoric acid.
<i>Acid of phosphorus, phlogisticated.</i>	Phosphorous acid.
<i>Acid of salt, alcoholised.</i>	Muriatic alcohol.
<i>Acid of sea-salt.</i>	Muriatic acid.
<i>Acid of silk-worms.</i>	Bombic acid.
<i>Acid of spar or fluor.</i>	Fluoric acid.
<i>Acid of sugar.</i>	Oxalic acid.
<i>Acid of sulphur.</i>	Sulphuric acid.
<i>Acid of tungstein or tungsten</i>	Tungstic acid.
<i>Acid of wolfram of Messrs. Delhuyar.</i>	Tungstic acid.
<i>Acid saccharine.</i>	Oxalic acid.
<i>Acid saccholaëtic, or acid of the } sugar of milk.</i>	Saccho-lactic acid.
<i>Acid sebaceous, or of fat.</i>	Sebacic acid.
<i>Acid sedative, or narcotic, of Hom- } berg.</i>	Boracic acid.
<i>Acid sulphureous.</i>	Sulphureous acid.
<i>Acid syrripous.</i>	Pyromucous acid.
<i>Acid tartarcous.</i>	Tartareous acid.
<i>Acid vitriolic.</i>	Sulphuric acid.
<i>Acid vitriolic, phlogisticated.</i>	Sulphureous acid.
<i>Acidum perlutum.</i>	Saturated phosphat of soda.
<i>Acidum pingue.</i>	Meyer's hypothetical principle.
<i>Æther acetous.</i>	Acetic ether.
<i>Æther marine.</i>	Muriatic ether.
<i>Æther nitrous.</i>	Nitric ether.
<i>Æther vitriolic.</i>	Sulphuric ether.
<i>Æthiops martial.</i>	Black oxyd of iron.
<i>Æthiops mineral.</i>	Black sulphurated oxyd of mercury.
<i>Æthiops per se.</i>	Blackish mercurial oxyd.
<i>Affinities.</i>	Chymical affinities or attractions.
<i>Air alkaline.</i>	Ammoniacal gas.
<i>Air atmospherical, or common air.</i>	Atmospherical, or common air.
<i>Air dephlogisticated, of Dr. Priestley.</i>	Oxygen gas.
<i>Air, dephlogisticated marine acid.</i>	Oxygenated muriatic acid gas.
<i>Air saccharine.</i>	Carbonic acid gas.
<i>Air satid of sulphur.</i>	Sulphurated hydrogen gas.
<i>Air fire, Scheele's.</i>	Oxygen gas.
<i>Air fixed, of Dr. Black.</i>	Carbonic acid gas.
<i>Air impure.</i>	Azotic gas.
<i>Air inflammable.</i>	Hydrogen gas.
<i>Air, marine acid.</i>	Muriatic acid gas.
<i>Air nitrous.</i>	Nitrous gas.
<i>Air phlogisticated.</i>	Azotic gas.

ANCIENT NAMES.

Air pure.
Air solid of Hale.
Air vitiated.
Air vital.
Air vitriolic acid, of Dr. Priestley.
Alkaest.
Alkaest of Respour.
Alkaest of Van Helmont.
Alkalies.
Alkalies aerated.
Alkalies caustic.
Alkalies mild.
Alkali fixed of tartar, caustic.
Alkali fixed of tartar not caustic.
Alkali fixed vegetable.
Alkali fessile.
Alkali marine caustic.
Alkali marine not caustic.
Alkali mineral acetated.
Alkali mineral aerated.
Alkali of Prussian blue.

Alkali of urine,

Alkali phlogisticated.
Alkali vegetable acetated.
Alkali vegetable aerated.
Alkali vegetable supertartarised.

Alkali volatile acetated.

Alkali volatile aerated.

Alkali volatile fluor.
Alkali volatile caustic.
Alkali volatile concrete.
Alkali volatile mesphiticated.
Alloy, or alloy of metals.

Alum.

Alum marine.

Alum nitrous.

Amber yellow.

MODERN NAMES.

Oxygen gas.
 Carbonic acid gas.
 Azotic gas.
 Oxygen gas.
 Sulphureous acid gas.
 { The pretended universal solvent
 { of the alchymists.
 Potash mixed with oxyd of zink.
 Carbonat of potash.
 Alkalies.
 Alkaline carbonats.
 Alkalies.
 Alkaline carbonats.
 Potash.
 Carbonat of potash.
 Carbonat of potash.
 Carbonat of soda.
 Soda.
 Carbonat of soda.
 Acetite of soda.
 Carbonat of soda.
 Ferruginous Prussiat of potash.
 { Carbonat of ammoniac.
 { Ammoniacal carbonat.
 { Ferruginous Prussiat of potash not
 { saturated.
 Acetite of potash.
 Carbonat of potash.
 Acidulous tartrite of potash.
 { Ammoniacal acetite.
 { Acetite of ammoniac.
 { Ammoniacal carbonat.
 { Carbonat of ammoniac.
 Ammoniac.
 Ammoniac.
 Ammoniacal carbonat.
 Carbonat of ammoniac.
 Alloy.
 { Sulphat of alumine.
 { Aluminous sulphat.
 { Muriat of alumine.
 { Aluminous muriat.
 { Nitrite of alumine.
 { Aluminous nitrite.
 Amber of succinum.

ANCIENT NAMES.

Antimony crude.
Antimony diaphoretic.
Antimony muriated.
Antimony supertartarised.
Antimony sulphur-caline.
Antimony sulphur-caline deal-
calised.

Antimony vitrified.

Aqua fortis.
Aqua regia.

Aqua stygia.

Aquila alba.

Arcanum corallinum.

Arcanum duplicatum.
Argil pure. or argillaceous earth.
Argil cretaceous.

Argil spathic.

Arsenic, regulus of.
Arsenic, white, calx of.
Arsenic red.
Arseniate of potash.
Attractions elective.
Azure of cobalt, or of the four fires.

Balsoms, Buquet's.
Balsom of sulphur.
Barilla.
Barytes.
Barytes aerated.
Barytes vitriolated.
Barytes mephiticated.
Base of vital air.
Base of marine salt.
Benzoin, or Benjamin.
Bezoar mineral.
Bismuth.
Bismuth muriated.
Bitumen.
Black-lead.
Blue Berlin.
Blue Prussian.

MODERN NAMES.

Sulphuret of antimony.
White oxyd of antimony by nitre.
Muriat of antimony.
Antimoniated tartrate of potash.
Red sulphurated oxyd of antimony.
{ Orange-coloured sulphurated oxyd
{ of antimony.
{ Vitreous sulphurated oxyd of an-
{ mony.
Common nitrous acid.
Nitro-muriatic acid.
{ Nitro-muriatic acid by the ammo-
{ niacal muriat.
Mild sublimated mercurial muriat.
{ Red oxyd of mercury by the ni-
{ tric acid.
Sulphat of potash.
Alumine.
Aluminous carbonat.
{ Aluminous fluat.
{ Fluat of Alumine.
Arsenic.
Oxyd of arsenic.
Red sulphurated oxyd of arsenic.
Arseniat of potash.
Elective attractions.
Vitreous oxyd of cobalt and silice.

Balsoms.
Sulphuret of volatile oil.
Carbonat of soda.
Barytes.
Carbonat of barytes.
Sulphat of barytes.
Carbonat of barytes.
Oxygen.
Soda.
Benzoin.
Oxyd of antimony.
Bismuth.
Muriat of bismuth.
Bitumen.
Carburet of iron.
Prussiat of iron.
Prussiat of iron.

ANCIENT NAMES.

MODERN NAMES.

<i>Borax.</i>	{ Borax of soda, or borat sursaturat- ed with soda.
<i>Borax ammoniacal.</i>	Ammoniacal borat.
<i>Borax argillaceous.</i>	Aluminous borat.
<i>Borax barytic, or ponderous.</i>	Borat of barytes.
<i>Borax calcareous.</i>	{ Borat of lime. } Calcareous borat:
<i>Borax magnesian.</i>	{ Magnesian borat. } Borat of magnesia.
<i>Borax martial.</i>	Borat of iron.
<i>Borax mercurial.</i>	Borat of mercury.
<i>Borax of antimony.</i>	Borat of antimony.
<i>Borax of zink.</i>	Borat of zink.
<i>Borax vegetable.</i>	Borat of potash.
<i>Butter of antimony.</i>	Sublimated muriat of antimony.
<i>Butter of arsenic.</i>	Sublimated muriat of arsenic.
<i>Butter of bismuth.</i>	Sublimated muriat of bismuth.
<i>Butter of cobalt.</i>	Sublimated muriat of cobalt.
<i>Butter of copper.</i>	Sublimated muriat of copper.
<i>Butter of tin.</i>	Sublimated muriat of tin.
<i>Butter of tin, solid, of Mr. Beaumé.</i>	Concrete muriat of tin.
<i>Butter of zink.</i>	Sublimated muriat of zink.
<i>Brass.</i>	Brass, alloy of copper and zink.
<i>Calces metallic.</i>	Metallic oxyds.
<i>Calomel.</i>	Mild muriat of mercury levigated.
<i>Calx of antimony vitrified.</i>	Vitreous oxyd of antimony.
<i>Camphor.</i>	Camphor.
<i>Camphorite salts.</i>	Camphorats.
<i>Causiticum.</i>	Meyer's hypothetical principle.
<i>Causiticum lunare.</i>	Nitrat of silver.
<i>Cerusse.</i>	{ White oxyd of lead by the ace- tous acid, mixed with carbonat of lime.
<i>Cerusse of antimony.</i>	{ White oxyd of antimony by pre- cipitation.
<i>Chalk.</i>	{ Chalk. Carbonat of lime. } Calcareous carbonat.
<i>Charcoal purc.</i>	Carbon.
<i>Cinnabar.</i>	Sulphurated red oxyd of mercury.
<i>Clay.</i>	{ Clay, a mixture of alumine and silice.
<i>Cobalt.</i>	Cobalt.
<i>Colcothar of vitriol.</i>	{ Red oxyd of iron by the sulphu- ric acid.
<i>Copper acetated.</i>	Acetite of copper.

ANCIENT NAMES.	MODERN NAMES
<i>Copperas green.</i>	Sulphat of iron.
<i>Copper super-vitriolated.</i>	Sulphat of copper.
<i>Diana's tree.</i>	CrySTALLIZED amalgam of silver.
<i>Earth, acetated calcareous.</i>	Calcareous acetite.
<i>Earth, aerial ponderous.</i>	Carbonat of barytes.
<i>Earth animal.</i>	Calcareous phosphat.
<i>Earth base of ponderous spar.</i>	Barytes.
<i>Earth calcareous.</i>	Lime, or calcareous earth.
<i>Earth, crystallizable foliated.</i>	Acetite of soda.
<i>Earth, foliated mercurial.</i>	Acetite of mercury.
<i>Earth, foliated mineral.</i>	Acetite of soda.
<i>Earth of alum.</i>	Alumine.
<i>Earth of tartar, foliated.</i>	Acetite of potash.
<i>Earth magnesian.</i>	Carbonat of magnesia.
<i>Earth muriatic, of Kirwan.</i>	Magnesia.
<i>Earth ponderous.</i>	Barytes.
<i>Earth siliceous.</i>	Siliceous earth, or filice.
<i>Emetic tartar.</i>	Antimoniated tartrate of potash.
<i>Empyreal principle.</i>	Oxygen gas.
<i>Essences.</i>	Volatile oils.
<i>Fecula of vegetables.</i>	Fecula.
<i>Flowers, ammoniacal cupreous.</i>	{ Sublimated ammoniacal muriat of copper.
<i>Flowers argentine, of regulus of antimony.</i>	{ Sublimated oxyd of antimony.
<i>Flowers metallic.</i>	Sublimated metallic oxyds.
<i>Flowers of arsenic.</i>	Sublimated oxyd of arsenic.
<i>Flowers of benzoin.</i>	Sublimated benzoic acid.
<i>Flowers of bismuth.</i>	Sublimated oxyd of bismuth.
<i>Flowers of sulphur.</i>	Sublimated sulphur.
<i>Flowers of tin.</i>	Sublimated oxyd of tin.
<i>Flowers of zink.</i>	Sublimated oxyd of zink.
<i>Fluids aëriform.</i>	Gases.
<i>Fluids elastic.</i>	Gases.
<i>Fluor ammoniacal.</i>	{ Fluat of ammoniac.
	{ Ammoniacal fluat.
<i>Fluor argillous.</i>	{ Aluminous fluat.
	{ Fluat of alumine.
<i>Fluor of magnesia.</i>	Fluat of magnesia.
<i>Fluor of potash.</i>	Fluat of potash.
<i>Fluor of soda.</i>	Fluat of soda.

ANCIENT NAMES.	MODERN NAMES.
<i>Fluor ponderous.</i>	Barytic fluat.
<i>Formiate salts.</i>	Formiats.
<i>Gas, acetous acid.</i>	Acetous acid gas.
<i>Gas, aerial muriatic acid.</i>	Oxygenated muriatic acid gas.
<i>Gas alkaline.</i>	Ammoniacal gas.
<i>Gas, cretaceous acid.</i>	Carbonic acid gas.
<i>Gas hepatic.</i>	Sulphurated hydrogen gas.
<i>Gas inflammable.</i>	Hydrogen gas.
<i>Gas inflammable carbonated.</i>	Carbonated hydrogen gas.
<i>Gas inflammable, of marshes.</i>	{ Marsh hydrogen gas, (or carbonated hydrogen gas.)
<i>Gas mephitic.</i>	Carbonic acid gas.
<i>Gas, marine acid.</i>	Muriatic acid gas.
<i>Gas nitrous.</i>	Nitrous gas.
<i>Gas phlogisticated.</i>	Azotic gas.
<i>Gas phosphoric, of Mr. Gengembre.</i>	Phosphorated hydrogen gas.
<i>Gas of Prussian blue.</i>	Prussic acid gas.
<i>Gas sulphureous.</i>	Sulphureous acid gas.
<i>Gas sylvestre, of Helmont.</i>	Carbonic acid gas.
<i>Gilla vitrioli.</i>	Sulphat of zink.
<i>Glutinous matter of wheat.</i>	Gluten, or glutenus.
<i>Gold muriated.</i>	Muriat of Gold.
<i>Gold thundering.</i>	Ammoniacal oxyd of gold.
<i>Hepars.</i>	Sulphurets.
<i>Heat latent.</i>	Caloric.
<i>Ink of sympathy by cobalt.</i>	Muriat of cobalt.
<i>Iron aerated.</i>	Carbonat of iron.
<i>Iron acetated.</i>	Acetite of iron.
<i>Jupiter.</i>	Tin.
<i>Kirmes mineral.</i>	Red sulphurated oxyd of antimony.
<i>Lapis infernalis.</i>	Molten nitrat of silver.
<i>Lead, or saturn.</i>	Lead.
<i>Lead muriated.</i>	Muriat of lead.
<i>Lead spathic.</i>	Carbonat of lead.
<i>Lead subacetated.</i>	{ White oxyd of lead by the acetous acid.
<i>Lead superacetated.</i>	Acetite of lead.
<i>Lemon-juicc.</i>	Citric acid.

ANCIENT NAMES.	MODERN NAMES.
<i>Ley of soap.</i>	Solution of soda.
<i>Ley, mother.</i>	Deliquescent saline residuum.
<i>Lignite salts.</i>	Pyro-lignites.
<i>Lily of Paracelsus.</i>	Alcohol of potash.
<i>Lime-water of Prussian blue.</i>	Prussiat of lime.
<i>Liquor, Boyle's smoking.</i>	Ammoniacal sulphuret.
<i>Liquor, Libavius's smoking.</i>	Smoking muriat of tin.
<i>Liquor saturated with the colouring matter of Prussian blue.</i>	} Prussiat of potash.
<i>Litharge.</i>	} Demi-vitreous oxyd of lead, or lithargé.
<i>Liver of antimony.</i>	Sulphurated oxyd of antimony.
<i>Liver of arsenic.</i>	Arsenical oxyd of potash.
<i>Livers of sulphur.</i>	Alkaline sulphurets.
<i>Livers of sulphur, earthy.</i>	Earthy sulphurets.
<i>Liver of sulphur, antimoniated.</i>	Antimoniated alkaline sulphuret.
<i>Liver of sulphur, calcareous.</i>	{ Calcareous sulphuret.
	{ Sulphuret of lime.
<i>Liver of sulphur, barytic.</i>	{ Barytic sulphuret.
	{ Sulphuret of barytes.
<i>Liver of sulphur, magnesian.</i>	{ Sulphuret of magnesia.
	{ Magnesian sulphuret.
<i>Liver of sulphur, volatile alkaline.</i>	{ Ammoniacal sulphuret.
	{ Sulphuret of ammoniac.
<i>Luna cornea.</i>	Muriat of silver.
<i>Magistery of bismuth.</i>	Oxyd of bismuth by the nitric acid.
<i>Magistery of lead.</i>	Precipitated oxyd of lead.
<i>Magistery of sulphur.</i>	Precipitated sulphur.
<i>Magnesia alba.</i>	Carbonat of magnesia.
<i>Magnesia aerated, of Bergman.</i>	Carbonat of magnesia.
<i>Magnesia black.</i>	Black oxyd of manganese.
<i>Magnesia caustic.</i>	Magnesia.
<i>Magnesia cretaceous.</i>	Carbonat of magnesia.
<i>Magnesia effervescing.</i>	Carbonat of magnesia.
<i>Magnesia fluorated.</i>	Fluat of magnesia.
<i>Magnesia spathic.</i>	Fluat of magnesia.
<i>Malusite salts.</i>	Malites of potash, of soda, &c.
<i>Massicot.</i>	Yellow oxyd of lead.
<i>Matter of heat.</i>	Caloric.
<i>Matter of fire.</i>	{ This term has been used to signify light, caloric, and phlogiston.
<i>Matter pearly of Kerkringius.</i>	{ White oxyd of antimony by precipitation.

