

An essay, on the operation of mercury, in the human body; : in which, the manner how salivation is produced, by that medicine, is attempted to be explained: interspersed with observations on the treatment of the venereal disease. / By Robert Maywood, M. D.

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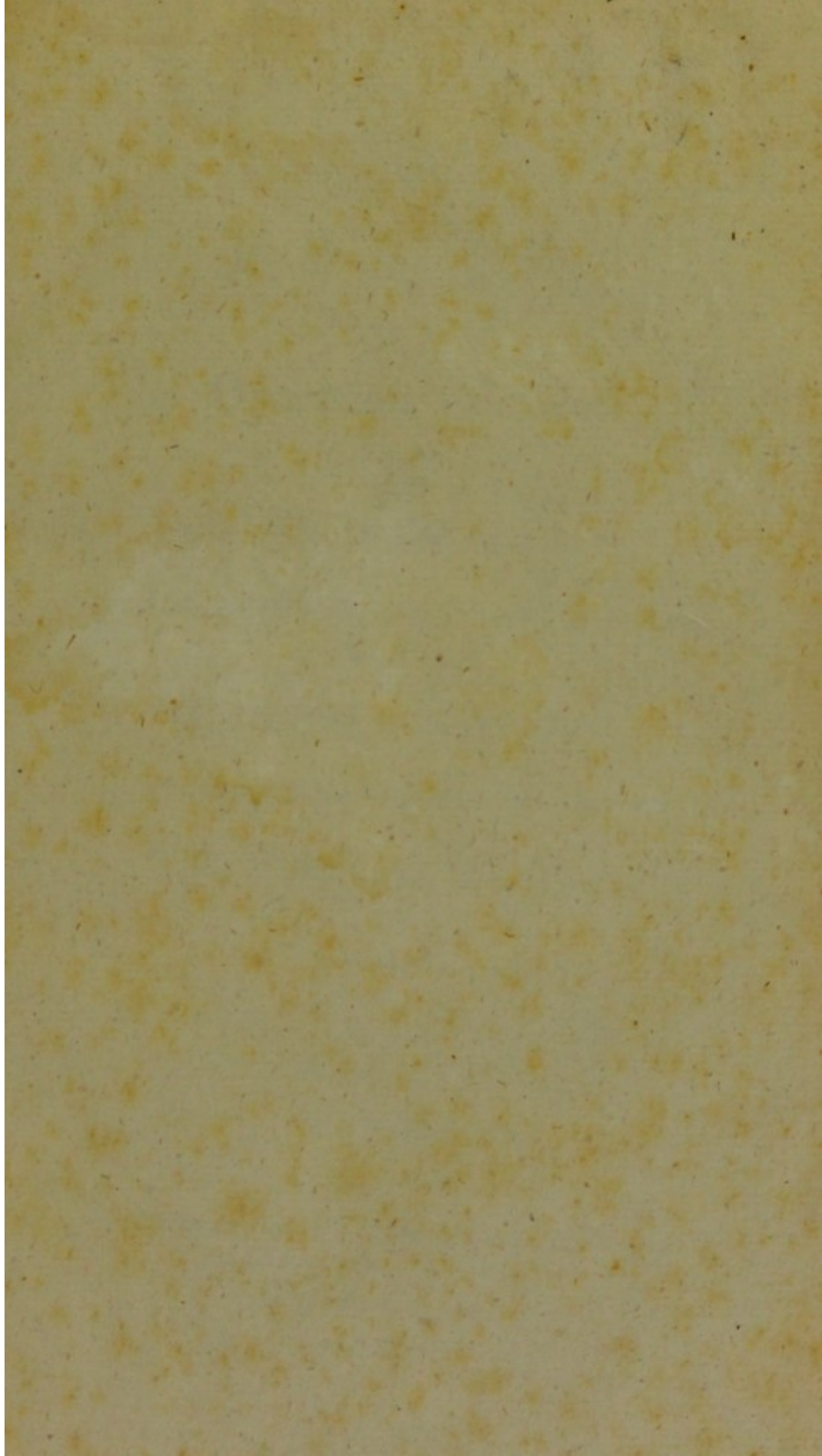
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The H U M A N B O D Y;
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Interpersed with Observations on the Treatment of
The V E N E R E A L D I S E A S E.

By R O B E R T M A Y W O O D, M. D.
O F T H E I S L E O F W I G H T.

L O N D O N.

Printed for the AUTHOR, at the Literary-Press, No. 14,
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M D C C L X X V I I .

AN
ESSAY

ON
The Operation of Mercury

IN THE HUMAN BODY,

In which the Nature and Properties of the
Mercurial Saliva are Explained

By
JOHN HUNTER, M.D.
F.R.S. &c.
FURTHER ENLIGHTENED WITH OBSERVATIONS ON THE TREATMENT OF
THE VENEREAL DISEASE.

By
ROBERT MAYNARD, M.D.
Of the City of Westminster.

LONDON:
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P R E F A C E.

THE few following pages (published heretofore as the Author's inaugural dissertation) owe not their appearance either to vanity or a desire of gain.

Some few friends, judges of the subject, were pleased to express their approbation of the work in it's original dress. Notwithstanding the advantage of their suffrages, however, he would scarce have been induced to offer this translation to the public, was he not prompted by the most powerful motive.

In medical books, and by lectures on medicine, a method, widely different from that now proposed, is recommended, and generally followed by Physicians and Surgeons.

In offering his mite towards the alleviation of distress, however, the Author hopes he will not be thought presumptuous, should he venture to differ from received opinions, although sanctioned by great names.

As, from the very nature of the subject, he is, in some sort, obliged to take notice of the various theories which have been, and are delivered on the action of this fluid; he will endeavour to treat them with that candour which he would expect from others.

In doing this, he disclaims the narrow views and prejudices of party; unhappily too much attended to, by many, in medicine; nor will enter further into the subject than necessity requires.

P R E F A C E.

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Exceptions may perhaps be taken to particular parts of the theory;—he only can say in it's vindication, that he has endeavoured, as much as time and opportunity would allow, to elucidate it. He pretends not to infallibility; nor will repine at having such errors pointed out, as his own partiality may have made him overlook.

But should the general plan of cure (which has been collected from repeated observation and experiment) be approved, and succeed with others as with himself; particularly in removing the venereal disease, to which his attention has been more immediately directed;—so that the treatment of it may become familiar and certain, even to those not deeply versed in medical knowledge; and happily by that means many unfortunates of both sexes be saved from the merciless claws of illiterate Quacks; as well as from the ravages of a loathsome, but yet too common, distemper;—he will receive that kind of gratification which he wishes.

It is thought necessary to premise to the account of this mineral, that so many treatises have been written upon it's medical effects, as might induce some to suppose little was left for more modern enquiries.

Those who are versed in the practice of physic are sensible of the contrary; nor are they ignorant how few data we have to reason from, on the operation of medicines.

Although this may possibly be of some weight

in a chemical controversy, it can be of no moment to the Physician in a medical point

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of view. It will be sufficient for our purpose to point out it's essential qualities, in order to

enable you to judge of it's nature, which is a point of

E S S A Y,

of the nature of Mercury, and, we have reason to think, you will be enabled to

O N

General

The Operation of Mercury, &c.

Mercury is an opaque fluid of metallic brilli-

ancy, which is not altered by any substance, and which, when combined with lead, or with lead and diluted sulphuric

THIS substance, from it's singular properties, has occasioned a difficulty among some chemists with respect to it's classification: it's volatility seeming to allot it a place among the semimetals; whilst it's metallic brilliancy, resembling melted lead, and it's malleability in certain degrees of cold, entitled it to a rank among the metals: whilst, at the same time, the peculiar property of remaining generally fluid, seemed to claim that it should be classed by itself.

Although

Although this may possibly be of some weight in a chemical controversy, it can be of no moment to the Physician in a medical point of view. It will be sufficient for our purpose to point out it's ostensible qualities, in order to enable us to judge of it's degree of purity, which is a point of infinite moment, and, we have reason to think, too little attended to in general.

Mercury is an opaque fluid of metallic brilliancy, when perfectly pure ; when adulterated with lead, or with lead and bismuth combined, which last mixture is more complete, it has a duller hue, and is apt, when poured out upon a table, to run into threads or small streams ; not quickly collecting, as when pure, into globules.