Matter

ANCIENT NAMES.

*Matter colouring of Prussian blue.**Mephiticated metals, earths, &c.**Mercury acetated.**Mercurius dulcis.**Mercury precipitate, white.**Mercury of metals.**Minium.**Mophet, atmospherical.**Molybden, saline compositions of.**Mucilage.**Muriated metals.**Muriated gold, or reguline salt of }
gold.**Muriated mercury, corrosive.*

MODERN NAMES.

Pruffic acid.

Carbonats of metals, &c.

Acetite of mercury.

Mild mercurial muriat.

Mercurial muriat by precipitation.

Beccher's hypothetical principle.

Red oxyd of lead, or minium.

Azotic gas.

Molybdats.

Mucus.

Muriats of different metals.

} Muriat of gold.

Corrosive mercurial muriat.

*Natron, or mineral natrum.**Nitre.**Nitre ammoniacal.**Nitre argillous.**Nitre calcareous.**Nitre cubic.**Nitre Egyptian.**Nitre fixed by itself.**Nitre lunar.**Nitre of arsenic.**Nitre of bismuth.**Nitre of cobalt.**Nitre of copper.**Nitre of iron.**Nitre of lead.**Nitre of magnesia.**Nitre of manganese.**Nitre of nickel.**Nitre of pondercus earth.**Nitre of silver.**Nitre of tin.**Nitre of zink.**Nitre prismatic.**Nitre quadrangular.**Nitre rhomboidal.**Nitre saturnine.*

Carbonat of soda.

Nitrat of potash, or nitre.

Ammoniacal nitrat.

Nitrat of alumine.

{ Nitrat of lime.

{ Calcareous nitrat.

Nitrat of soda.

Nitrat of soda.

Carbonat of potash.

Nitrat of silver.

Nitrat of arsenic.

Nitrat of bismuth.

Nitrat of cobalt.

Nitrat of copper.

Nitrat of iron.

Nitrat of lead.

Nitrat of magnesia.

Nitrat of manganese.

Nitrat of nickel.

{ Barytic nitrat.

{ Nitrat of barytes.

Nitrat of silver.

Nitrat of tin.

Nitrat of zink.

Nitrat of potash.

Nitrat of soda.

Nitrat of soda.

Nitrat of lead.

ANCIENT NAMES.	MODERN NAMES.
<i>Ochre.</i>	Yellow oxyd of iron.
<i>Oil of lime.</i>	Calcareous muriat.
<i>Oil of philosophers.</i>	Empyreumatic fixed oil.
<i>Oil of tartar per deliquium.</i>	{ Potash mixed with carbonat of potash in deliquescence.
<i>Oil of vitriol.</i>	Sulphuric acid.
<i>Oils æthereal.</i>	Volatile animal oils.
<i>Oils animal.</i>	Volatile oils.
<i>Oils empyreumatic.</i>	Empyreumatic oils.
<i>Oils essential.</i>	Volatile oils.
<i>Oils expressed.</i>	Fixed oils.
<i>Oils gross.</i>	Fixed oils.
<i>Oils unctuous.</i>	Fixed oils.
<i>Ore of antimony.</i>	Native sulphuret of antimony.
<i>Ore of iron, of marshes.</i>	{ Iron ore, containing phosphat of iron.
<i>Pewter.</i>	Alloy of copper and tin, pewter.
<i>Phlogiston.</i>	Stahl's hypothetical principle.
<i>Phosphat ammoniacal.</i>	{ Ammoniacal phosphat. Phosphat of ammoniac.
<i>Phosphat of barytes.</i>	{ Phosphat of barytes. Barytic phosphat.
<i>Phosphat calcareous.</i>	Phosphat of lime.
<i>Phosphat of magnesia.</i>	Magnesian phosphat.
<i>Phosphat of potash.</i>	Phosphat of potash.
<i>Phosphat of soda.</i>	Phosphat of soda.
<i>Phosphorus, Baldwin's.</i>	Dry calcareous nitrite.
<i>Phosphorus of Kunkel.</i>	Phosphorus.
<i>Phosphorus of Homberg.</i>	Dry calcareous muriat.
<i>Platina.</i>	Platina.
<i>Plumbago.</i>	Carburet of iron.
<i>Pompholix.</i>	Sublimated oxyd of zink.
<i>Potash, or potashes common.</i>	Impure carbonat of potash.
<i>Powder of algaroth.</i>	{ Oxyd of antimony by the muriatic acid.
<i>Powder of count de Palma.</i>	Carbonat of magnesia.
<i>Powder of Sentinelly.</i>	Carbonat of magnesia.
<i>Precipitate golden, or purple of Cassius.</i>	{ Oxyd of gold precipitated by tin.
<i>Precipitate red.</i>	{ Red oxyd of mercury by the nitric acid.
<i>Precipitate per se.</i>	Red oxyd of mercury by fire.
<i>Precipitate yellow.</i>	{ Yellow oxyd of mercury by the sulphuric acid.
<i>Precipitate white by the muriatic acid.</i>	{ Muriat of mercury by precipita- tion.

Principle

ANCIENT NAMES.	MODERN NAMES.
<i>Principle acidifying.</i>	Oxygen.
<i>Principle astringent.</i>	Gallic acid.
<i>Principle inflammable, see phlogiston.</i>	
<i>Principle mercurial.</i>	Beccher's hypothetical principle.
<i>Principle of charcoal.</i>	Carbon.
<i>Principle forbile of Ladböck.</i>	Oxygen.
<i>Prussite calcareous.</i>	{ Calcareous prussiat.
	{ Prussiat.
<i>Prussite of soda.</i>	Prussiat of soda.
<i>Pyrites of copper.</i>	Sulphuret of copper.
<i>Pyrites martial.</i>	Sulphuret of iron.
<i>Pyrophore of Homberg.</i>	{ Carbonated sulphuret of alumine.
	{ Pyrophore of Homberg.
<i>Realgar.</i>	Red fulphurated oxyd of arsenic.
<i>Realgites, salts formed with aqua-regia.</i>	{ Nitro-muriats.
<i>Regulus.</i>	{ A word used to signify the metallic state.
<i>Regulus of antimony.</i>	Antimony.
<i>Regulus of arsenic.</i>	Arsenic.
<i>Regulus of cobalt.</i>	Cobalt.
<i>Regulus of manganese.</i>	Manganese.
<i>Regulus of molybden.</i>	Molybden.
<i>Regulus of syderite.</i>	Phosphuret of iron.
<i>Rust of copper.</i>	Green oxyd of copper.
<i>Rust of iron.</i>	Carbonat of iron.
<i>Rubine of antimony.</i>	{ Vitreous brown fulphurated oxyd of antimony.
<i>Saffron of mars.</i>	Oxyd of iron.
<i>Saffron of mars, aperitive.</i>	Carbonat of iron.
<i>Saffron of mars, astringent.</i>	Brown oxyd of iron.
<i>Saffron of metals.</i>	{ Demi-vitreous sulphurated oxyd of antimony.
<i>Sal ammoniac.</i>	{ Ammoniacal muriat.
	{ Muriat of ammoniac.
<i>Sal ammoniac fixed.</i>	{ Calcareous muriat.
	{ Muriat of lime.
<i>Sal de duobus.</i>	Sulphat of potash.
<i>Sal polychrest of Glafer.</i>	Sulphat of potash.
<i>Sal polychrest of Rochelle.</i>	Tartrite of soda.
<i>Sal sodæ, see soda.</i>	
<i>Salt acetous ammoniacal.</i>	{ Ammoniacal acetite.
	{ Acetite of ammoniac.

ANCIENT NAMES.	MODERN NAMES.
<i>Salt acetous calcareous.</i>	{ Calcareous acetite. } Acetite of lime.
<i>Salt acetous magnesian.</i>	{ Magnesian acetite. } Acetite of magnesia.
<i>Salt acetous martial.</i>	Acetite of iron.
<i>Salt acetous mineral.</i>	Acetite of soda.
<i>Salt acetous of argill.</i>	Aluminous acetite.
<i>Salt acetous of zink.</i>	Acetite of zink.
<i>Salt ammoniacal cretaceous.</i>	Ammoniacal carbonat.
<i>Salt ammoniacal fixed.</i>	{ Calcareous muriat. } Muriat of lime.
<i>Salt ammoniacal nitrous.</i>	Nitrat of ammoniac.
<i>Salt ammoniacal secret of Glauber.</i>	Sulphat of ammoniac.
<i>Salt ammoniacal sedative.</i>	Ammoniacal borat.
<i>Salt ammoniacal sthiatic.</i>	Fluat of ammoniac.
<i>Salt ammoniacal vitrislic.</i>	Ammoniacal sulphat.
<i>Salt bitter surging.</i>	{ Magnesian sulphat. } Sulphat of magnesia.
<i>Salt common.</i>	Muriat of soda.
<i>Salt febrifuge of Sylvius.</i>	Muriat of potash.
<i>Salt fusible of urine.</i>	Phosphat of soda and ammoniac.
<i>Salt, Glauber's.</i>	Sulphat of soda.
<i>Salt marine argillous.</i>	{ Aluminous muriat. } Muriat of alumine.
<i>Salt marine calcareous.</i>	{ Calcareous muriat. } Muriat of lime.
<i>Salt marine magnesian.</i>	{ Magnesian muriat. } Muriat of magnesia.
<i>Salt marine of iron.</i>	Muriat of iron.
<i>Salt marine of zink.</i>	Muriat of zink.
<i>Salt native of urine.</i>	Phosphat of soda and ammoniac.
<i>Salt, neutral arsenical, of Macquer.</i>	Acidulous arseniat of potash.
<i>Salt of alembroth.</i>	Ammoniacal-mercurial muriat.
<i>Salt of amber, obtained by crystallization.</i>	{ Crystallized succinic acid.
<i>Salt of colcothar.</i>	{ Sulphat of iron, in a state little } known.
<i>Salt of Epsom.</i>	Sulphat of magnesia.
<i>Salt of Jupiter.</i>	Muriat of tin.
<i>Salt of milk.</i>	Sugar of milk.
<i>Salt of Schedschutz.</i>	Magnesian sulphat.
<i>Salt of Sedlitz.</i>	Sulphat of magnesia.
<i>Salt of Segner.</i>	Sebat of potash.
<i>Salt of Seignette.</i>	Tartrate of soda.
<i>Salt of sorrel.</i>	Acidulous oxalat of potash.
<i>Salt of wisdom.</i>	Ammoniacal-mercurial muriat.
<i>Salt of wormwood, common.</i>	Carbonat of potash.

ANCIENT NAMES.

Salt-petre.
Salt reguline of gold.
Salt sedative.
Salt sedative mercurial.
Salt sedative sublimated.
Salt stanno-nitrous.
Salt sulphureous, of Stahl.
Salt vegetable.
Salt volatile of amber.
Salt wonderful pearly.
Saturn.
Selenite.
Silver muriated.
Silver supernitrated.

Snow of antimony.

Soaps acid.
Soaps alkaline.
Soaps earthy, of Mr. Bertholet.
Soaps metallic, of Mr. Bertholet.
Soap of Starky.
Soda caustic.
Soda cretaceous.

Spanish-white.

Spar ammoniacal.
Spar calcareous.
Spar fluor.
Spar ponderous.
Spirits acid.
Spirit acid, of box.

Spirit alkaline volatile.

Spirit ardent.
Spirit of mindererus.
Spirit of nitre.
Spirit of nitre dulcified.
Spirit of nitre smoking.
Spirit of salt.
Spirit of sal ammoniac.
Spirit of Venus.
Spirit of vitriol.
Spirit of wine.
*Spirit rector, or the matter of odour }
in flowers. }*

MODERN NAMES.

Nitrat of potash, or nitre.
Muriat of gold.
Boracic acid.
Borat of mercury.
Sublimated boracic acid.
Nitrat of tin.
Sulphite of potash.
Tartrite of potash.
Sublimated succinic acid.
Surfaturated phosphat of soda.
Lead.
Sulphat of lime.
Muriat of silver.
Molten nitrat of silver.
{ White sublimated oxyd of anti-
} mony.
Acid soaps.
Alkaline soaps.
Earthy soaps.
Metallic soaps.
Saponul of potash.
Soda.
Carbonat of soda.
{ White oxyd of lead by the ace-
} tous acid.
Ammoniacal fluat.
Carbonat of lime.
Calcareous fluat.
Sulphat of barytes.
Acids diluted with water.
Pyroligneous acid.
{ Ammoniac gas, or ammoniacal
} gas.
Alcohol.
Ammoniacal acetite.
Nitric acid diluted with water.
Nitric alcohol.
Nitrous acid.
Muriatic acid.
Ammoniac.
Acetic acid.
Sulphuric acid diluted with water.
Alcohol.

{ Aroma.

ANCIENT NAMES.

Spirit volatile of sal ammoniac.
Spiritus sylvestre, of Helmont.
Sublimate corrosive.
Sugar canded.
Sugar of lead.
Sugar, or salt of milk.
Sulphur golden of antimony.
Syderite.
Syderotete of Mr. de Morveau.

Tartar.
Tartar ammoniacal.
Tartar antimoniated.
Tartar calcareous.
Tartar chalybeated.
Tartar cretaceous.
Tartar crude.
Tartar cupreous.
Tartar emetic.
Tartar of magnesia.
Tartar of potash.
Tartar of soda.
Tartar martial soluble.
Tartar naphiticated.
Tartar mercurial.
Tartar saturnine.
Tartar spathic, or of spar.
Tartar soluble.
Tartar sibiicated.
Tartar tartarised.
Tartar tartarised containing anti-
mony.
Tartar vitriolated.
Tincture acrid of tartar.
Tinctures spirituous.
Tin muriated.
Tungstein.
Turbith mineral.
Turbith nitrous.

MODERN NAMES.

Ammoniac diluted with water.
 Carbonic acid.
 Corrosive muriat of mercury.
 Chrystallized sugar.
 Acetite of lead.
 Sugar of milk.
 { Orange-coloured sulphurated oxyd
 } of antimony.
 Phosphat of iron.
 Phosphuret of iron.
 Acidulous tartrite of potash.
 Ammoniacal tartrite.
 Antimoniated tartrite of potash.
 Tartrite of lime.
 Ferruginous tartrite of potash.
 Carbonat of potash.
 Tartar.
 Tartrite of copper.
 Antimoniated tartrite of potash.
 Tartrite of magnesia.
 Tartrite of potash.
 Tartrite of soda.
 Ferruginous tartrite of potash.
 Carbonat of potash.
 Mercurial tartrite.
 Tartrite of lead.
 Fluat of potash.
 Tartrite of potash.
 Antimoniated tartrite of potash.
 Tartrite of potash.
 { Tartrite of potash furcompounded
 } with antimony.
 Sulphat of potash.
 Alcohol of potash.
 Resinous alcohols.
 Muriat of tin.
 Tunstein, or tungstein.
 { Yellow oxyd of mercury by the
 } sulphuric acid.
 { Yellow oxyd of mercury by the
 } nitric acid.

ANCIENT NAMES.	MODERN NAMES.
<i>Verdegris.</i>	Green oxyd of copper.
<i>Verdegris of the shops.</i>	{ Acetite of copper, with excess of oxyd of copper.
<i>Venus.</i>	Copper.
<i>Vinegar distilled.</i>	Acetous acid.
<i>Vinegar saturn.</i>	Acetite of lead.
<i>Vinegar radical.</i>	Acetic acid.
<i>Vitriol ammoniacal.</i>	Ammoniacal sulphat.
<i>Vitriol blue, or Roman vitriol.</i>	Sulphat of copper.
<i>Vitriol green, or copperas.</i>	Sulphat of iron.
<i>Vitriol magnesian.</i>	Sulphat of magnesia.
<i>Vitriol martial.</i>	Sulphat of iron.
<i>Vitriol of antimony.</i>	Sulphat of antimony.
<i>Vitriol of clay, or argile.</i>	Sulphat of alumine.
<i>Vitriol of bismuth.</i>	Sulphat of bismuth.
<i>Vitriol of cobalt.</i>	Sulphat of cobalt.
<i>Vitriol of copper.</i>	Sulphat of copper.
<i>Vitriol of Cyprus.</i>	Sulphat of copper.
<i>Vitriol of lead.</i>	Sulphat of lead.
<i>Vitriol of manganese.</i>	Sulphat of manganese.
<i>Vitriol of mercury.</i>	Sulphat of mercury.
<i>Vitriol of nickel.</i>	Sulphat of nickel.
<i>Vitriol of platina.</i>	Sulphat of platina.
<i>Vitriol of potash.</i>	Sulphat of potash.
<i>Vitriol of silver.</i>	Sulphat of silver.
<i>Vitriol of soda.</i>	Sulphat of soda.
<i>Vitriol of tin.</i>	Sulphat of tin.
<i>Vitriol of zinc.</i>	Sulphat of zinc.
<i>Vitriol white.</i>	Sulphat of zinc.
<i>Water.</i>	Water.
<i>Wolfram of Mess. d' Elhuyar.</i>	Tunstein.
<i>Zinc.</i>	Zinc.