For medical purposes it should always be distilled ; the passing it through leather, a common mode of purification, not being sufficient to free it from portions of lead, as combination with bismuth renders this capable of passing through such a strainer.

It

It is found in the bowels of the earth, mixed for the most part with sulphur in various proportions; with other oary matter, and sometimes pure in a fluid state: it is however not very abundant in nature. Different parts of Europe furnish small portions of it; as Spain, Hungary and Italy. It is found in South-America;—but the principal part of that we are supplied with, is brought from the East-Indies.

Mercury mixed with stony matter is easily separable from it;—by grinding the stone, suffering the mercury to separate, and lastly, by repeated ablutions carrying off the earthy matter; whilst the mercury remains from it's weight and insolubility in the bottom of the vessel,

It's separation from sulphur is a matter of more difficulty.—This may, indeed, be effected in small quantities pretty readily, by sublimation; but, as the method would be both too

troublesome and expensive for procuring large quantities; particular works have been constructed on a more extensive and cheaper plan, in different parts where this substance is found*.

Although this metallic fluid was known to the Ancients, it was supposed by them a poison, and only came into general use in medicine about the sixteenth century; as a cure for the venereal disease, about that time brought from America, and which resisted every other applied remedy †.

It is perfectly inodorous, and without any sensible taste, when in it's crude form and perfectly pure;—but divided by a gummy, or
other

* See Fourcroy—Leçons de Chemie.

† Mercury was in use, with a very few, as early as the thirteenth century, and applied in the cure of cutaneous affections; and even employed in ointment for the purpose of salivating, in order to remove these.

See Dr. Alston's Lect. on M. Medica, by Dr. Hope.

other medium, it affects the tongue with a disagreeable sensation.

It appears, as much as gold, to be a simple, not a compound body; for no experiments, hitherto made, have succeeded in reducing it into component principles, and in reproducing it from these principles.

A long continued quick and intestine motion between the particles of mercury, changes it by degrees into a dark powder; which may be again reduced to fluidity, by the application of heat.—By this agitation, therefore, it appears to have acquired something, which fire deprives it of:—and this something would seem to be pure air.

Mercury is of extensive use in the arts, as well as medicine:—it is acted upon by a variety of substances, and in combination with some of these, totally changes it's appearance, and some of it's properties. It's affinity with some of

the more active acids,—as the nitrous,—is strong ; whilst it requires a long continued heat and exposure, to combine it with air ; as in the mercurius calcinatus.

As we do not mean, however, to give a full chemical account of mercury in this place,—we shall proceed to what relates more particularly to our subject ;—attending, in the meantime, to those preparations of it, which, as being in constant use, in the practice of medicine, relate more particularly to it.

The necessity of a frequent recurrence to the use of this fluid in practice ; and, the frequent failure of it in the cure of venereal, and other, cases ; which appeared incurable without it ; among other considerations, have claimed the attention of public societies, in collecting, adjusting, and determining, such preparations, with the doses of each, as appeared most safe and efficacious. Among such, none seem preferable to the preparations ordered by the colleges of London
and

and Edinburgh, in their dispensatories. A list of these it does not seem necessary to insert here, both as they are to be found in the above publications, as well as for reasons to be given hereafter.

Having delivered as much of the history of this fluid, as was thought necessary to be premised, to the account of it's action and effects on the human body, the chief end in view; we shall proceed to this part of our subject.

We need scarce wonder at the bad success of the earlier Practitioners with mercury in the cure of disease;—they administered it empirically, and, therefore, often failed; such failure, however, was not, always, attributed to the mode of employing the medicine, and to their treatment of the patient; but, to the unconquerable nature of the disease itself, in it's confirmed stages :—hence, thousands were left to perish, under that severe scourge, the venereal disease, without relief. It is greatly to be
 regretted,

regretted, that, though in modern times the futility of such idea is abundantly proved, many sink under this malady.

The cause of this evil, with us, may, in a great measure, be attributed to disputes concerning it's "modus operandi" on the human body:—one party contending that it acted by it's weight only*; some, by it's astringency;—and others, that it cured by it's action as an evacuant, &c.

The latter opinion seemed long to have the greatest weight; particularly as it was broached at the time salivation was in constant use; and this discharge, procured by mercury, thought to be the only certain method of cure. This opinion has had a warm support from a celebrated Professor of the practice of physic, and whose works are at present in esteem.—However, after standing it's ground for a considerable time, it has been sufficiently refuted by experience;

* See Dr. Mead's Works.

perience ; so, that less seems necessary to be said on the subject, at present, than was intended.

A later opinion than any of these has been given to the world, in a treatise on the Venereal disease, by a very ingenious gentleman. In this book, the author tells us, that mercury cures the venereal disease by removing the morbid irritability of the solids, and not by any specific power ; and that, therefore, a particular regimen, with regard to diet, can have no effect, either in promoting it's operation, or preventing debility.

We confess ourselves at a loss to know what is meant by it's removing the irritability of the solids, unless he supposes this effect is produced by it's stimulating them ;—and if so, or if it has no specific power, why may we not give any other stimulant as well ?

It

It is also said by this author, that, if mercury acted as a specific in the Lues, we should have no more, or ought to have no more, to do, than to throw in at once a certain portion sufficient to faturate the virus.—I am apprehensive there has been a little too much precipitancy in this part of the ingenious gentleman's reasoning:—because, he should first have taught us a way of ascertaining the quantum of virus, before we could act in this manner; besides, where can we find a subject that would bear that quantity of mercury at one dose, or in one day, that is found necessary for the removal of his disease? A man may bear a pint, nay even a quart, of strong brandy in the day;—perhaps taken at one time, the consequence would be fatal. We hope what is contained in the following pages will tend to refute this hypothesis.

From repeated facts it appears “that mercury acts as an antidote to the venereal virus.” It's curing venereal ulcers by external application only, and removing the venereal disease
when

when administered internally, and often, when applied externally, without producing any remarkable evacuation, when other medicines, acting as evacuants, produce no such effects; are not among the weakest arguments against the former opinion of it's curing by evacuation; they strongly favour it's antidotal power: besides, in confirmed cases, it is not to be supposed that a partial evacuation, such as that by the mouth, could remove a disease which had tainted all the solids of the body, as well as the fluids.

Almost all the writers on this subject caution us to guard against the stimulant power of mercury, lest it induce violent inflammation: and to these cautions, indeed, we may, in a great measure, impute the practice of many, who make their patients undergo long courses of purging, warm bathing and low diet. Whether such practice is built on solid principles, we shall endeavour to shew in the sequel.

For the purpose of explaining our meaning more fully we shall, for the present, adopt the supposition, “ That the increased action of an
 “ animal fibre, is followed by a relaxation or
 “ debility of the same; and, that the longer it
 “ is continued, so much greater will the relax-
 “ ation or state of debility become, after the
 “ cessation of such action”*. What we mean by *increased*, and what most probably the Dr. means, is, an *exertion* beyond what is usual or accustomed.

If, then, it can be proved, that mercury acts as a powerful stimulant, but unconquerable, and not to be assimilated by the powers of an animal body; it follows, that every part of such body to which it is applied, will, in consequence of the longer or shorter continuance of it's exertion upon it, become more or less weak, proportionably to the quantity used. Observation favours this opinion. The emaciated subjects who have undergone courses of this fluid are our proofs.

This

* Cullen's first lines.

This view of the matter opens a wide field, and points to an examination of the action of stimulants in general, with the *particular* operation of each; which is not our design to enter upon in the present treatise: we shall endeavour, however, without much digression, to explain our ideas of the matter under consideration.

Vegetable and animal stimulants do not *seem* in an animal body, when applied in quantity proportionable to the force of each, such lasting, or permanently debilitating effects, as mineral ones. Here, if in any part more particularly of our work, we may perhaps be cavilled at: we know that henbane, hemlock, and some other vegetable productions may be adduced as producing more violent effects than most minerals.—Let us not, however, be hastily condemned; let us examine the quantities in which these have been applied; let us attend to the consequences of their application; let us *coolly* compare these with the effects of arsenic or lead in minute doses; and then, but

not before, judge, whether there may not be a foundation for what we have advanced.