THE
 MODERN CHEMICAL NOMENCLATURE
 ENTIRE.

MODERN NAMES.

ACETATS.

- Acetas, tis, s. m.*
Acetat aluminous, or
Acetat of alumine.
Acetas aluminosus.
Acetat ammoniacal, or
Acetat of ammoniac.*
Acetas ammoniacalis.
 Acetat of arsenic.
Acetas arsenici.
 Acetat of barytes.
Acetas barytae.
 Acetat of bismuth.
Acetas bismuthi.
 Acetat of cobalt.
Acetas cobalti.
 Acetat of copper.
Acetas cupri.
 Acetat of gold.
Acetas auri.
 Acetat of iron.
Acetas ferri.

ANCIENT NAMES.

{ SALTS formed by the union of
 the acetic acid, or radical vine-
 gar, with different bases.

* These two manners of expressing the basis of a neutral salt will not again be repeated; but the one or the other shall, without distinction, be used. These first examples are sufficient to shew that either the substantive or the adjective may be used with equal propriety. The same observation agrees also with the Latin Nomenclature.

MODERN NAMES.

ANCIENT NAMES.

Acetat of lead.

Acetas plumbi.

Acetat of lime.

Acetas calcareus.

Acetat of magnesia.

Acetas magnesiæ.

Acetat of manganese.

Acetas magnesiæ.

Acetat of mercury.

Acetas hydrargiri.

Acetat of molybden.

Acetas molybdeni.

Acetat of nickel.

Acetas nicroli.

Acetat of platina.

Acetas platinæ.

Acetat of potash.

Acetas potassæ.

Acetat of silver.

Acetas argenti.

Acetat of soda.

Acetas sodæ.

Acetat of tin.

Acetas stanni.

Acetat of tungsten.

Acetas tungsteni.

Acetat of zinc.

Acetas zinci.

Acetites.

Acetis, itis, s m.

Acetite aluminous.

Acetis aluminosus.

Acetite ammoniacal.

Acetis ammoniacalis.

Acetite of antimony.

Acetis stibii.

Acetite of arsenic.

Acetis arsenicalis.

Acetite of barytes.

Acetis baryticus.

Acetite of bismuth.

Acetis bismuthi.

Acetite of cobalt.

Acetis cobalti.

Acetite of copper.

Acetis cupri.

{ Salts formed by the union of the
acetous acid, or distilled vine-
gar, with different bases.

} *Acetated clay.*

} *Mindererus's spirit.*

} *Crystals of Venus.*

MODERN NAMES.	ANCIENT NAMES.
Acetite of gold. <i>Acetis auri.</i>	
Acetite of iron. <i>Acetis ferri.</i>	
Acetite of lead. <i>Acetis plumbi.</i>	} Sugar of lead. } Super-acetated lead.
Acetite of lime. <i>Acetis calcareus.</i>	
Acetite of magnesia. <i>Acetis magnesiæ.</i>	} Acetous salt of magnesia. }
Acetite of manganese. <i>Acetis manganesi.</i>	
Acetite of mercury. <i>Acetis hydrargiri.</i>	} Foliated earth of mercury. }
Acetite of molybden. <i>Acetis molybdeni.</i>	
Acetite of nickel. <i>Acetis niccolæ.</i>	
Acetite of platina. <i>Acetis platini.</i>	
Acetite of potash. <i>Acetis potassæ.</i>	} Foliated earth of tartar. }
Acetite of silver. <i>Acetis argenti.</i>	
Acetite of soda. <i>Acetis sodæ.</i>	} Mineral foliated earth. }
Acetite of tin. <i>Acetis stanni.</i>	
Acetite of tunstein. <i>Acetis tunsteni.</i>	
Acetite of zinc. <i>Acetis zinci.</i>	} Acetous salt of zinc. }
Acid acetic. <i>Acidum aceticum.</i>	} Radical vinegar. } Spirit of Venus.
Acid acetous. <i>Acidum acetosum.</i>	} Acetous acid. } Distilled vinegar.
Acid arsenic. <i>Acidum arsenicum.</i>	} Arsenical acid. }
Acid benzoic. <i>Acidum benzoicum.</i>	} Acid of Benjamin. }
Acid benzoic sublimated. <i>Acidum benzoicum sublimatum.</i>	} Flowers of Benjamin. }
Acid boracic. <i>Acidum boracicum.</i>	} Volatile narcotic salt of vitriol. } Sedative salt, acid of borax.
Acid bombyc. <i>Acidum bombycum.</i>	} Acid of silk-worms. }

MODERN NAMES.	ANCIENT NAMES.
Acid carbonic. <i>Acidum carbonicum.</i>	{ Gas Sylvestre, of Van Helmont. Spiritus sylvestris. Fixed air, of Dr. Black. Aerial acid.
	{ Atmospheric acid. Mephitic acid. Cretaceous acid. Acid of charcoal.
Acid citric. <i>Acidum citricum.</i>	{ Lemon juice.
Acid fluoric. <i>Acidum fluoricum.</i>	{ Fluoric acid. Acid of spar.
Acid formic. <i>Acidum formicum.</i>	{ Formic acid, acid of ants.
Acid gallic. <i>Acidum gallicum, seu gallaceum.</i>	{ Astringent principle. Gallic acid.
Acid lactic. <i>Acidum lacticum.</i>	{ Sourer whey, galactic acid.
Acid lithic <i>Acidum lithicum.</i>	{ Acid of bezoar. Lithiastic acid.
Acid malic. <i>Acidum malicum.</i>	{ Acid of apples. Mulsian acid.
Acid molybdic. <i>Acidum molybdicum.</i>	{ Acid of molybden. Acid of wolfram.
Acid muriatic. <i>Acidum muriaticum.</i>	{ Acid of sea-salts. Smoking spirit of salt. Marine acid.
Acid muriatic oxygenated. <i>Acidum muriaticum oxygenatum.</i>	{ Dephlogisticated marine acid. Aerated marine acid.
Acid nitrous. <i>Acidum nitrosum.</i>	{ Phlogisticated nitrous acid. Smoking nitrous acid. Smoking spirit of nitre.
Acid nitric. <i>Acid nitricum.</i>	{ White nitrous acid. Degazated nitrous acid. Dephlogisticated nitrous acid.
Acid nitro-muriatic. <i>Acidum nitro-muriaticum.</i>	{ Aqua regia. Regaline acid.
Acid oxalic. <i>Acidum oxalicum.</i>	{ Acid of sorrel. Saccharine acid. Acid of sugar.
Acid phosphorous. <i>Acidum phosphorosum.</i>	{ Volatile phosphoric acid.
Acid phosphoric. <i>Acidum phosphoricum.</i>	{ Acid of phosphorus. Acid of urine.
Acid Pruffic. <i>Acidum Prufficum.</i>	{ Colouring matter of Prussian blue.
Acid pyro-ligneous. <i>Acidum pyro-lignosum.</i>	{ Empyreumatic acid spirit of box.

MODERN NAMES	ANCIENT NAMES.
Acid pyro-mucous. <i>Acidum pyro-mucosum.</i>	} Spirit of honey, of sugar, &c.
Acid pyro-tartareous. <i>Acidum pyro-tartarosum.</i>	} Spirit of tartar.
Acid saccho-lactic. <i>Acidum saccho-lacticum.</i>	} Acid of the sugar of milk.
Acid sebatic. <i>Acidum sebaticum.</i>	} Acid of fat.
Acid succinic. <i>Acidum succinicum.</i>	} Volatile salt of amber. } Acid of amber.
Acid sulphureous. <i>Acidum sulphureosum.</i>	} Sulphureous acid. } Volatile sulphureous acid. } Phlogisticated vitriolic acid. } Spirit of sulphur.
Acid sulphuric. <i>Acidum sulphuricum.</i>	} Acid of sulphur. } Vitriolic acid. } Oil of vitriol. } Spirit of vitriol.
Acid tartareous. <i>Acidum tartarosum.</i>	} Acid of tartar.
Acid tungstic. <i>Acidum tungsticum.</i>	} Acid of tungstein. } Acid of wolfram.
Affinity. <i>Affinitas.</i>	} Affinity.
Aggregation. <i>Aggregatio.</i>	} Aggregation.
Air atmospheric. <i>Aer atmosphaericus.</i>	} Atmospheric air.
Alkalies. <i>Alkalis.</i>	} Alkalies in general.
Alcohol. <i>Alcohol, indecl.</i>	} Spirit of wine. } Ardent spirits.
Alcohol of potash. <i>Alcohol potassæ.</i>	} Lily of Paracelsus. } Acid tincture of tartar.
Alcohol nitric. <i>Alcohol nitricum.</i>	} Dulsified spirit of nitre.
Alcohol resinous. <i>Alcohol resinosa.</i>	} Spirituous tinctures.
Alloy, or allay. <i>Connubium metallicum.</i>	} Alloy of metals.
Alumine. <i>Alumina.</i>	} Earth of alum. } Basis of alum. } Pure argillous earth.
Amalgam. <i>Amalgom.</i>	} Amalgom.
Ammoniac. <i>Ammoniaca.</i>	} Volatile alkali caustic. } Fluor volatile alkali. } Volatile spirit of sal ammoniac.

Antimony.

MODERN NAMES.	ANCIENT NAMES.
Antimony. <i>Antimonium, stibium.</i>	} <i>Regulus of antimony.</i>
Argile, or clay, a mixture of alumine and silice. <i>Argilla.</i>	} <i>Clay, or argillous earth.</i>
Aroma. <i>Aroma.</i>	} <i>Odoriferous principle of flowers.</i>
Arseniats. <i>Arsenias, tis, s. m.</i>	} <i>Arsenical salts.</i>
Arseniat acidulous of potash. <i>Arsenias acidulus potassæ.</i>	} <i>Arsenical neutral salt of Macquer.</i>
Arseniat of alumine. <i>Arsenias aluminæ.</i>	
Arseniat of ammoniac. <i>Arsenias ammoniacæ seu am- moniacalis.</i>	} <i>Arsenical ammoniac.</i>
Arseniat of barytes. <i>Arsenias barytæ.</i>	
Arseniat of bismuth. <i>Arsenias bismuthi.</i>	
Arseniat of cobalt. <i>Arsenias cobalti.</i>	
Arseniat of copper. <i>Arsenias cupri.</i>	
Arseniat of gold. <i>Arsenias auri.</i>	
Arseniat of iron. <i>Arsenias ferri.</i>	
Arseniat of lime. <i>Arsenias calcis.</i>	
Arseniat of magnesia. <i>Arsenias magnesiæ.</i>	
Arseniat of manganese. <i>Arsenias magnesi.</i>	
Arseniat of mercury. <i>Arsenias hydrargiri.</i>	
Arseniat of molybden. <i>Arsenias molybdeni.</i>	
Arseniat of nickel. <i>Arsenias niccoli.</i>	
Arseniat of platina. <i>Arsenias platini.</i>	
Arseniat of potash. <i>Arsenias potassæ.</i>	
Arseniat of silver. <i>Arsenias argenti.</i>	

MODERN NAMES.

- Arseniat of soda.
Arsenias sodæ.
 Arseniat of tin.
Arsenias stanni.
 Arseniat of tungstein.
Arsenias tungsteni.
 Arseniat of zinc.
Arsenias zinci.

ANCIENT NAMES.

- Barytes.
Baryta.
- Balsams.
Balsama.
- Benzoin.
Benzoe.
- Benzoats.
Benzoas, tis, s. m.
- Benzoat of alumine.
Benzoas aluminosus.
- Benzoat of ammoniac.
Benzoas ammoniacalis.
- Benzoat of antimony.
Benzoas stibii.
- Benzoat of arsenic.
Benzoas arsenicalis.
- Benzoat of barytes.
Benzoas baryticus.
- Benzoat of bismuth.
Benzoas bismuthi.
- Benzoat of cobalt.
Benzoas cobalti.
- Benzoat of copper.
Benzoas cupri.
- Benzoat of gold.
Benzoas auri.
- Benzoat of iron.
Benzoas ferri.
- Benzoat of lead.
Benzoas plumbi.
- Benzoat of lime.
Benzoas calcareus.
- Ponderous earth.*
Barytes.
Basis of ponderous spar.
Euquet's balsams. (Resins united with a concrete acid salt.)
Benzoin, or Benjamin.
 { Salts formed by the union of the benzoic acid with different bases.
 { The salts of this genus have no appellations in the ancient nomenclature.

MODERN NAMES.	ANCIENT NAMES.
Benzoat of magnesia. <i>Benzoas magnesiæ.</i>	
Benzoat of manganese. <i>Benzoas magnesi.</i>	
Benzoat of mercury. <i>Benzoas hydrargiri.</i>	
Benzoat of molybden. <i>Benzoas molybdeni.</i>	
Benzoat of nickel. <i>Benzoas niccoli.</i>	
Benzoat of platina. <i>Benzoas platini.</i>	
Benzoat of potash. <i>Benzoas potassæ.</i>	
Benzoat of silver. <i>Benzoas argenti.</i>	
Benzoat of soda. <i>Benzoas sodæ.</i>	
Benzoat of tin. <i>Benzoas stanni.</i>	
Benzoat of tungstein. <i>Benzoas tungsteni.</i>	
Benzoat of zinc. <i>Benzoas zinci.</i>	
Bismuth. <i>Bismuthum.</i>	} <i>Bismuth.</i>
Bitumens. <i>Bitumina.</i>	} <i>Bitumens.</i>
Bombiat. <i>Bombias, tis, s. m.</i>	{ Salts formed by the union of the bombic acid with different bases. This genus of salt had no appella- tion in the ancient nomencla- ture.
Bombiat of alumine. <i>Bombias aluminosus.</i>	
Bombiat of ammoniac. <i>Bombias ammoniacalis.</i>	
Bombiat of antimony. <i>Bombias stibii.</i>	
Bombiat of arsenic. <i>Bombias arsenicalis.</i>	
Bombiat of barytes. <i>Bombias baryticus.</i>	
Bombiat of bismuth. <i>Bombias bismuthi.</i>	
Bombiat of cobalt. <i>Bombias cobalti.</i>	

MODERN NAMES.	ANCIENT NAMES.
Bombiat of copper.	
<i>Bombias cupri.</i>	
Bombiat of gold.	
<i>Bombias auri.</i>	
Bombiat of lead.	
<i>Bombias plumbi.</i>	
Bombiat of iron.	
<i>Bombias ferri.</i>	
Bombiat of lime.	
<i>Bombias calcareus.</i>	
Bombiat of magnesia.	
<i>Bombias magnesiæ.</i>	
Bombiat of manganese.	
<i>Bombias magnesi.</i>	
Bombiat of mercury.	
<i>Bombias hydrargiri.</i>	
Bombiat of molybden.	
<i>Bombias molybdeni.</i>	
Bombiat of nickel.	
<i>Bombias niccoli.</i>	
Bombiat of platina.	
<i>Bombias platini.</i>	
Bombiat of potash.	
<i>Bombias potassæ.</i>	
Bombiat of silver.	
<i>Bombias argenti.</i>	
Bombiat of soda.	
<i>Bombias sodæ.</i>	
Bombiat of tin.	
<i>Bombias stanni.</i>	
Bombiat of tunstein.	
<i>Bombias tunsteni.</i>	
Bombiat of zinc.	
<i>Bombias zinci.</i>	
Borat.	} Borax.
<i>Boras, tis, s. m.</i>	
Borat aluminous.	} Argillous borax.
<i>Boras aluminosus.</i>	
Borat ammoniacal.	} Ammoniacal borax.
<i>Boras ammoniacalis.</i>	} Sedative sal ammoniac.
Borat of antimony.	} Borax of antimony.
<i>Boras sibi.</i>	
Borat of arsenic.	
<i>Boras arsenici.</i>	
Borat of barytes.	} Ponderous borax.
<i>Boras barytæ.</i>	

MODERN NAMES.	ANCIENT NAMES.
Borat of bismuth. <i>Boras bismuthi.</i>	
Borat of cobalt. <i>Boras cobalti.</i>	} <i>Borax of cobalt.</i>
Borat of copper. <i>Boras cupri.</i>	} <i>Borax of cyprus.</i>
Borat of gold. <i>Boras auri.</i>	
Borat of iron. <i>Boras ferri.</i>	} <i>Borax of iron.</i>
Borat of lead. <i>Boras plumbi.</i>	
Borat of lime. <i>Boras calcis.</i>	
Borat of magnesia. <i>Boras magnesiæ.</i>	} <i>Magnesian borax.</i>
Borat of manganese. <i>Boras magnesiæ.</i>	
Borat of mercury. <i>Boras mercurii.</i>	} <i>Mercurial borax.</i> } <i>Mercurial sedative salt.</i>
Borat of molybden. <i>Boras molybdeni.</i>	
Borat of nickel. <i>Boras niccoli.</i>	
Borat of platina. <i>Boras platini.</i>	
Borat of potash. <i>Boras potassæ.</i>	} <i>Vegetable borax.</i>
Borat of silver. <i>Boras argenti.</i>	
Borat of soda. <i>Boras sodæ.</i>	} <i>Common borax saturated with boracic</i> } <i>acid.</i>
Borat of tin. <i>Boras stanni.</i>	
Borat of tunstein. <i>Boras tunsteni.</i>	
Borat of zinc. <i>Boras zinci.</i>	} <i>Borax of zinc.</i>
Borax of soda, or borat fur- saturated with soda.	} <i>Rough borax.</i> } <i>Tinckal.</i> } <i>Cryfocolla.</i> } <i>Borax of commerce.</i> } <i>Sub-boraxated mineral alkali.</i>

MODERN NAMES.