What we have said appears to be the case, though perhaps in a less degree than many others, with the different preparations of mercury; the principal distinction with regard to the operation of which, depends on their being rendered more or less acrid by combination.

Corrosive sublimate, in the minutest doses, as a quarter or half a grain, often creates sickness, which has proceeded to vomiting and violent purging; whilst many grains of calomel have been taken, by the same persons, without producing uneasiness: this would seem to depend on the large portion of acid in the former, of itself indeed sufficiently irritating, but doubly so, in the form of this saline compound; as not being so soon divided by the fluids it meets with in the stomach, &c.

Lead and it's preparations, introduced into the habit, so as not to be quickly mortal, from the quantity administered, produces violent colics, consumptions, contractions of the joints, tremors, palsies, &c.

Arfenic, in minute doses, will produce similar effects, which are, perhaps, never got the better of.

Other minerals produce violent effects on the system; and some become so caustic by combination, as to corrode and destroy the parts to which they are applied.

In it's crude state, mercury is not observed to have, or produce, any remarkable effects on the body, and quantities of it have been found lodged in cavities (upon dissection) which gave no uneasiness through life*. It, therefore, requires a separation or division of it's particles to produce obvious effects. When thus divid-
ed,

* Mead, on poisons.

ed, either by combination with acids, air, or gummy substances, it acts, with more or less violence, according to the preparation made use of, the quantity of such preparation, and, perhaps, also according to the state of the body at the time of using it. Certainly, the more debile the body is to which it is applied, the effects will be so much the more violent and quick.

Most of it's effects on the system undoubtedly depend on it's stimulant power, and are to be explained from it; as, it's proving emetic, purgative, diuretic, diaphoretic, &c. and it's causing inflammation in ulcers, in a degree sufficient for the formation of good pus, when externally applied.

The employment of it, either by the mouth or skin, so as to enter the lymphatics, removes obstruction of the glands, by stimulating the vessels into action; and will seldom fail in producing that effect, if the gland has not become impervious

impervious from the concretion of the vessels, or too far distended by it's indurated contents, so that the fibres cannot recover their tone.

When mercury is either introduced into the habit by the mouth, or applied to the skin, in cutaneous affections, we can account for it's success only on it's stimulant power.

It acts as an escharotic, some of it's preparations being successfully used in destroying fungous flesh, by the same power.

In short, in what way soever we view the operations of this medicine, we must impute them *chiefly* to this power; remembering, however, that in the Venereal disease, it exerts an antidotal one in conjunction with that power: nor can any thing we have said, in thus taking a view of the action of mercury, be construed in any manner that may tend to the refutation of such an opinion;—an opinion, as already observed, supported by facts. Proceed we now to examine, whether that debility already mentioned,

tioned, does or does not follow it's use. As we go on, we shall not lose sight of what we have already said of it's antidotal power.

That languor, inability to perform wonted exercises, loss of appetite, paleness of the countenance and flabbiness of the skin, laxity, paleness and sponginess of the gums; vertigo, profuse sweats on slight exertions, nausea, a quick weak and small pulse, fever*, swelling of the legs, pains in the articulations, and other symptoms of extreme debility follow mercurial courses; and these, in a greater or less degree, according to the quantity taken, and other circumstances, cannot have escaped the notice of those who are much conversant in practice. Nay, such debility have we known follow mercurial courses, as brought on dropsical and sometimes pulmonic complaints, with a long train of evils.

From the property of mercury acting as a strong stimulant, it might be expected, that inflammation,

* See Plenck, Swidhauer, &c.

inflammation, in a high degree, would often follow it's use in full habits; this, however, is prevented, by the usual mode of exhibiting it in small doses, and a gradual manner: besides, the transition from such a state to that of debility, is commonly so very rapid, that we can scarce observe this effect. That such, however, may actually happen, in a certain degree, we can have no doubt, from the effects of stimulants in general, and from the nature of this as belonging to that class.

It has been observed that whilst mercury operated on the system, the blood drawn was covered with a buffy coat. Notwithstanding this, however, we can by no means suppose that such persons were labouring under general inflammation; their pale, emaciated looks, and the degree of relaxation which soon follows it's use, sufficiently warrants this opinion. At this time, too, the pulse is quick and small, encreasing it's pulsations to 120 or 130 in a minute, sometimes; which proves the vis vitæ to be

considerably diminished; for we find such a pulse in putrid fevers, the confluent small-pox, &c.

From these effects, then, which are pretty uniform, and from the foregoing account, we hope it will be admitted, that mercury acts as a general stimulant, not to be overcome or assimilated by the powers of the system, so as to form a part of it; and, therefore, inducing debility in it. By what is to come after, this will be further confirmed, and all together would lead us to conclude it injudicious, to use large evacuations, or indeed almost any, as preparatory to, and an abstemious regimen *during* a course of this medicine: as from such practice, longer time is taken to get rid of the first complaint, if it is cured at all, and frequently others, as before observed, induced by such treatment.

From such a view of the subject we should proceed to that method of administering mercury

cury

cury which appears to us, in consequence of our theory, to be most rational, and best calculated for removing disease; but are stopt by a question which prevents itself in the investigation of this matter. It is this;

Why does mercury produce, particularly, salivation, when applied as a remedy to human bodies, and spasms and contractions in those employed in preparing it in the arts, separating it from cinnabar, &c. ?

This has always appeared extraordinary to the writers on this subject; and, if we mistake not, is to this day rather admired at, than accounted for. But, when we consider, that salivation, and that to a great degree, appears in these persons, as well as the contractions; (and indeed we should suppose commonly precedes such spasmodic affections) our wonder will cease; particularly, when we find ourselves enabled to trace the production of salivation itself.

These appearances, then, appear to us, evidently, to depend on the debilitating effects of this mineral fluid ;—for salivation is not produced, until some symptoms of weakness are induced, some quantity (generally speaking) taken into the habit, or without it is administered to persons of very irritable ones: in which last cases, for in all the effect is the same, nearly, but varying in time and degree, except it passes off by the intestinal tube, it is produced very quickly. From all which, as well as other reasons, we are led to suppose, that this discharge is caused by general debility.

The more we attend to this matter, the more we are confirmed in it.

Salivation is not readily induced in a person of vigour, whose organs of digestion are strong; nor in a person of tolerable strength, who lives at the same time on a diet of animal food, and uses a good deal of exercise; until he is brought

low

low by disease, medicine, confinement, or by an abstemious course.

On the contrary, it is easily brought on in weak viscera; in the scorbutic, and in those of delicate habits; and, by the acrid preparations of mercury more readily than by the mild.

In the dyspeptic there is, for the most part, a flow of saliva to the mouth, which is in greater or less degree, or quantity, according to the violence of the disease, and other circumstances. In such, we have known a salivation, without a particle of any medicine whatever, proceed to the quantity of many ounces in the day.

Sedentary persons, the studious, women who lead indolent lives, and many mechanics, who, from the nature of their occupations are obliged to sit constantly, have rarely any great thirst; owing to the quantity of saliva secreted; and we well know, such persons are very liable to, and often really are violently afflicted with,

dyspeptic

dyspeptic complaints, and great laxity of fibre. In such, mercury produces it's salivating effects, generally, quickly ; and it is well known, when salivation proceeds to any considerable height, that gripes and diarrhoea, with, sometimes, bloody stools, come on ; whilst the stomach becomes so greatly weakened, that the smallest portion of food creates the greatest uneasiness. Nausea and vomiting, are sometimes observed at such periods.

On the other hand, we cannot find the least affinity between mercury and saliva : they will scarce by any means combine*, even in the minutest portions ; nor do we see any colour of reason for supposing, (as we have heard some support) that a particular union is formed with this fluid, when taken into the habit, more than any other in the body.