Caloric.	<i>Caloricum.</i>
Camphor.	<i>Camphora.</i>
Camphorat.	<i>Camphoras, tis, r. m.</i>
Camphorat of alumine.	<i>Camphoras aluminosus.</i>
Camphorat of ammoniac.	<i>Camphoras ammoniacalis.</i>
Camphorat of antimony.	<i>Camphoras stibii.</i>
Camphorat of arsenic.	<i>Camphoras arsenicalis.</i>
Camphorat of barytes.	<i>Camphoras baryticus.</i>
Camphorat of bismuth.	<i>Camphoras bismuthi.</i>
Camphorat of cobalt.	<i>Camphoras cobalti.</i>
Camphorat of copper.	<i>Camphoras cupri.</i>
Camphorat of gold.	<i>Camphoras auri.</i>
Camphorat of iron.	<i>Camphoras ferri.</i>
Camphorat of lead.	<i>Camphoras plumbi.</i>
Camphorat of lime.	<i>Camphoras calcis.</i>
Camphorat of magnesia.	<i>Camphoras magnesie.</i>
Camphorat of manganese.	<i>Camphoras magnesi.</i>
Camphorat of mercury.	<i>Camphoras hydrargiri.</i>
Camphorat of molybden.	<i>Camphoras molybdeni.</i>
Camphorat of nickel.	<i>Camphoras niccoli.</i>
Camphorat of platina.	<i>Camphoras platini.</i>

ANCIENT NAMES.

}	<i>Latent heat.</i>
	<i>Fixed heat.</i>
	<i>Matter of hear.</i>
}	<i>Camphor.</i>
	Salts formed by the union of the camphoric acid with different bases.
}	These salts were unknown to former chymists, and have no names in the ancient nomenclature.

MODERN NAMES.	ANCIENT NAMES.
Camphorat of potash. <i>Camphoras potassæ.</i>	
Camphorat of silver. <i>Camphoras argenti.</i>	
Camphorat of soda. <i>Camphoras sodæ.</i>	
Camphorat of tin. <i>Camphoras stanni.</i>	
Camphorat of tunstein. <i>Camphoras tunsteni.</i>	
Camphorat of zinc. <i>Camphoras zinci.</i>	
Carbon. <i>Carbonicum.</i>	} Pure charcoal.
Carbonat. <i>Carbonas, tis, s. m.</i>	} Salts formed by the union of the } carbonic acid with bases.
Carbonat of alumine. <i>Carbonas aluminosus.</i>	} Cretaceous argil.
Carbonat of ammoniac. <i>Carbonas ammoniaci.</i>	} Concrete volatile alkali. } Ammoniacal chalk.
Carbonat of antimony. <i>Carbonas antimonii.</i>	
Carbonat of arsenic. <i>Carbonas arsenicalis.</i>	
Carbonat of barytes. <i>Carbonas baryticus.</i>	
Carbonat of bismuth. <i>Carbonas bismuthi.</i>	
Carbonat of cobalt. <i>Carbonas cobalti.</i>	
Carbonat of copper. <i>Carbonas cupri.</i>	
Carbonat of gold. <i>Carbonas auri.</i>	
Carbonat of iron. <i>Carbonas ferri.</i>	{ Aperitive saffron of mars. } Rust of iron. } Aërated iron. } Martial chalk. } Mephiticated iron.
Carbonat of lead. <i>Carbonas plumbi.</i>	{ Chalk of lead. } Spathic lead.
Carbonat of lime. <i>Carbonas calcis.</i>	{ Chalk. } Lime-stone. } Aërated calcareous earth. } Calcareous spar. } Cream of lime.

Carbonat

MODERN NAMES.

ANCIENT NAMES.

Carbonat of magnesia. <i>Carbonas magnesia.</i>	{ Magnesian earth. Magnesia alba, of the shops. Bergman's aerated magnesia. Cretaceous magnesia. Magnesian chalk. Kirwan's muriatic earth. Count de Palma's and Sentinelli's powder.
Carbonat of manganese. <i>Carbonas magnesii.</i>	
Carbonat of mercury. <i>Carbonas mercurii.</i>	
Carbonat of molybden. <i>Carbonas molybdeni.</i>	
Carbonat of nickel. <i>Carbonas niccoli.</i>	
Carbonat of platina. <i>Carbonas platini.</i>	
Carbonat of potash. <i>Carbonas potassæ.</i>	{ Salt of tartar. Vegetable fixed alkali. Salt of worm-wood. Aerated vegetable fixed alkali. Cretaceous tartar. Mephiticated tartar. Nitre fixed by itself. Van Helmont's alkacst.
Carbonat of silver. <i>Carbonas argenti.</i>	
Carbonat of soda. <i>Carbonas sodæ.</i>	{ Natrum, or natron. Base of marine salt. Marine, or mineral alkali. Crystals of soda. Cretaceous soda. Aerated soda. Effervescing soda. Mephiticated soda, &c.
Carbonat of tin. * <i>Carbonas stanni.</i>	
Carbonat of tunstein. <i>Carbonas tunsteni.</i>	
Carbonat of zinc. <i>Carbonas zinci.</i>	{ Chalk of zinc. Aerated zinc.
Carburet of iron.	Plumbago.

MODERN NAMES.

- Citrats.
Citras, tis, s. m.
- Citrat of alumine.
Citras aluminosus.
- Citrat of ammoniac.
Citras ammoniaci.
- Citrat of antimony.
Citras stibii.
- Citrat of arsenic.
Citras arsenicalis.
- Citrat of barytes.
Citras baryticus.
- Citrat of bismuth.
Citras bismuthi.
- Citrat of cobalt.
Citras cobalti.
- Citrat of copper.
Citras cupri.
- Citrat of gold.
Citras auri.
- Citrat of iron.
Citras ferri.
- Citrat of lead.
Citras plumbi.
- Citrat of lime.
Citras calcareus.
- Citrat of magnesia.
Citras magnesiæ.
- Citrat of manganese.
Citras magnesi.
- Citrat of mercury.
Citras mercurii.
- Citrat of molybden.
Citras molybdeni.
- Citrat of nickel.
Citras niccoli.
- Citrat of platina.
Citras platini.
- Citrat of potash.
Citras potassæ.
- Citrat of silver.
Citras argenti.

ANCIENT NAMES.

- { Salts formed by the union of the
 acid of lemons with different
 bases.
 { This genus of salt had no name
 in the ancient nomenclature.

MODERN NAMES.	ANCIENT NAMES.
Citrat of soda. <i>Citras sodæ.</i>	
Citrat of tin. <i>Citras stanni.</i>	
Citrat of tungstein. <i>Citras tungsteni.</i>	
Citrat of zinc. <i>Citras zinci.</i>	
Cobalt.	{ <i>Regulus of cobalt.</i>
	{ <i>Cobalt.</i>
Copper.	{ <i>Copper.</i>
<i>Cuprum.</i>	{ <i>Venus.</i>
Diamond.	<i>Diamond.</i>
Ether acetic. <i>Ether aceticum.</i>	{ <i>Acetous ether, or æther.</i>
Ether muriatic. <i>Ether muriaticum.</i>	{ <i>Marine ether.</i>
Ether nitric. <i>Ether nitricum.</i>	{ <i>Nitrous ether.</i>
Ether sulphuric. <i>Ether sulphuricum.</i>	{ <i>Vitriolic ether.</i>
Extract. <i>Extractum.</i>	{ <i>Extract.</i>
Fecula. <i>Fecula.</i>	{ <i>Fecula of vegetables.</i>
Fluats. <i>Fluas, tis, s. m.</i>	{ Salts formed by the fluoric acid, { combined with different bases.
Fluat of alumine. <i>Fluas aluminosus.</i>	{ <i>Argillous fluor.</i>
	{ <i>Spathic argile.</i>
Fluat of ammoniac. <i>Fluas ammoniacalis.</i>	{ <i>Spathic sal ammoniac.</i>
	{ <i>Ammoniacal fluor.</i>
Fluat of antimony. <i>Fluas stibii.</i>	
Fluat of arsenic. <i>Fluas arsenicalis.</i>	
Fluat of barytes. <i>Fluas barytæ.</i>	{ <i>Ponderous fluor.</i>
	{ <i>Barytic fluor.</i>
Fluat of bismuth. <i>Fluas bismuthi.</i>	
Fluat of cobalt. <i>Fluas cobalti.</i>	

MODERN NAMES.	ANCIENT NAMES.
Fluat of copper. <i>Fluas cupri.</i>	
Fluat of gold. <i>Fluas auri.</i>	
Fluat of iron. <i>Fluas ferri.</i>	
Fluat of lead. <i>Fluas plumbi.</i>	
Fluat of lime. <i>Fluas calcareus.</i>	{ Fluor spar. Vitreous spar. Cubic spar. Phosphoric spar. Spathic fluor.
Fluat of magnesia. <i>Fluas magnesiæ.</i>	{ Fluorated magnesia. Spathic magnesia. Magnesian fluor.
Fluat of manganese. <i>Fluas magnesi.</i>	
Fluat of mercury. <i>Fluas mercurii.</i>	
Fluat of molybden. <i>Fluas molybdeni.</i>	
Fluat of nickel. <i>Fluas niccoli.</i>	
Fluat of platina. <i>Fluas platini.</i>	
Fluat of potash. <i>Fluas potassæ.</i>	{ Tartareous fluor. Spathic tartar.
Fluat of silver. <i>Fluas argenti.</i>	
Fluat of soda. <i>Fluas sodæ.</i>	{ Fluor of soda. Spathic soda.
Fluat of tin. <i>Fluas stanni.</i>	
Fluat of tunstein. <i>Fluas tunsteni.</i>	
Fluat of zinc. <i>Fluas zinci.</i>	
Formiats. <i>Formias, tis, s. m.</i>	{ Salts produced by the union of the formic acid with diffe- rent bases. This genus of salt was without a name in the ancient nomen- clature.
Formiat of alumine. <i>Formias aluminosus.</i>	

MODERN NAMES.	ANCIENT NAMES.
Formiat of ammoniac.	
<i>Formias ammoniacalis.</i>	
Formiat of antimony.	
<i>Formias antimonii.</i>	
Formiat of arsenic.	
<i>Formias arsenicalis.</i>	
Formiat of barytes.	
<i>Formias baryticus.</i>	
Formiat of bismuth.	
<i>Formias bismuthi.</i>	
Formiat of cobalt.	
<i>Formias cobalti.</i>	
Formiat of copper.	
<i>Formias cupri.</i>	
Formiat of gold.	
<i>Formias auri.</i>	
Formiat of iron.	
<i>Formias ferri.</i>	
Formiat of lead.	
<i>Formias plumbi.</i>	
Formiat of lime.	
<i>Formias calcareus.</i>	
Formiat of magnesia.	
<i>Formias magnesiæ.</i>	
Formiat of manganese.	
<i>Formias magnesi.</i>	
Formiat of mercury.	
<i>Formias mercurii.</i>	
Formiat of molybden.	
<i>Formias molybdeni.</i>	
Formiat of nickel.	
<i>Formias niccoli.</i>	
Formiat of platina.	
<i>Formias platini.</i>	
Formiat of silver.	
<i>Formias argenti.</i>	
Formiat of soda.	
<i>Formias sodæ.</i>	
Formiat of tin.	
<i>Formias stanni.</i>	
Formiat of tunstein.	
<i>Formias tunsteni.</i>	
Formiat of zinc.	
<i>Formias zinci.</i>	

MODERN NAMES.	ANCIENT NAMES.
Gas.	} Gas, air. } Elastic fluid. } Aëriform fluid.
Gas. <i>Gas.</i>	
Gas, acetous acid. <i>Gas acidum acetsum.</i>	} Acetous acid gas.
Gas ammoniacal. <i>Gas ammoniacale.</i>	
Gas azotic. <i>Gas azoticum.</i>	} Alkaline gas, of Dr. Priestley. } Alkaline air. } Volatile alkali gas.
Gas, carbonic acid. <i>Gas acidum carbonicum.</i>	} Fixed air, of Dr. Black. } Hales's solid air. } Crctaceus acid gas. } Mephitic gas.
Gas, fluoric acid. <i>Gas acidum fluoricum.</i>	} Spathic acid gas, of Dr. Priestley. } Fluoric acid gas.
Gas, hydrogen of marshes. <i>Gas hydrogenium paludum.</i>	} Mophetized inflammable gas. } Inflammable air of marshes.
Gas nitrous. <i>Gas nitrosum.</i>	} Nitrous gas, of Hales and Dr. Priestley. } ley.
Oxygen gas. <i>Gas oxygenium.</i>	} Vital air. } Pure air. } Dephlogificated air, of Dr. Priestley.
Gas, Prussic acid. <i>Gas acidum Prussicum.</i>	} Gas of Prussian blue.
Gas, phosphorized hydrogen. <i>Gas hydrogenium phosphorifatum.</i>	} Phosphoric gas, of Mr. Gengembre.
Gas, sulphurated hydrogen. <i>Gas hydrogenium sulphuratum.</i>	} Hepatic gas, of Bergman. } Sulphur-calinc air.
Gas, sulphureous acid. <i>Gas acidum sulphuricum.</i>	} Sulphureous acid gas. } Vitriolic acid air. of Dr. Priestley.

MODERN NAMES

Gluten.
Gluten.

Gold.
Aurum.

Iron.
Ferrum.

Lactats.
Lactas, tis, s. m.

Lactat of alumine.
Lactas aluminosus.

Lactat of ammoniac.
Lactas ammoniacalis.

Lactat of antimony.
Lactas stibii.

Lactat of arsenic.
Lactas arsenicalis.

Lactat of barytes.
Lactas barytæ.

Lactat of bismuth.
Lactas bismuthi.

Lactat of cobalt.
Lactas cobalti.

Lactat of copper.
Lactas cupri.

Lactat of gold.
Lactas auri.

Lactat of lead.
Lactas plumbi.

Lactat of lime.
Lactas calcareus.

Lactat of iron.
Lactas ferri.

Lactat of magnesia.
Lactas magnesiæ.

Lactat of manganese.
Lactas magnesi.

Lactat of mercury.
Lactas mercurii.

Lactat of molybden.
Lactas molybdeni.

ANCIENT NAMES.

} *Glutenous matter of flower.*
} *Vegeto-animal matter.*

} *Gold.*

} *Iron.*
} *Mars.*

{ Salts formed by the union of the acid of sour whey or lactic acid, with different bases.
These salts were unknown before Scheele, and without names until the present time. Their properties have as yet been very little examined.

MODERN NAMES.

Lactat of nickel.
Lactas niccoli.
 Lactat of platina.
Lactas platini.
 Lactat of potash.
Lactas potassæ.
 Lactat of silver.
Lactas argenti.
 Lactat of soda.
Lactas sodæ.
 Lactat of tin.
Lactas stanni.
 Lactat of tunstein.
Lactas tunstæni.
 Lactat of zinc.
Lactas zinci.

Lead.

Plumbum.

Light.

Lime, or calcareous earth.

Lithiats.

Lithias, tis. s. m.

Lithiat of alumine.

Lithias aluminosus.

Lithiat of ammoniac.

Lithias ammoniacalis.

Lithiat of antimony.

Lithias stibii.

Lithiat of arsenic.

Lithias arsenicalis.

Lithiat of barytes.

Lithias baryticus.

Lithiat of bismuth.

Lithias bismuthi.

Lithiat of cobalt.

Lithias cobalti.

Lithiat of copper.

Lithias cupri.

Lithiat of gold.

Lithias auri.

ANCIENT NAMES.

} Lead.

} Saturn.

} Light.

} Calcareous earth.

} Quick-lime.

Salts formed by the combination of the lithic acid, or acid of the stone sometimes generated in the human bladder, with different bases.

This genus of salts had no name in the ancient nomenclature, because it was not known before the time of Scheele.

MODERN NAMES.

ANCIENT NAMES.

Lithiat of iron.	<i>Lithias ferri.</i>
Lithiat of lead.	<i>Lithias plumbi.</i>
Lithiat of lime.	<i>Lithias calcareus.</i>
Lithiat of magnesia.	<i>Lithias magnesiæ.</i>
Lithiat of manganese.	<i>Lithias magnesi.</i>
Lithiat of mercury.	<i>Lithias mercurii.</i>
Lithiat of molybden.	<i>Lithias molybdeni.</i>
Lithiat of nickel.	<i>Lithias niccoli.</i>
Lithiat of platina.	<i>Lithias platini.</i>
Lithiat of potash.	<i>Lithias potassæ.</i>
Lithiat of silver.	<i>Lithias argenti.</i>
Lithiat of soda.	<i>Lithias sodæ.</i>
Lithiat of tin.	<i>Lithias stanni.</i>
Lithiat of tungsten.	<i>Lithias tungsteni.</i>
Lithiat of zinc.	<i>Lithias zinci.</i>

Malats.

Malas, tis, s. m.

Malat of alumine.	<i>Malas aluminosus.</i>
Malat of ammoniac.	<i>Malas ammoniacalis.</i>
Malat of antimony.	<i>Malas stibii.</i>
Malat of arsenic.	<i>Malas arsenicalis.</i>
Malat of barytes.	<i>Malas baryticus.</i>

Salts formed by the union of the malic acid, or acid of apples with different bases.
 This genus of salts has been without a name in the ancient nomenclature.