If mercury had any particular connexion with, or disposition more particularly to effect
the

* Plenck, by Saunders.

the salivary glands, why should the gums become soft, spongy and sore, and the breath foetid before salivation comes on? And why should a generous diet, with moderate exercise and warm cloathing, prevent this effect; even when pretty large quantities of the medicine are administered? Besides, it cannot be owing to any determination to the salivary glands, particularly, or from inflaming these glands; for when salivation is induced, the body *in every part* is debilitated; and these glands, though greatly enlarged and irritable, are not affected with inflammation, properly so stiled, but rather with that species, or bordering on that species, of affection which appears in the fauces in the putrid sore throat. Other secretions, as well as the salivary one, are encreased in salivation; as urine, &c. We cannot refrain observing here, that many of our secretions are greatly encreased in low diseases;—as urine, in diabetes and hysteria; bile, in the yellow fever of the East and West Indies, &c.

It seems, therefore, highly probable at least, that we are to trace salivation from the debilitating effects of mercury on the system; and this debility seems more evident in the stomach, than any where else:—and this may be well supposed must happen, both from it's structure and office.

Why it produces spasms and contractions, I think may be readily explained, from what has been already observed of it's stimulant power when applied in excessive quantity; as happens to those employed in working mercury, and who are almost perpetually immersed in it's vapour.

“ Fabri aurarii a folius hydrargyri vapore,
 “ frequentes sudores frigidos, lypothymias,
 “ convulsiones, lassitudines, tremores, *ptyalismos*
 “ sibi contrahunt.”

Ephem. Germ. dec. 1. an. 1. obs. 81.

“ Rari admodum sunt fossiores, & hujusce
 “ materiæ artifices, tametsi robustissimi fuerint
 “ tempe-

“ temperamenti, qui in eo opere, ad quartum
 “ usque annum, incolumes perdurare valeant;
 “ quippe partium omnium tremore concuti-
 “ untur.”

Matth. apud Alston, pag. 80. V. 1.

Upon the foregoing principles we can explain the different phenomena attending the use of mercury; as, why it produces very moderate effects in some, whilst in other constitutions, the most violent symptoms are quickly brought on by it. Why it produces salivation, gripes, or diarrhœas, in cold countries, so that patients are obliged to remove to warm ones for the cure of disease, in order, that these effects may be obviated; and why also, over-relaxing heat, by confinement in close rooms, rolling the body in quantities of flannel, and at the same time an abstemious regimen, hot baths, &c. produce the same effects as complained of in the other extreme. The cause of failure, also, in attempting the cure of disease by large quantities frequently repeated, (as

thus the system becomes overcharged,) and either salivation is induced, or violent diarrhœa brought on, may be *readily* accounted for: why the acrid preparations produce these effects in a more remarkable manner; and, also, why ulcers, in different parts of the body, have arisen during it's continuance, attended even with caries and gangroene.

It may possibly be asked here, If salivation follows mercury from it's debilitating effects on the body in general, and appearing more particularly in this discharge, and the weakness of the stomach, and other abdominal viscera; why is not the same effect produced, when the body is debilitated by other causes?

We would answer this by another question; Why is the appetite encreased in diabetes, whilst the system in general is weakened: or, why does the appetite often remain, while not only the body in general is debilitated, but even the abdominal viscera diseased; as in rickets?

But

But that we may not even seem to avoid this question, although we might safely pass it over until the above queries were answered ; we observe, that particular diseases, have their peculiar symptoms ; by which, although joined with some symptoms of other morbid affections, they are in general distinguished from such. Hysteria, which according to Sydenham, and others, puts on various appearances, is known by the globe or ball ascending to the fauces, and by the copious flow of limpid urine, &c. which frequently attends it. We often observe a flow of saliva to the mouth in this disease.

As we find some diseases, where debility prevails, affect the abdominal viscera more than others ; so also do we find a diversity in such affections.

In Scurvy, some of the phenomena greatly resemble what happens in salivation ; to wit, lax, spongy gums and loose teeth, foetid breath, excoriation of the inner parts of the mouth, general weakness, particularly of the joints ;

and, most commonly, a more than usual flow of saliva to the mouth.

Eruclations, flatulencies, anxieties, profuse discharges of urine, obstinate costiveness, and a thin and frequent spitting attend melancholia. See *Boerb. Aph.* 1109.