ANCIENT NAMES.	MODERN NAMES.
Malat of bismuth.	
<i>Malas bismuthi.</i>	
Malat of cobalt.	
<i>Malas cobalti.</i>	
Malat of copper.	
<i>Malas cupri.</i>	
Malat of gold.	
<i>Malas auri.</i>	
Malat of lead.	
<i>Malas plumbi.</i>	
Malat of lime.	
<i>Malas calcareus.</i>	
Malat of iron.	
<i>Malas ferri.</i>	
Malat of magnesia.	
<i>Malas magnesiæ.</i>	
Malat of manganese.	
<i>Malas magnesi.</i>	
Malat of mercury.	
<i>Malas mercurii.</i>	
Malat of molybden.	
<i>Malas molybdeni.</i>	
Malat of nickel.	
<i>Malas niccoli.</i>	
Malat of platina.	
<i>Malas platini.</i>	
Malat of potash.	
<i>Malas potassæ.</i>	
Malat of silver.	
<i>Malas argenti.</i>	
Malat of soda.	
<i>Malas sodæ.</i>	
Malat of tin.	
<i>Malas stanni.</i>	
Malat of tunstein.	
<i>Malas tunsteni.</i>	
Malat of zinc.	
<i>Malas zinci.</i>	
Manganese.	} <i>Regulus of manganese.</i>
<i>Magnesium.</i>	
Mercury.	} <i>Mercury.</i>
<i>Hydrargirum.</i>	
	} <i>Quick-silver.</i>
Molybdats.	} Salts formed by the union of the molybdic acid with different bases.
<i>Molybdas, tis. s. m.</i>	
	} This genus of salts was without a name in the ancient nomencla- ture.
	Molybdat

MODERN NAMES.

Molybdat of alumine.

Molybdas aluminofus.

Molybdat of ammoniac.

Molybdas ammoniacalis.

Molybdat of antimony.

Molybdas stibii.

Molybdat of arsenic.

Molybdas arsenicalis.

Molybdat of barytes.

Molybdas baryticus.

Molybdat of bismuth.

Molybdas bismuthi.

Molybdat of cobalt.

Molybdas cobalti.

Molybdat of copper.

Molybdas cupri.

Molybdat of gold.

Molybdas auri.

Molybdat of iron.

Molybdas ferri.

Molybdat of lead.

Molybdas plumbi.

Molybdat of lime.

Molybdas calcareus.

Molybdat of magnesia.

Molybdas magnesiæ.

Molybdat of manganese.

Molybdas magnesi.

Molybdat of mercury.

Molybdas mercurii.

Molybdat of nickel.

Molybdas niccoli.

Molybdat of platina.

Molybdas platini.

Molybdat of potash.

Molybdas potassæ.

Molybdat of silver.

Molybdas argenti.

Molybdat of soda.

Molybdas sodæ.

Molybdat of tin.

Molybdas stanni.

Molybdat of tunstein.

Molybdas tunsteni.

Molybdat of zinc.

Molybdas zinci.

Molybden.

ANCIENT NAMES.

Regulus of molybden.

MODERN NAMES.	ANCIENT NAMES.
Mucus.	<i>Mucilage.</i>
Muriats. <i>Murias, tis, s. m.</i>	{ Salts formed by the union of the muriatic acid with different bases.
Muriat of alumine. <i>Murias aluminosus.</i>	{ <i>Marine alum.</i> { <i>Argillous marine salt.</i>
Muriat of ammoniac. <i>Murias ammoniacalis.</i>	{ <i>Sal ammoniac.</i> { <i>Salmiac.</i>
Muriat of antimony. <i>Murias stibii.</i>	{ <i>Muriated antimony.</i>
Muriat of arsenic. <i>Murias arsenicalis.</i>	
Muriat of arsenic, sublimated. <i>Murias arsenicalis sublimatus.</i>	{ <i>Butter of arsenic.</i>
Muriat of barytes. <i>Murias baryticus.</i>	{ <i>Barytic-marine salt.</i>
Muriat of bismuth. <i>Murias bismuthi.</i>	{ <i>Muriated bismuth.</i>
Muriat of bismuth, sublimated. <i>Murias bismuthi sublimatus.</i>	{ <i>Butter of bismuth.</i>
Muriat of cobalt. <i>Murias cobalti.</i>	{ <i>Sympathetic ink.</i>
Muriat of copper. <i>Murias cupri.</i>	{ <i>Muriated copper.</i>
Muriat of copper, sublimated ammoniacal. <i>Murias cupri.</i>	{ <i>Cupricous ammoniacal flowers.</i>
Muriat of gold. <i>Murias auri.</i>	{ <i>Regaline salt of gold.</i> { <i>Muriated gold.</i>
Muriat of iron. <i>Murias ferri.</i>	{ <i>Muriated iron.</i> { <i>Marine salt of iron.</i>
Muriat of lead. <i>Murias plumbi.</i>	{ <i>Muriated lead.</i> { <i>Plumbum corneum.</i>
Muriat of iron sublimated ammoniacal.	{ <i>Martial ammoniacal flowers.</i>
Muriat of lime. <i>Murias calcareus.</i>	{ <i>Mother ley of sea-salt.</i> { <i>Calcareous marine salt.</i> { <i>Fixed sal ammoniac.</i>
Muriat of magnesia. <i>Murias calcareus.</i>	{ <i>Marine salt, having magnesia for its basis.</i>
Muriat of manganese. <i>Murias magnesi.</i>	{ <i>Muriated manganese.</i>
Muriat of mercury, corrosive. <i>Murias hydrargiri corrosivus.</i>	{ <i>Corrosive sublimate.</i> { <i>Super-muriated mercury.</i>
Muriat of mercury, mild. <i>Murias hydrargiri dulcis.</i>	{ <i>Mercurius dulcis.</i> { <i>Sub-muriated mercury.</i>

MODERN NAMES.	ANCIENT NAMES.
Muriat of mercury sublimated mild. <i>Murias hydrargiri sublimatus.</i>	{ <i>Sweet mercury sublimate.</i> <i>Aquila alba.</i> <i>Sub-muriated mercury sublimate.</i>
Muriat of mercury and ammoniac. <i>Murias hydrargiri et ammoniacalis.</i>	} <i>Salt of alembroth.</i>
Muriat of mercury by precipitation. <i>Murias hydrargiri.</i>	} <i>Salt of wisdom.</i> } <i>White precipitated muriated mercury.</i>
Muriat of molybden. <i>Murias molybdeni.</i>	
Muriat of nickel. <i>Murias niccoli.</i>	
Muriat of platina. <i>Murias platini.</i>	} <i>Muriated platina.</i> } <i>Regaline salt of platina.</i>
Muriat of potash. <i>Murias potassæ.</i>	} <i>Sylvius's febrifuge salt.</i> } <i>Regenerated sea-salt.</i>
Muriat of silver. <i>Murias argenti.</i>	} <i>Luna cornea.</i>
Muriat of soda. <i>Murias sodæ.</i>	} <i>Sea-salt.</i>
Muriat of soda, fossile. <i>Murias sodæ fossilis.</i>	} <i>Salt gem.</i> } <i>Salited fossile alkali.</i>
Muriat of tin. <i>Murias stanni.</i>	} <i>Salt of Jupiter.</i>
Muriat of tin, concrete. <i>Murias stanni.</i>	} <i>Solid butter of tin, of Mr. Beaumé.</i>
Muriat of tin smoking. <i>Murias stanni.</i>	} <i>Libavius's smoking liquor.</i>
Muriat of tin sublimated. <i>Murias stanni.</i>	} <i>Butter of tin.</i>
Muriat of tungstein. <i>Murias tungsteni.</i>	
Muriat of zinc. <i>Murias zinci.</i>	} <i>Marine salt of zinc.</i> } <i>Muriated zinc.</i>
Muriat of zinc sublimated. <i>Murias zinci.</i>	} <i>Butter of zinc.</i>
Muriats oxygenated.	{ <i>New combinations of the oxygenated muriatic acid with potash and soda, discovered by M. Bertholet.</i>
Muriat of potash, oxygenated. <i>Murias oxygenatus potassæ.</i>	

MODERN NAMES.	ANCIENT NAMES.
Muriat of soda, oxygenated. <i>Murias oxygenatus sodæ.</i>	
Nitrats. <i>Nitras, tis. s. m.</i>	} Salts formed by the union of the } nitric acid with different bases.
Nitrat of alumine. <i>Nitras aluminosus.</i>	} Nitrous alum. } Argillaceous nitre.
Nitrat of ammoniac. <i>Nitras ammoniacalis.</i>	} Nitrous sal ammoniac. } Ammoniacal nitre.
Nitrat of antimony. <i>Nitras stibii.</i>	
Nitrat of arsenic. <i>Nitras arsenicalis.</i>	} Nitre of arsenic.
Nitrat of barytes. <i>Nitras baryticus.</i>	} Nitrated barytes. } Nitre of heavy earth.
Nitrat of bismuth. <i>Nitras bismuthi.</i>	} Nitre of bismuth.
Nitrat of cobalt. <i>Nitras cobalti.</i>	} Nitre of cobalt.
Nitrat of copper. <i>Nitras cupri.</i>	} Nitre of copper.
Nitrat of gold. <i>Nitras auri.</i>	
Nitrat of iron. <i>Nitras ferri.</i>	} Nitre of iron. } Martial nitre.
Nitrat of lead. <i>Nitras plumbi.</i>	} Nitre of lead. } Nitre of saturn.
Nitrat of lime. <i>Nitras calcareus.</i>	} Calcareous nitre. } Mother ley of nitre.
Nitrat of magnesia. <i>Nitras magnesiæ.</i>	} Nitre of magnesia. } Magnesian nitre.
Nitrat of manganese. <i>Nitras magnesi.</i>	} Nitre of manganese. } Nitrated manganese.
Nitrat of mercury. <i>Nitras hydrargiri.</i>	} Nitre of mercury. } Mercurial nitre.
Nitrat of mercury in dissolution. <i>Nitras hydrargiri.</i>	} Solution of mercury.
Nitrat of molybden. <i>Nitras molybdeni.</i>	
Nitrat of nickel. <i>Nitras nicoli.</i>	} Nitrated nickel. } Nitre of nickel.
Nitrat of platina. <i>Nitras platini.</i>	
Nitrat of potash, or nitre. <i>Nitras potassæ, vel nitrum.</i>	} Nitre, salt-petre. } Sal prunel. } Nitrated vegetable alkali.

MODERN NAMES.	ANCIENT NAMES.
Nitrat of silver. <i>Nitras argenti.</i>	} Nitre of silver. } Lunar crystals.
Nitrat of silver, molten. <i>Nitras argenti fusus.</i>	
Nitrat of soda. <i>Nitras sodæ.</i>	} Cubic nitre. } Rhomboidal nitre.
Nitrat of tin. <i>Nitras stanni.</i>	
Nitrat of tunstein. <i>Nitras tunsteni.</i>	} Nitre of tin. } Stanno-nitrous salt.
Nitrat of zinc. <i>Nitras zinci.</i>	
Nitrites. <i>Nitris, tis. s. m.</i>	} Nitre of zinc. } Salts formed by the combination of nitrous acid* with different bases, } This genus of salt had no name in the ancient nomenclature, and not known before the late dis- coveries.
Nitrite of alumine. <i>Nitris aluminosus.</i>	
Nitrite of ammoniac. <i>Nitris ammoniacalis.</i>	
Nitrite of antimony. <i>Nitris sibi.</i>	
Nitrite of arsenic. <i>Nitris arsenicalis.</i>	
Nitrite of barytes. <i>Nitris baryticus.</i>	
Nitrite of bismuth. <i>Nitris bismuthi.</i>	
Nitrite of cobalt. <i>Nitris cobalti.</i>	
Nitrite of copper. <i>Nitris cupri.</i>	
Nitrite of gold. <i>Nitris auri.</i>	
Nitrite of iron. <i>Nitris ferri.</i>	
Nitrite of lead. <i>Nitris plumbi.</i>	
Nitrite of lime. <i>Nitris calcareus.</i>	

* That is to say, by an acid of nitre containing less oxygen than that which we have denominated nitric acid, and which forms the *nitrats*.

MODERN NAMES.

ANCIENT NAMES.

Nitrite of magnesia.

Nitris magnesiæ.

Nitrite of manganese.

Nitris magnesiæ.

Nitrite of mercury.

Nitris hydrargiri.

Nitrite of molybden.

Nitris molybdeni.

Nitrite of nickel.

Nitris niccolii.

Nitrite of platina.

Nitris platini.

Nitrite of potash.

Nitris potassæ.

Nitrite of silver.

Nitris argenti.

Nitrite of soda.

Nitris sodæ.

Nitrite of tin.

Nitris stanni.

Nitrite of tungsten.

Nitris tungsteni.

Nitrite of zinc.

Nitris zinci.

Oxalats.

Oxalas, tis. s. m.

Salts formed by the combination
of the oxalic acid with different
bases.

The greater number of these salts
have not been named in the old
nomenclature.

Oxalat acidulous of ammoniac.

Oxalas acidulus ammoniacalis.

Oxalat acidulous of potash.

Oxalas acidulus potassæ.} *Common salt of ferret.*

Oxalat acidulous of soda.

Oxalas acidulus sodæ.

Oxalat of alumine.

Oxalas aluminosus.

Oxalat of ammoniac.

Oxalas ammoniacalis.

Oxalat of antimony.

Oxalas stibii.

Oxalat of arsenic.

Oxalas arsenicalis.

Oxalat of barytes.

Oxalas baryticus.

Oxalat

MODERN NAMES.	ANCIENT NAMES.
Oxalat of bismuth.	
<i>Oxalas bismuthi.</i>	
Oxalat of cobalt.	
<i>Oxalas cobalti.</i>	
Oxalat of copper.	
<i>Oxalas cupri.</i>	
Oxalat of gold.	
<i>Oxalas auri.</i>	
Oxalat of iron.	
<i>Oxalas ferri.</i>	
Oxalat of lead.	
<i>Oxalas plumbi.</i>	
Oxalat of lime.	
<i>Oxalas calcareus.</i>	
Oxalat of magnesia.	
<i>Oxalas magnesiæ.</i>	
Oxalat of manganese.	
<i>Oxalas magnesi.</i>	
Oxalat of mercury.	
<i>Oxalas hydrargiri.</i>	
Oxalat of molybden.	
<i>Oxalas molybdeni.</i>	
Oxalat of nickel.	
<i>Oxalas niccoli.</i>	
Oxalat of platina.	
<i>Oxalas platini.</i>	
Oxalat of potash.	
<i>Oxalas potassæ.</i>	
Oxalat of silver.	
<i>Oxalas argenti.</i>	
Oxalat of soda.	
<i>Oxalas sodæ.</i>	
Oxalat of tin.	
<i>Oxalas stanni.</i>	
Oxalat of tungstein.	
<i>Oxalas tungsteni.</i>	
Oxalat of zinc.	
<i>Oxalas zinci.</i>	
Oxyd arsenical of potash.	} Liver of arsenic.
<i>Oxydum arsenicale potassæ.</i>	
Oxyd white of arsenic.	} White arsenic.
<i>Oxydum arsenici album.</i>	
Oxyd of antimony by the mu- riatic acid and nitric acid.	} Mineral bezoar.
<i>Oxydum stibii.</i>	

MODERN NAMES.	ANCIENT NAMES.
Oxyd of antimony, white, by nitre. <i>Oxydum sibi album nitro confectum.</i>	Diaphoretic antimony. Cerusse of antimony. Kerkringius's pearly matter.
Oxyd of antimony white sublimated. <i>Oxydum sibi album sublimatum.</i>	Snow of antimony. Flowers of antimony. Argentine flowers of regulus of antimony.
Oxyd of antimony by the muriatic acid. <i>Oxydum sibi acido muriatico confectum.</i>	Powder of algaroth.
Oxyd of antimony sulphurated. <i>Oxydum sibi sulphuratum.</i>	Liver of antimony.
Oxyd of antimony sulphurated semi-vitreous. <i>Oxydum sibi sulphuratum semi-vitrum.</i>	Crocus metallorum.
Oxyd of antimony sulphurated orange-coloured. <i>Oxydum sibi sulphuratum aurantiacum.</i>	De-alkalised sulphur-caline antimony. Golden sulphur of antimony. Precipitated sulphur of antimony.
Oxyd of antimony, red sulphurated. <i>Oxydum sibi sulphuratum rubrum.</i>	Kermes mineral. Sulphur-caline antimony.
Oxyd of antimony sulphurated vitreous. <i>Oxydum sibi sulphuratum vitrum.</i>	Glass of antimony.
Oxyd of antimony, brown vitreous sulphurated. <i>Oxydum sibi sulphuratum vitrum fuscum.</i>	
Oxyd of arsenic, white sublimated. <i>Oxydum arsenici album sublimatum.</i>	Flowers of arsenic.
Oxyd of arsenic, yellow sulphurated. <i>Oxydum arsenici sulphuratum luteum.</i>	Orpiment.

MODERN NAMES.	ANCIENT NAMES.
Oxyd of arsenic, red sulphurated. <i>Oxydum arsenici sulphuratum rubrum.</i>	} Red arsenic. } Realgar.
Oxyd of bismuth, white, by the nitric acid. <i>Oxydum bismuthi album acido nitrico confectum.</i>	} Magistery of bismuth. } Spanish white.
Oxyd of bismuth sublimated. <i>Oxydum bismuthi sublimatum.</i>	} Flowers of bismuth.
Oxyd of cobalt, grey, with filice. <i>Oxydum cobalti cinereum cum filice.</i>	
Oxyd of cobalt, vitreous. <i>Oxydum cobalti vitreum.</i>	} Azur. } Smalt.
Oxyd of copper, green. <i>Oxydum cupri viride.</i>	} Verdegris. } Rust of copper.
Oxyd of gold, ammoniacal. <i>Oxydum auri ammoniacale.</i>	} Aurum fulmirans.
Oxyd of gold by tin. <i>Oxydum auri per stannum.</i>	} Precipitate of gold by tin. } Cassius's purple.
Oxyds of iron. <i>Oxyda ferri.</i>	} Saffrons of mars.
Oxyd of iron, brown. <i>Oxydum ferri fuscum.</i>	} Astringent saffron of mars.
Oxyd of iron, yellow. <i>Oxydum ferri luteum.</i>	} Ockre.
Oxyd of iron, black. <i>Oxydum ferri nigrum.</i>	} Æthiops of iron.
Oxyd of iron, red. <i>Oxydum ferri rubrum.</i>	} Colcothar of vitriol.
Oxyds of lead. <i>Oxyda plumbi.</i>	} Calces of lead.
Oxyd of lead, white, by the acetous acid. <i>Oxydum plumbi album per acidum acetosum.</i>	} White lead.
Oxyd of lead, semi-vitreous, or litharge. <i>Oxydum plumbi semi-vitreum.</i>	} Litharge.
Oxyd of lead, yellow. <i>Oxydum plumbi luteum.</i>	} Massicot.
Oxyd of lead, red, or minium. <i>Oxydum plumbi rubrum.</i>	} Minium. } Red lead.

MODERN NAMES.	ANCIENT NAMES.
Oxyd of manganese, white. <i>Oxydum magnesiæ album.</i>	} <i>White calx of manganese.</i>
Oxyd of manganese, black. <i>Oxydum magnesiæ nigrum.</i>	} <i>Black magnesia.</i>
Oxyd of mercury, yellow, by the nitric acid. <i>Oxydum hydrargiri luteum acido nitrico confectum.</i>	} <i>Nitrous turbith.</i>
Oxyd of mercury, yellow, by the sulphuric acid. <i>Oxydum hydrargiri luteum acido sulphurico confectum.</i>	} <i>Turbith mineral. Yellow precipitate.</i>
Oxyd of mercury, blackish. <i>Oxydum hydrargiri nigrum.</i>	} <i>Æthiops per se.</i>
Oxyd of mercury, red, by the nitric acid. <i>Oxydum hydrargiri rubrum acido nitrico confectum.</i>	} <i>Red precipitate.</i>
Oxyd of mercury, red, by fire. <i>Oxydum hydrargiri rubrum per ignem.</i>	} <i>Mercurius precipitatus per se.</i>
Oxyd of mercury, sulphurated black. <i>Oxydum hydrargiri sulphura- tum nigrum.</i>	} <i>Æthiops mineral.</i>
Oxyd of mercury sulphurated red. <i>Oxydum hydrargiri sulphura- tum rubrum.</i>	} <i>Cinnabar.</i>
Oxyd of tin, grey. <i>Oxydum stanni cinereum.</i>	
Oxyd of tin, sublimated. <i>Oxydum stanni sublimatum.</i>	} <i>Flowers of tin.</i>
Oxyd of zinc sublimated. <i>Oxydum zinci sublimatum.</i>	} <i>Flowers of zinc. Pompholix.</i>
Oxyds metallic. <i>Oxyda metallica.</i>	} <i>Calces of metals.</i>
Oxyds, sublimated metallic. <i>Oxyda metallica sublimata.</i>	} <i>Metallic flowers.</i>
Oxygen. <i>Oxygenium.</i>	{ <i>Oxygen. Basis of vital air. Acidifying principle. Empyreal principle. Sorbile principle.</i>

MODERN NAMES.

Phosphats.	
<i>Phosphas, tis, s. m.</i>	
Phosphat of alumine.	
<i>Phosphas aluminosus.</i>	
Phosphat of ammoniac.	
<i>Phosphas ammoniacalis.</i>	
Phosphat of antimony.	
<i>Phosphas stibii.</i>	
Phosphat of arsenic.	
<i>Phosphas arsenicalis.</i>	
Phosphat of barytes.	
<i>Phosphas baryticus.</i>	
Phosphat of bismuth.	
<i>Phosphas bismuthi.</i>	
Phosphat of cobalt.	
<i>Phosphas cobalti.</i>	
Phosphat of copper.	
<i>Phosphas cupri.</i>	
Phosphat of gold.	
<i>Phosphas auri.</i>	
Phosphat of iron.	
<i>Phosphas ferri.</i>	
Phosphat of lead.	
<i>Phosphas plumbi.</i>	
Phosphat of lime.	
<i>Phosphas calcareus.</i>	
Phosphat of magnesia.	
<i>Phosphas magnesiæ.</i>	
Phosphat of manganese.	
<i>Phosphas magnesi.</i>	
Phosphat of mercury.	
<i>Phosphas mercurii.</i>	
Phosphat of molybden.	
<i>Phosphas molybdeni.</i>	
Phosphat of nickel.	
<i>Phosphas nicæli.</i>	
Phosphat of platina.	
<i>Phosphas platini.</i>	
Phosphat of potash.	
<i>Phosphas potassæ.</i>	
Phosphat of silver.	
<i>Phosphas argenti.</i>	
Phosphat of soda.	
<i>Phosphas sodæ.</i>	
Phosphat of soda and ammoniac	
<i>Phosphas sodæ et ammoniacalis.</i>	

ANCIENT NAMES.

{ Salts formed by the union of the phosphoric acid with different bases.

{ *Phosphorical ammoniac.*
{ *Ammoniacal phosphate.*

{ *Sydenite.*
{ *Marsite iron ore.*

{ *Earth of bones.*
{ *Animal earth.*

{ *Phosphate of magnesia.*

{ *Rosy precipitate of mercury.*

MODERN NAMES.	ANCIENT NAMES.
Phosphat saturated with soda.	} <i>Wonderful nearly salt.</i>
<i>Phosphas supersaturatus sodæ.</i>	
Phosphat of tin.	
<i>Phosphas stanni.</i>	
Phosphat of tunstein.	
<i>Phosphas tunsteni.</i>	
Phosphat of zinc.	
<i>Phosphas zinci.</i>	
Phosphites.	} Salts formed by the combination of the phosphorous acid with different bases.
<i>Phosphis, tis, s. m.</i>	
Phosphite of alumine.	
<i>Phosphis aluminosus.</i>	
Phosphite of ammoniac.	
<i>Phosphis ammoniacalis.</i>	
Phosphite of antimony.	
<i>Phosphis sibi.</i>	
Phosphite of arsenic.	
<i>Phosphis arsenicalis.</i>	
Phosphite of barytes.	
<i>Phosphis baryticus.</i>	
Phosphite of bismuth.	
<i>Phosphis bismuthi.</i>	
Phosphite of cobalt.	
<i>Phosphis cobalti.</i>	
Phosphite of copper.	
<i>Phosphis cupri.</i>	
Phosphite of gold.	
<i>Phosphis auri.</i>	
Phosphite of iron.	
<i>Phosphis ferri.</i>	
Phosphite of lead	
<i>Phosphis plumbi.</i>	
Phosphite of lime.	
<i>Phosphis calcareus.</i>	
Phosphite of magnesia.	
<i>Phosphis magnesiæ.</i>	
Phosphite of manganese.	
<i>Phosphis magnesi.</i>	
Phosphite of mercury.	
<i>Phosphis hydrargiri.</i>	
Phosphite of molybden.	
<i>Phosphis molybdeni.</i>	
Phosphite of nickel.	
<i>Phosphis nicoli.</i>	
Phosphite of platina.	
<i>Phosphis platini.</i>	
Phosphite of potash:	
<i>Phosphis potassæ.</i>	

MODERN NAMES.	ANCIENT NAMES.
Phosphite of silver. <i>Phosphis argenti.</i>	
Phosphite of soda. <i>Phosphis sodæ.</i>	
Phosphite of tin. <i>Phosphis stanni.</i>	
Phosphite of tunstein. <i>Phosphis tunstæni.</i>	
Phosphite of zinc. <i>Phosphis zinci.</i>	
Phosphorus. <i>Phosphorum.</i>	} <i>Phosphorus of Kunkel.</i>
Phosphuret. <i>Phosphoretum.</i>	{ Combination of phosphorus not oxygenated with different bases.
Phosphuret of copper. <i>Phosphoretum cupri.</i>	
Phosphuret of iron. <i>Phosphoretum ferri.</i>	{ <i>Syderum</i> , of Bergman. <i>Syderotete</i> , of Mr. de Morveau. <i>Regulus of syderite.</i>
Pyro-lignites. <i>Pyro-lignis, tis, s. m.</i>	{ Salts formed by the union of the pyro-lignic acid with different bases. These salts had no names in the ancient nomenclature.
Pyrolignite of alumine. <i>Pyrolignis aluminosus.</i>	
Pyrolignite of ammoniac. <i>Pyrolignis ammoniacalis.</i>	
Pyrolignite of antimony. <i>Pyrolignis stibii.</i>	
Pyrolignite of arsenic. <i>Pyrolignis arsenicalis.</i>	
Pyrolignite of barytes. <i>Pyrolignis baryticus.</i>	
Pyrolignite of bismuth. <i>Pyrolignis bismuthi.</i>	
Pyrolignite of cobalt. <i>Pyrolignis cobalti.</i>	
Pyrolignite of copper. <i>Pyrolignis cupri.</i>	
Pyrolignite of gold. <i>Pyrolignis auri.</i>	
Pyrolignite of iron. <i>Pyrolignis ferri.</i>	
Pyrolignite of lead. <i>Pyrolignis plumbi.</i>	

MODERN NAMES.

Pyrolignite of lime.

Pyrolignis calcareus.

Pyrolignite of magnesia.

Pyrolignis magnesiæ.

Pyrolignite of manganese.

Pyrolignis magnesiæ.

Pyrolignite of mercury.

Pyrolignis mercurii.

Pyrolignite of molybden.

Pyrolignis molybdeni.

Pyrolignite of nickel.

Pyrolignis niccoli.

Pyrolignite of platina.

Pyrolignis platini.

Pyrolignite of potash.

Pyrolignis potassæ.

Pyrolignite of silver.

Pyrolignis argenti.

Pyrolignite of soda.

Pyrolignis sodæ.

Pyrolignite of tin.

Pyrolignis stanni.

Pyrolignite of tungsten.

Pyrolignis tungsteni.

Pyrolignite of zinc.

Pyrolignis zinci.

Pyromucites.

Pyromucis, tis, s. n.

Pyromucite of alumine.

Pyromucis aluminifus.

Pyromucite of ammoniac.

Pyromucis ammoniacalis.

Pyromucite of antimony.

Pyromucis stibii.

Pyromucite of arsenic.

Pyromucis arsenicalis.

Pyromucite of barytes.

Pyromucis baryticus.

Pyromucite of bismuth.

Pyromucis bismuthi.

Pyromucite of cobalt.

Pyromucis cobalti.

Pyromucite of copper.

Pyromucis cupri.

ANCIENT NAMES.

{ Salts formed by the union of
the pyro-mucic acid with dif-
ferent bases.
This genus of salts had no name
in the ancient nomenclature.

Pyromucite

MODERN NAMES.	ANCIENT NAMES.
Pyromucite of gold.	
<i>Pyromucis auri.</i>	
Pyromucite of iron.	
<i>Pyromucis ferri.</i>	
Pyromucite of lead.	
<i>Pyromucis plumbi.</i>	
Pyromucite of lime.	
<i>Pyromucis calcareus.</i>	
Pyromucite of magnesia.	
<i>Pyromucis magnesiæ.</i>	
Pyromucite of manganese.	
<i>Pyromucis magnesi.</i>	
Pyromucite of mercury.	
<i>Pyromucis mercurii.</i>	
Pyromucite of molybden.	
<i>Pyromucis molybdeni.</i>	
Pyromucite of nickel.	
<i>Pyromucis niccoli.</i>	
Pyromucite of platina.	
<i>Pyromucis platini.</i>	
Pyromucite of potash.	
<i>Pyromucis potassæ.</i>	
Pyromucite of silver.	
<i>Pyromucis argenti.</i>	
Pyromucite of soda.	
<i>Pyromucis sodæ.</i>	
Pyromucite of tin.	
<i>Pyromucis stanni.</i>	
Pyromucite of tunstein.	
<i>Pyromucis tunsteni.</i>	
Pyromucite of zinc.	
<i>Pyromucis zinci.</i>	
Pyrotartrites.	{ Salts formed by the combination of the pyrotartareous acid with different bases.
<i>Pyrotartris, tis, s. m.</i>	
Pyrotartrite of alumine.	
<i>Pyrotartris aluminosus.</i>	
Pyrotartrite of ammoniac.	
<i>Pyrotartris ammoniaci.</i>	
Pyrotartrite of antimony.	
<i>Pyrotartris stibii.</i>	
Pyrotartrite of arsenic.	
<i>Pyrotartris arsenici.</i>	
Pyrotartrite of barytes.	
<i>Pyrotartris baryticus.</i>	
Pyrotartrite of bismuth.	
<i>Pyrotartris bismuthi.</i>	

MODERN NAMES.	ANCIENT NAMES.
Pyrotartrite of cobalt.	
<i>Pyrotartris cobalti.</i>	
Pyrotartrite of copper.	
<i>Pyrotartris cupri.</i>	
Pyrotartrite of gold.	
<i>Pyrotartris auri.</i>	
Pyrotartrite of iron.	
<i>Pyrotartris ferri.</i>	
Pyrotartrite of lead.	
<i>Pyrotartris plumbi.</i>	
Pyrotartrite of lime.	
<i>Pyrotartris calcareus.</i>	
Pyrotartrite of magnesia.	
<i>Pyrotartris magnesiæ.</i>	
Pyrotartrite of manganese.	
<i>Pyrotartris magnesi.</i>	
Pyrotartrite of mercury.	
<i>Pyrotartris hydrargiri.</i>	
Pyrotartrite of molybden.	
<i>Pyrotartris molybdeni.</i>	
Pyrotartrite of nickel.	
<i>Pyrotartris niccoli.</i>	
Pyrotartrite of platina.	
<i>Pyrotartris platini.</i>	
Pyrotartrite of potash.	
<i>Pyrotartris potassæ.</i>	
Pyrotartrite of silver.	
<i>Pyrotartris argenti.</i>	
Pyrotartrite of soda.	
<i>Pyrotartris sodæ.</i>	
Pyrotartrite of tin.	
<i>Pyrotartris stanni.</i>	
Pyrotartrite of tungsten.	
<i>Pyrotartris tungsteni.</i>	
Pyrotartrite of zinc.	
<i>Pyrotartris zinci.</i>	
Platina.	{ <i>Juan blanca.</i>
<i>Platina.</i>	{ <i>Platina.</i>
	{ <i>White gold.</i>
	{ <i>Platina del pinto.</i>
Potash.	{ <i>Caustic vegetable fixed alkali.</i>
<i>Potassa, æ.</i>	
Potash molten.	{ <i>Common caustic. Potential cautery.</i>
<i>Potassa fusa.</i>	{ <i>Infernal, or septic stone.</i>
Potash, siliciated, in liquidity.	
<i>Potassa silicea fluida.</i>	

Prussiate.

ANCIENT NAMES.	MODERN NAMES.
Prussiat.	{ Salts formed by the union of the Prussic acid, or colouring matter of Prussian blue, with different bases. { This genus of salts had no name in the old nomenclature.
<i>Prussias, tis, s. m.</i>	
Prussiat of alumine.	
<i>Prussias aluminosus.</i>	
Prussias of ammoniac.	
<i>Prussias ammoniacalis.</i>	
Prussiat of antimony.	
<i>Prussias antimonii.</i>	
Prussiat of silver.	
<i>Prussias arsenicalis.</i>	
Prussiat of barytes.	
<i>Prussias baryticus.</i>	
Prussiat of bismuth.	
<i>Prussias bismuthi.</i>	
Prussiat of cobalt.	
<i>Prussias cobalti.</i>	
Prussiat of copper.	
<i>Prussias cupri.</i>	
Prussiat of gold.	
<i>Prussias auri.</i>	
Prussiat of iron.	{ <i>Prussian blue.</i> { <i>Berlin blue.</i>
<i>Prussias ferri.</i>	
Prussiat of lead.	
<i>Prussias plumbi.</i>	
Prussiat of lime.	{ <i>Calcareous prussiate.</i> { <i>Lime-water of Prussian blue.</i>
<i>Prussias calcareus.</i>	
Prussiat of magnesia.	
<i>Prussias magnesiæ.</i>	
Prussiat of manganese.	
<i>Prussias magnesi.</i>	
Prussiat of mercury.	
<i>Prussias hydrargiri.</i>	
Prussiat of molybden.	
<i>Prussias molybdeni.</i>	
Prussiat of nickel.	
<i>Prussias niccoli.</i>	
Prussiat of platina.	
<i>Prussias platini.</i>	
Prussiat of potash.	{ Liquor saturated with the colour- ing matter of Prussian blue.
<i>Prussias potassæ.</i>	

MODERN NAMES.	ANCIENT NAMES.
Prussiat of potash, saturated ferruginous. <i>Prussias potassæ ferruginosus saturatus.</i>	} <i>Prussian alkali.</i>
Prussiat of potash ferruginous, not saturated. <i>Prussias potassæ ferrugineus, non saturatus.</i>	
Prussiat of silver. <i>Prussias argenti.</i>	
Prussiat of soda. <i>Prussias sodæ.</i>	
Prussiat of tin. <i>Prussias stanni.</i>	
Pyrophore of Homberg. <i>Pyrophorum Hombergii.</i>	} <i>Pyrophorus of Homberg.</i>
Resins. <i>Resinæ.</i>	} <i>Resins.</i>
Saccholat. <i>Saccholas, tis, s. m.</i>	} Salts formed by the combination of the saccho-lactic acid with different bases. } This genus of salts had no name in the ancient nomenclature.
Saccholat of alumine. <i>Saccholas aluminosus.</i>	
Saccholat of ammoniac. <i>Saccholas ammoniacalis.</i>	
Saccholat of antimony. <i>Saccholas stibii.</i>	
Saccholat of arsenic. <i>Saccholas arsenicalis.</i>	
Saccholat of barytes. <i>Saccholas baryticus.</i>	
Saccholat of bismuth. <i>Saccholas bismuthi.</i>	
Saccholat of cobalt. <i>Saccholas cobalti.</i>	
Saccholat of copper. <i>Saccholas cupri.</i>	
Saccholat of gold. <i>Saccholas auri.</i>	
Saccholat of iron. <i>Saccholas ferri.</i>	

MODERN NAMES.	ANCIENT NAMES.
Saccholat of lead. <i>Saccholas plumbi.</i>	
Saccholat of lime. <i>Saccholas calcareus.</i>	
Saccholat of magnesia. <i>Saccholas magnesiæ.</i>	
Saccholat of manganese. <i>Saccholas magnesi.</i>	
Saccholat of mercury. <i>Saccholas hydrargiri.</i>	
Saccholat of molybden. <i>Saccholas molybdeni.</i>	
Saccholat of nickel. <i>Saccholas niccoli.</i>	
Saccholat of platina. <i>Saccholas platini.</i>	
Saccholat of potash. <i>Saccholas potassæ.</i>	
Saccholat of silver. <i>Saccholas argenti.</i>	
Saccholat of soda. <i>Saccholas sodæ.</i>	
Saccholat of tin. <i>Saccholas stanni.</i>	
Saccholat of tunstein. <i>Saccholas tunstæni.</i>	
Saccholat of zinc. <i>Saccholas zinci.</i>	
Saponuls. <i>Saponuli.</i>	{ Combinations of the volatile, or essential oils, with different bases.
Saponuls acid.	{ Combinations of the volatile, or essential oils, with the different acids.
Saponuls metallic. <i>Saponuli metallici.</i>	{ Soaps composed of the essential oils united to metallic substances.
Saponul of alumine. <i>Saponulus aluminosus.</i>	{ Soap made of essential oil united to the basis of alum.
Saponul ammoniacal. <i>Saponulus ammoniacalis.</i>	{ Soap made of essential oil united to the volatile alkali.
Saponul of barytes. <i>Saponulus barytæ.</i>	{ Soap made of essential oil united to barytes.
Saponul of lime. <i>Saponulus calcareus.</i>	{ Soap made of essential oil united to lime.
Saponul of potash. <i>Saponulus potassæ.</i>	{ Soap composed of essential oil united to vegetable fixed alkali, or Starkey's soap.

Saponul

MODERN NAMES.

Saponul of sodæ.
Saponulus sodæ.

Sebats.
Sebas, tis, s. m.

Sebat of alumine.
Sebas aluminofus.

Sebat of ammoniac.
Sebas ammoniacalis.

Sebat of antimony.
Sebas stibii.

Sebat of arsenic.
Sebas arsenicalis.

Sebat of barytes.
Sebas baryticus.

Sebat of bisniuth.
Sebas bisniuthi.

Sebat of cobalt.
Sebas cobalti.

Sebat of copper.
Sebas cupri.

Sebat of gold.
Sebas auri.

Sebat of iron.
Sebas ferri.

Sebat of lead.
Sebas plumbi.

Sebat of lime.
Sebas calcareus.

Sebat of magnesia.
Sebas magnesicæ.

Sebat of manganese.
Sebas magnesi.

Sebat of mercury.
Sebas hydrargiri.

Sebat of molybden.
Sebas molybdeni.

Sebat of nickel.
Sebas niccoli.

Sebat of platina.
Sebas platini.

Sebat of potash.
Sebas potassicæ.

ANCIENT NAMES.

{ Soap composed of essential oil
united to mineral fixed alkali.
{ Salts formed by the combination
of the acid of fat with different
bases.
{ These salts had no names in the
ancient nomenclature.

MODERN NAMES.	ANCIENT NAMES.
Sebat of silver. <i>Sebas argenti.</i>	
Sebat of foda. <i>Sebas foda.</i>	
Sebat of tin. <i>Sebas stanni.</i>	
Sebat of tunstein. <i>Sebas tunsteni.</i>	
Sebat of zinc. <i>Sebas zinci.</i>	
Silice, or siliceous earth. <i>Silica, terra filicea.</i>	} <i>Siliceous earth.</i>
Soda. <i>Soda.</i>	{ <i>Caustic foda.</i> <i>Marine alkali.</i> <i>Mineral alkali.</i>
Soaps. <i>Sapones.</i>	{ Combinations of unctuous, or fixed oils, with different bases.
Soaps acid. <i>Sapones acidi.</i>	{ Combinations of unctuous, or fixed oils, with different acids.
Soaps metallic. <i>Sapones metallici.</i>	{ Combinations of unctuous, or fixed oils, with metallic substances.
Soap of alumine. <i>Sapo aluminosus.</i>	{ Soap composed of unctuous oil united to the basis of alum.
Soap of ammoniac, or ammoniacal. <i>Sapo ammoniacalis.</i>	{ Soap composed of unctuous oil united to volatile alkali.
Soap of barytes. <i>Sapo baryticus.</i>	{ Soap composed of unctuous oil united to barytes.
Soap of lime. <i>Sapo calcareus.</i>	{ Soap composed of unctuous oil united to lime.
Soap of magnesia. <i>Sapo magnesiæ.</i>	{ Soap composed of unctuous oil united to magnesia.
Soap of potash. <i>Sapo potassæ.</i>	{ Soap composed of unctuous oil united to vegetable fixed alkali.
Soap of foda. <i>Sapo foda.</i>	{ Soap composed of unctuous oil united to mineral fixed alkali.
Succinats. <i>Succinas, tis, s. m.</i>	{ Salts formed by the combination of the acid of amber, or succinic acid with different bases.
Succinat of alumine. <i>Succinas aluminosus.</i>	
Succinat of ammoniac. <i>Succinas ammoniacalis.</i>	
Succinat of antimony. <i>Succinas stibii.</i>	

MODERN NAMES.

ANCIENT NAMES.

Succinat of arsenic.

Succinas arsenicalis.

Succinat of barytes.

Succinas baryticus.

Succinat of bismuth.

Succinas bismuthi.

Succinat of cobalt.

Succinas cobalti.

Succinat of copper.

Succinas cupri.

Succinat of gold.

Succinas aur.

Succinat of iron.

Succinas ferri.

Succinat of lead.

Succinas plumbi.

Succinat of lime.

Succinas calcareus.

Succinat of magnesia.

Succinas magnesiæ.

Succinat of manganese.

Succinas magnesi.

Succinat of mercury.

Succinas hydrargiri.

Succinat of molybden.

Succinas molybdeni.

Succinat of nickel.

Succinas niccoli.

Succinat of platina.

Succinas platini.

Succinat of potash.

Succinas potassæ.

Succinat of silver.

Succinas argenti.

Succinat of soda.

Succinas sodæ.

Succinat of tin.

Succinas stanni.

Succinat of tunstein.

Succinas tunsteni.

Succinat of zinc.

Succinas zinci.

Succinum, or amber.

Succinum.} *Yellow amber.*

Sugar.

Saccharum.} *Sugar.*

Sugar

MODERN NAMES.	ANCIENT NAMES.
Sugar chryftallized. <i>Saccharum crystallifatum.</i>	} Sugar candied.
Sugar of milk. <i>Saccharum lactis.</i>	} Sugar of milk. } Salt of milk.
Sulphats. <i>Sulphas, tis, s. m.</i>	{ Salts formed by the combination of the sulphuric acid with diffe- rent bases.
Sulphat of alumine. <i>Sulphas aluminofus.</i>	} Alum. } Super-vitriolated clay.
Sulphat of ammoniac. <i>Sulphas ammoniacalis.</i>	} Glauber's secret ammoniacal salt. } Ammoniacal vitriol.
Sulphat of antimony. <i>Sulphas stibii.</i>	} Vitriol of antimony.
Sulphat of arsenic. <i>Sulphas arsenicalis.</i>	} Vitriol of arsenic.
Sulphat of barytes. <i>Sulphas baryticus.</i>	} Ponderous spar. } } Baroselenite.
Sulphat of bismuth. <i>Sulphas bismuthi.</i>	} Vitriol of bismuth.
Sulphat of cobalt. <i>Sulphas cobalti.</i>	} Vitriol of cobalt.
Sulphat of copper. <i>Sulphas cupri.</i>	} Roman vitriol. Blue stone. } Super-vitriolated copper.
Sulphat of iron. <i>Sulphas ferri.</i>	{ Green copperas. } Salt of steel. } Super-vitriolated iron.
Sulphat of gold. <i>Sulphas auri.</i>	
Sulphat of lead. <i>Sulphas plumbi.</i>	} Vitriol of lead.
Sulphat of lime. <i>Sulphas calcareus.</i>	{ Vitriolated lime. } Selenite. } Gypsum. } Plaster of Paris.
Sulphat of magnesia. <i>Sulphas magnesiæ.</i>	{ Vitriolated magnesia. } Bitter purging salt. } Sedlitz salt. } Epsom salt. } Seydschutz salt.
Sulphat of manganese. <i>Sulphas mangnesii.</i>	} Vitriol of manganese.
Sulphat of mercury. <i>Sulphas hydrargiri.</i>	} Super-vitriolated mercury. } Vitriol of mercury.
Sulphat of molybden. <i>Sulphas molybdeni.</i>	
Sulphat of nickel. <i>Sulphas niccoli.</i>	

MODERN NAMES.	ANCIENT NAMES.
Sulphat of platina. <i>Sulphas platini.</i>	{ <i>Vitriolated vegetable alkali.</i> <i>Sal enixus de duobus.</i> <i>Vitriolated tartar.</i>
Sulphat of potash. <i>Sulphas potassæ.</i>	
Sulphat of silver. <i>Sulphas argenti.</i>	{ <i>Arcanum duplicatum.</i> <i>Glafer's sal polychrest.</i> <i>Vitriol of potash.</i>
Sulphat of soda. <i>Sulphas sodæ.</i>	{ <i>Vitriol of silver.</i>
Sulphat of tin. <i>Sulphas stanni.</i>	{ <i>Glauber's salt.</i> <i>Vitriol of soda.</i>
Sulphat of tunstein. <i>Sulphas tunsteni.</i>	{ <i>Vitriol of tin.</i>
Sulphat of zinc. <i>Sulphas zinci.</i>	{ <i>White vitriol, or copperas.</i> <i>Vitriol of zinc.</i> <i>Vitriol of Goslar.</i>
Sulphite. <i>Sulphis, tis, s. m.</i>	{ <i>Salts formed by the combination of the sulphureous acid with different bases.</i>
Sulphite of alumine. <i>Sulphis aluminosus.</i>	
Sulphite of ammoniac. <i>Sulphis ammoniacalis.</i>	
Sulphite of antimony. <i>Sulphis stibii.</i>	
Sulphite of arsenic. <i>Sulphis arsenicalis.</i>	
Sulphite of barytes. <i>Sulphis baryticus.</i>	
Sulphite of bismuth. <i>Sulphis bismuthi.</i>	
Sulphite of cobalt. <i>Sulphis cobalti.</i>	
Sulphite of copper. <i>Sulphis cupri.</i>	
Sulphite of gold. <i>Sulphis auri.</i>	
Sulphite of iron. <i>Sulphis ferri.</i>	
Sulphite of lead. <i>Sulphis plumbi.</i>	
Sulphite of lime. <i>Sulphis calcareus.</i>	

MODERN NAMES.	ANCIENT NAMES.
Sulphite of magnesia. <i>Sulphis magnesiæ.</i>	
Sulphite of manganese. <i>Sulphis magnesi.</i>	
Sulphite of mercury. <i>Sulphis hydrargiri.</i>	
Sulphite of molybden. <i>Sulphis molybdeni.</i>	
Sulphite of nickel. <i>Sulphis niccoli.</i>	
Sulphite of platina. <i>Sulphis platini.</i>	
Sulphite of potash. <i>Sulphis potassæ.</i>	} <i>Stahl's sulphureous salt.</i>
Sulphite of silver. <i>Sulphis argenti.</i>	
Sulphite of soda. <i>Sulphis sodæ.</i>	
Sulphite of tin. <i>Sulphis stanni.</i>	
Sulphite of tunstein. <i>Sulphis tunsteni.</i>	
Sulphite of zinc. <i>Sulphis zinci.</i>	
Sulphur. <i>Sulphur.</i>	} <i>Sulphur.</i>
Sulphur sublimated. <i>Sulphur sublimatum.</i>	} <i>Flowers of sulphur.</i>
Sulphurets alkaline. <i>Sulphureta alkalina.</i>	} <i>Alkaline livers of sulphur.</i> } <i>Alkaline livers. Sulphur-calies.</i>
Sulphurets earthy. <i>Sulphureta terrea.</i>	
Sulphurets metallic. <i>Sulphureta metallica.</i>	} <i>Combinations of sulphur with</i> } <i>the metals.</i>
Sulphuret of alumine. <i>Sulphuretum aluminæ.</i>	
Sulphuret of ammoniac. <i>Sulphuretum ammoniacale.</i>	} <i>Boyle's smoking liquor.</i> } <i>Volatile alkaline liver of sulphur.</i>
Sulphuret of antimony. <i>Sulphuretum stibii.</i>	
Sulphuret of antimony, native. <i>Sulphuretum stibii nativum.</i>	} <i>Antimony.</i> } <i>Ore of antimony.</i>
Sulphuret of barytes. <i>Sulphuretum barytæ.</i>	
Sulphuret of bismuth. <i>Sulphuretum bismuthi.</i>	} <i>Liver of sulphur of barytes.</i>

MODERN NAMES.	ANCIENT NAMES.
Sulphuret of cobalt. <i>Sulphuretum cobalti.</i>	
Sulphuret of copper. <i>Sulphuretum cupri.</i>	} <i>Pyrites of copper.</i>
Sulphuret of gold. <i>Sulphuretum auri.</i>	
Sulphuret of iron. <i>Sulphuretum ferri.</i>	} <i>Martial pyrites.</i>
Sulphuret of fixed oil. <i>Sulphuretum olei fixi.</i>	
Sulphuret of volatile oil. <i>Sulphuretum olei volatilis.</i>	} <i>Balsam of sulphur.</i>
Sulphuret of lead. <i>Sulphuretum plumbi.</i>	
Sulphuret of magnesia. <i>Sulphuretum magnesiæ.</i>	} <i>Magnesian liver of sulphur.</i>
Sulphuret of manganese. <i>Sulphuretum magnesi.</i>	
Sulphuret of mercury. <i>Sulphuretum hydrargiri.</i>	
Sulphuret of molybden. <i>Sulphuretum molybdeni.</i>	
Sulphuret of nickel. <i>Sulphuretum niccoli.</i>	
Sulphuret of platina. <i>Sulphuretum platini.</i>	
Sulphuret of potash. <i>Sulphuretum potassæ.</i>	} Liver of sulphur, having for basis the vegetable alkali.
Sulphuret of potash antimoniated. <i>Sulphuretum potassæ sibiatum.</i>	
Sulphuret of silver. <i>Sulphuretum argenti.</i>	} <i>Blanckmal.</i>
Sulphuret of soda. <i>Sulphuretum sodæ.</i>	
Sulphuret of soda antimoniated. <i>Sulphuretum sodæ sibiatum.</i>	} Liver of sulphur, having for basis the mineral alkali.
Sulphuret of tin. <i>Sulphuretum stanni.</i>	
Sulphuret of tunstein. <i>Sulphuretum tunsteni.</i>	
Sulphuret of zinc. <i>Sulphuretum zinci.</i>	} <i>Blende, or factitious galena.</i>
Tartar. <i>Tartarus.</i>	

MODERN NAMES.

- Tartrites.
Tartris, tis, s. m.
- Tartrite acidulous of potash.
Tartris acidulous potassæ.
- Tartrite of alumine.
Tartris aluminosus.
- Tartrite of ammoniac.
Tartris ammoniacalis.
- Tartrite of antimony.
Tartris stibii.
- Tartrite of arsenic.
Tartris arsenicalis.
- Tartrite of barytes.
Tartris baryticus.
- Tartrite of bismuth.
Tartris bismuthi.
- Tartrite of cobalt.
Tartris cobalti.
- Tartrite of copper.
Tartris cupri.
- Tartrite of gold.
Tartris auri.
- Tartrite of iron.
Tartris ferri.
- Tartrite of lime.
Tartris calcareus.
- Tartrite of lead.
Tartris plumbi.
- Tartrite of magnesia.
Tartris magnesiæ.
- Tartrite of manganese.
Tartris magnesi.
- Tartrite of mercury.
Tartris hydrargiri.
- Tartrite of molybden.
Tartris molybdeni.
- Tartrite of nickel.
Tartris niccoli.
- Tartrite of platina.
Tartris platini.
- Tartrite of potash.
Tartris potassæ.

ANCIENT NAMES.

- { Salts formed by the combination
of the tartareous acid with dif-
ferent bases.
- { *Tartar. Supertartarised vegetable*
alkali.
} *Cream of tartar.*
} *Crystals of tartar.*
- } *Ammoniacal tartar.*
- } *Calcareous tartar.*
- } *Saturnine tartar.*
- { *Tartarised tartar.*
} *Soluble tartar.*
} *Vegetable salt.*

MODERN NAMES.	ANCIENT NAMES.
Tartrite of potash antimoniated. <i>Tartris potassæ sibiatus.</i>	{ Emetic tartar. Antimoniated tartar.
Tartrite of potash, ferruginous. <i>Tartris potassæ ferrugineus.</i>	{ Chalybiated tartar. Soluble martial tartar.
Tartrite of potash, furcompounded with antimony. <i>Tartris potassæ sibiatus.</i>	{ Tartarised tartar, containing antimony.
Tartrite of silver. <i>Tartris argenti.</i>	
Tartrite of soda. <i>Tartris sodæ.</i>	{ Rochelle salt. Seignette's polychroest salt. Tartarised soda.
Tartrite of tin. <i>Tartris stanni.</i>	
Tartrite of tunstein. <i>Tartris tunsteni.</i>	
Tartrite of zinc. <i>Tartris zinci.</i>	
Tin. <i>Stannum.</i>	{ Tin. Jupiter.
Tunstats. <i>Tunstas, tis, s. m.</i>	{ Salts formed by the combination of the tunstic acid, with diffe- rent bases. These salts had no name in the ancient nomenclature.
Tunstat of alumine. <i>Tunstas aluminosus.</i>	
Tunstat of ammoniac. <i>Tunstas ammoniacalis.</i>	
Tunstat of antimony. <i>Tunstas sibi.</i>	
Tunstat of arsenic. <i>Tunstas arsenicalis.</i>	
Tunstat of barytes. <i>Tunstas baryticus.</i>	
Tunstat of bismuth. <i>Tunstas bismuthi.</i>	
Tunstat of cobalt. <i>Tunstas cobalti.</i>	
Tunstat of copper. <i>Tunstas cupri.</i>	
Tunstas of gold. <i>Tunstas auri.</i>	
Tunstat of iron. <i>Tunstas ferri.</i>	
Tunstat of lead. <i>Tunstas plumbi.</i>	

MODERN NAMES.	ANCIENT NAMES.
Tunstat of lime.	
<i>Tunstat calcareus.</i>	
Tunstat of magnesia.	
<i>Tunstat magnesiæ.</i>	
Tunstat of manganese.	
<i>Tunstat magnesi.</i>	
Tunstat of mercury.	
<i>Tunstat hydrargiri.</i>	
Tunstat of molybden.	
<i>Tunstat molybdeni.</i>	
Tunstat of nickel.	
<i>Tunstat niccoli.</i>	
Tunstat of platina.	
<i>Tunstat platini.</i>	
Tunstat of potash.	
<i>Tunstat potassæ.</i>	
Tunstat of silver.	
<i>Tunstat argenti.</i>	
Tunstat of soda.	
<i>Tunstat sodæ.</i>	
Tunstat of tin.	
<i>Tunstat stanni.</i>	
Tunstat of tunstein.	
<i>Tunstat tunsteni.</i>	
Tunstat of zinc.	
<i>Tunstat zinci.</i>	
Waters impregnated with the carbonic acid.	} <i>Acidulated waters.</i> } <i>Gaseous waters.</i>
Waters sulphurated.	<i>Hepatic waters.</i>
Zinc.	<i>Zinc.</i>

The Reader will see from this long List what Chemistry offers ; and our experiments, with even a few new substances, evince how much yet remains to be explored.

INDEX

NOMINUM MUTATORUM.

OLEA.

PHARM. LONDIN.
Olea expressa.
—— essentialia.
Oleum animale.

NOV. NOMENCLAT.
Olea fixa.
—— volatilia.
Oleum animale volatile.

SALES.

Acidum distillatum.
—— acetosum.
—— muriaticum.
—— nitrosum.
—— vitriolicum.
Flores Benzoës.
Sal succini purificatus.
Ammonia præparata.
Aqua Ammoniæ puræ.
Kali præparatum.
Aqua Kali.
—— Kali puri.
Kali purum.
Calx cum Kali puro.
Natron præparatum.
Aqua Ammoniæ acetatæ.
Kali acetatum.
—— tartarifatum.
—— vitriolatum.
Natron tartarifatum.
—— vitriolatum.
—— muriaticum five
Sal muriaticus.
Nitrum purificatum.
Alumen.
Magnesia vitriolata.
—— alba.

Acidum acetosum.
—— aceticum.
—— muriaticum.
—— nitricum.
—— sulphuricum.
—— benzoicum sublimatum.
—— succinicum sublimatum.
Carbonas Ammoniacæ.
Ammoniacæ.
Carbonas potassæ.
Potassa Carbonatæ potassæ.
Potassa.
Potassa fusa.
—— cum Calce.
Carbonas Sodæ.
Acetis ammoniacalis.
—— Potassæ.
Tartris Potassæ.
Sulphas Potassæ.
Tartris sodæ.
Sulphas sodæ.
} Murias sodæ.
Nitras Potassæ, Nitrum.
Sulphas aluminæ five aluminosus.
—— Magnesiæ.
Carbonas magnesiæ.

PRÆPARATA

PRÆPARATA E SULPHURE.

PHARM. LONDIN.

Flores sulphuris.
 Kali sulphuratum.
 Sulphur præcipitatum.
 Oleum sulphuratum.

NOV. NOMENCLAT.

Sulphur sublimatum.
 Sulphuretum alkalinum.
 Sulphur sublimatum.
 Sulphuretum olei fixi.

PRÆPARATA EX ANTIMONIO.

Antimonium.

Antimonium calcinatum.

————— muriatum.

————— tartarifatum.

————— vitrificatum.

Crocus Antimonii.

Sulphur Antimonii præcipita-
 tum.

Sulphuretum antimonii.

{ Oxydum Stibii album nitro con-
 fectum.

Murias Stibii.

Tartris potassæ stibiatus.

{ Oxydum Stibii sulphuratum vi-
 treum.

{ Oxydum Stibii sulphuratum fe-
 mivitreum.

{ Oxydum Stibii sulphuratum au-
 rantium.

PRÆPARATA EX ARGENTO.

Argentum nitratum.

Nitras Argenti fufus.

PRÆPARATA E FERRO.

Ferrum ammoniacale.

Ferri Rubigo.

Ferrum tartarifatum.

———— vitriolatum.

Ferrum ammoniacale sublimatum.

Carbonas Ferri.

Tartris acidulus Ferri.

Sulphas Ferri.

PRÆPARATA EX HYDRARGYRO.

Hydrargyrus acetatus.

———— calcinatus.

———— muriatus.

Calomelas.

Calx Hydrargyri alba.

Acetis Hydrargiri.

{ Oxydum Hydrargiri rubrum per
 ignem.

Murias Hydrargiri corrosivus.

———— sublimatus.

———— Hydrargiri.

Hydrargyrus

PHARM. LONDIN.	NOV. NOMENCLAT.
Hydrargyrus muriatus mitis.	————— dulcis.
————— cum sulphure.	{ Oxydum Hydrargiri sulphuratum nigrum.
————— sulphuratus ruber	{ Oxydum Hydrargiri sulphuratum rubrum.
————— nitratus ruber.	{ Oxydum Hydrargiri rubrum acido nitrico confectum.
————— vitriolatus.	{ Oxydum Hydrargiri luteum acido sulphurico confectum.

PRÆPARATA E PLUMBO.

Plumbum usum.	Oxydum Plumbi.
Minium.	————— rubrum.
Lithargyrus.	————— femivitreum.
Ceruffa.	{ Oxydum Plumbi album per aci- dum acetosum.
Ceruffa acetata.	Acetis Plumbi.
Aqua Lithargyri acetata.	————— Lithargiri.

PRÆPARATUM E STANNO.

Stannum pulveratum.	Oxydum Stanni cinereum.
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PRÆPARATA E ZINCO.

Zincum calcinatum.	Oxydum Zinci sublimatum.
———— vitriolatum.	Sulphas Zinci.

Spiritus distillatus.	Alcohol.
Tinctura Aloës.	Alcohol Aloës, &c.
Æther vitriolicus.	Æther sulphuricum.
———— nitrosus.	———— nitricum.

TABULA OSTENDENS

QUA RATIONE HYDRARGYRUS ET OPIUM IN MEDICAMENTIS COMPOSITIS CONTINENTUR.

PULVIS e creta compositus cum opio in granis circiter 43 continet opii granum unum.

Pulvis ipecacuanhæ compositus in granis decem continet opii granum unum.

Pulvis opiatus in granis decem continet opii granum unum.

Pulvis e scammonio cum calomelane in granis quatuor continet calomelanos granum unum.

Pilulæ ex opio in granis quinque continet opii granum unum.

Pilulæ ex hydrargyro in granis decem continet hydrargyri granas quatuor.

Confectio opiata in granis 36 continet opii granum unum.

Emplastrum ammoniaci cum hydrargyro in unciis quinque continet hydrargyri unciam unam.

Emplastrum lithargyri cum hydrargyro in unciis quinque continet hydrargyri unciam unam.

Unguentum hydrargyri fortius in drachmis duabus continet hydrargyri drachmam unam.

Unguentum hydrargyri mitius in drachmis sex continet hydrargyri drachmam unam.

Unguentum hydrargyri nitrati in drachma una continet hydrargyri nitrati grana duodecim.

Unguentum calcis hydrargyri albæ in drachma una continet calcis hydrargyri albæ grana quatuor cum femisse.

FINIS.

TABLE II.

	I. THE SUBSTANCES NOT DECOMPOUNDED.		II. CONVERTED INTO THE STATE OF GAS BY CALORIC.		III. OXYDS WITH VARIOUS BASES.		IV. OXYDS WITH VARIOUS BASES.		V. OXYDS WITH THEIR BASES.		VI. COMBINATIONS.	
	NAMES NEWLY INVENTED OR ADOPTED.	ANCIENT NAMES.	NAMES NEWLY INVENTED OR ADOPTED.	ANCIENT NAMES.	NAMES NEWLY INVENTED OR ADOPTED.	ANCIENT NAMES.	NAMES NEWLY INVENTED OR ADOPTED.	ANCIENT NAMES.	NAMES NEWLY INVENTED OR ADOPTED.	ANCIENT NAMES.	NAMES NEWLY INVENTED OR ADOPTED.	ANCIENT NAMES.
31	Arfenic.	<i>Regulus of arfenic.</i>	.....	.....	Oxyd of arfenic.	<i>White arfenic, or calx of arfenic.</i>	Yellow } sulphurated Red } oxyd of arfenic.	<i>Orpiment. Realgar.</i>	Arfeniat of potash, &c.	<i>Macquer's arfenical neutral salt.</i>	Alloy of arfenic and tin.	<i>Arfenicated tin.</i>
32	Molybdena.	.....	.....	.....	Oxyd of molybdena.	<i>Calx of molybdena.</i>	.....	.....	Arfeniat of copper.	.....	Alloy, &c.	.....
33	Tungften.	.....	.....	.....	Oxyd of tungften.	<i>Yellow calx of tungften.</i>	.....	.....	Molybdat.	.....	Alloy, &c.	.....
34	Manganefe.	<i>Regulus of manganefe.</i>	.....	.....	Tungftic acid.	.....	.....	.....	Calcareous tungftat.	<i>Swedifh tungften.</i>	Alloy, &c.	.....
35	Nickel.	.....	.....	.....	White } oxyd of man- Black } ganefe. Vitreous }	<i>Manganefe.</i>	.....	.....	.....	.....	Alloy of manganefe and iron.	.....
36	Cobalt.	<i>Regulus of cobalt.</i>	.....	.....	Oxyd of nickel.	<i>Calx of nickel.</i>	.....	.....	.....	.....	Alloy of nickel, &c.	.....
37	Bifmuth.	.....	.....	.....	Grey } oxyd of co- Vitreous } balt.	<i>Calx of cobalt.</i>	Alkaline cobaltic oxyds.	<i>Precipitates of cobalt again difolved by alkalies.</i>	.....	.....	Alloy, &c.	.....
38	Antimony.	<i>Regulus of antimony.</i>	.....	.....	White } oxyd of bif- Yellow } muth. Vitreous }	<i>Magiftery of bifmuth, or white paint. Yellow calx of bifmuth. Clafs of bifmuth.</i>	Sulphurated oxyd of bifmuth.	<i>Bifmuth precipitated by liver of fulphur.</i>	.....	.....	Alloy, &c.	.....
39	Zinc.	.....	.....	.....	Oxyd of zinc.	<i>Calx of zinc.</i>	.....	.....	.....	.....	Alloy, &c.	.....
40	Iron.	.....	.....	.....	Sublimated oxyd of zinc.	<i>Flowers of zinc, pompholyx, &c.</i>	Sulphurated oxyd of zinc.	<i>Precipitate of zinc by liver of fulphur, or fufitions blend.</i>	.....	.....	Alloy, &c.	.....
41	Tin.	.....	.....	.....	Black } oxyd of iron.	<i>Marital ethiops.</i>	Sulphurated oxyd of iron.	.....	.....	.....	Alloy, &c.	.....
42	Lead.	.....	.....	.....	Red } oxyd of iron.	<i>Astringent fuffion of Mars.</i>	.....	.....	.....	.....	Alloy, &c.	.....
43	Copper.	.....	.....	.....	White oxyd of tin.	<i>Calx, or putty of tin.</i>	Yellow sulphurated oxyd of tin.	<i>Autum muftrum.</i>	.....	.....	Alloy, &c.	.....
44	Mercury.	.....	.....	.....	White } oxyd of lead.	<i>Cerufe, or white lead.</i>	Sulphurated oxyd of lead.	.....	.....	.....	Alloy, &c.	.....
45	Silver.	.....	.....	.....	Yellow } oxyd of lead.	<i>Mylficot.</i>	.....	.....	.....	.....	Alloy, &c.	.....
46	Platina.	.....	.....	.....	Red } oxyd of lead.	<i>Minium.</i>	.....	.....	.....	.....	Alloy of platina and gold.	.....
47	Gold.	.....	.....	.....	Vitreous } oxyd of cop- per.	<i>Litharge.</i>	Ammoniacal oxyd of copper.	.....	.....	.....	Alloy, &c.	.....
48	Siliceous earth.	<i>Vitrifiable earth, quartz, &c.</i>	.....	.....	Blue } mercurial Blackifh } oxyd. Yellow } oxyd.	<i>Brown calx of copper. Green calx of copper, or verdigris. Mountain blue.</i>	.....	.....	.....	.....	Alloy of platina and gold.	.....
49	Aluminous earth.	<i>Clay, or earth of alum.</i>	.....	.....	Red } oxyd.	<i>Turboth mineral.</i>	Black } sulphurated Red } oxyd of mercury.	<i>Ethiops mineral. Cimabarr.</i>	.....	.....	Alloy, &c.	.....
50	Baryte.	.....	.....	.....	Oxyd of filver.	<i>Precipitate per fe. Calx of filver.</i>	Sulphurated oxyd of filver.	.....	.....	.....	Alloy, &c.	.....
51	Lime.	.....	.....	.....	Oxyd of platina.	<i>Calx of platina.</i>	.....	.....	.....	.....	Alloy, &c.	.....
52	Magnesia.	.....	.....	.....	Oxyd of gold.	<i>Calx of gold.</i>	.....	.....	.....	.....	Alloy, &c.	.....
53	Potafh.	<i>Vegetable fixed alkali of tartar, &c.</i>	.....	.....	.....	.....	.....	.....	.....	.....	Alloy, &c.	.....
54	Soda.	<i>Mineral alkali, marine alkali natrum.</i>	.....	.....	.....	.....	.....	.....	.....	.....	Alloy, &c.	.....
55	Ammoniac.	<i>Flux, or cauftic volatile alkali.</i>	Ammoniacal gas.	<i>Alkaline gas.</i>	.....	.....	.....	.....	.....	.....	Alloy, &c.	.....

NAMES GIVEN TO COMPOUND SUBSTANCES WHICH COMBINE WITHOUT DECOMPOSITION.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
<i>New Names.</i>	Mucous matter.	Glinous matter, or glue.	Sugar.	Starch.	Fixed oil.	Volatile oil.	The aroma, or aromatic principle.	Refin.	Extractive matter.	Extraflo- refinous matter.	Refinous- extractive matter.	Feculum.	Alcohol, or spirit of wine.	Alcohol	Nitrous } Gallic } Muriatic } alcohol.	Sulphuric } Muriatic } Acetic, &c. } ether.	Alkaline } earthy } Acid } Metallic } Saponul of turpentine, &c.
<i>Ancient Names.</i>	Muchage.	Glinous matter.	Saccharine matter.	Amylaceous matter.	Fat oil.	Effential oil.	Spiritus rectif.	Refin.	Extractive matter.	Feculum.	Spirit of wine.	Alkaline tincture. Tincture of guaiacum. Tincture of scammonium. Tincture of myrrh, &c.	Dulcified spirit of wine. Tincture of nut-galls. Dulcified marine acid.	Ether of Probenius. Marine ether. Acetous ether, &c.	Alkaline earthy, &c. Sops. Combinations of volatile oils with bases.

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