In Pyrosis, and frequently in Cardialgia, there is observed a copious spitting: moreover we observe, that disagreeable things taken into the mouth, transmitted to the stomach, and rendering it uneasy, although the mouth shall have been washed after swallowing them, occasion frequent and copious sputation. A dose of corrosive sublimate, in spirits or in water, has thus caused a spitting, which has continued for upwards of half an hour.

But what tends strongly to confirm the idea of salivation being caused by debility, and which debility appears more remarkably in the viscera of the abdomen, is, that this discharge

is most effectually removed, and may be completely prevented, by whatever strengthens these organs: whilst debilitating powers applied either encrease the discharge, or bring on diarrhœa. We would also observe, that, so far as we know, salivation does not arise in any persons, except their organs of digestion are weakened; or without irritating substances are applied to the salivary glands themselves, or parts contiguous.

Before we proceed to the cautions to be observed in the administration of the medicine itself, and to the regulation of patients under courses of this metallic fluid; we think it necessary to say a few words on it's preparations in general, and to give our reasons for thinking, why some should be preferred, and why others seem altogether unfit for the cure of disease.

As we suppose that mercury cannot remove the venereal disease, without coming into contact with every particle of the virus disseminated

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nated through the body, and acting upon it; and as it appears likely, that in other obstinate complaints, also, it exerts it's influence the more effectually, the farther it is carried into the system, so as to affect every the minutest part of it: therefore, it would seem, that such preparation or combination, which may enter *every* the smallest capillary, and be taken *safely* for such time as is necessary for removing the disease, without producing violent effects, must be the best.

From what has preceded, it will scarce be supposed we shall reckon among such, either corrosive sublimate, mercurius dulcis, mercurius calcinatus, or turbith mineral, with a long list of others of a similar nature; from the administration of which (some more particularly than others) in small doses, follow profuse diarrhœas, tenesmus, vomiting, and salivation.

Any medicine which creates a great degree of irritation in the first passages, is ill adapted
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for entering the mouths of such delicate vessels as the lacteals. Indeed we imagine that *no* highly irritating substance whatever, can enter them, until first well diluted, and sheathed by the surrounding mucus. If this is truly the case, then, we clearly see one disadvantage attending them, viz. that of not being taken into the mass in such quantity (in irritable habits particularly) as we may wish.

These considerations must give a decided superiority to the simplest preparations; such as that of Plenck, with gum, or the mercurial pill of the Edin. pharmacopeia; which, indeed, have all the advantages of the former (if carefully prepared) without their disadvantages. Not one of the acrid preparations can be given with such certainty, as their operation is more precarious. All these produce very remarkable and quick effects in a few days, before it can be supposed that a sufficient quantity is taken into the habit for the removal of disease; and evidently, before the removal
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of many symptoms of that disease. Besides, with these very preparations, we are ordered to combine opiates, and to give them in the minutest doses, in order to render them more mild in their operation. No such combination is requisite with crude mercury, divided by gums, honey, or mucilage; which may be continued, with proper management, for many weeks, nay for months, without inducing any violent symptom.

Hence then, it would seem, that all the arcanas and boasted preparations of mercury, are inferior to the above simple combinations of it; but, as the efficacy of these last depend on the purity of the mercury itself, we should be particularly careful in this respect; for which reason, attention to the directions heretofore mentioned is absolutely necessary; to which we may add, that, if upon being rubbed with vinegar it imparts any sweetness to it, it is unfit for use.

Combi-

Combinations of mercury with antimony, heretofore much attended to, do not seem to encrease the efficacy of the former; and all combinations of it, with active substances, seem only to render it more or less acrid, without extending it's virtues*. All such, then, may be properly comprehended under what was said of acrid preparations in general. We shall only add to this account of the preparations for internal use, that the Unguentum citrinum, mercurius dulcis, and mercurial ointment of the Edin. College, seem abundantly sufficient for external purposes, in the variety of local, as well as general affections, for which mercury is applied. Extremely acid preparations are painful, as well as unnecessary; nor do we think there is any purpose they are applied to effect, which these few will not succeed in, and with more ease.

* That sulphur mixed, in large portion, with this fluid renders it almost inert, is well known. It is a singular effect, and is to be considered only as an exception to the general rule laid down.

We have repeatedly known *mercurius dulcis* remove chancres in a few days, without uneasiness; by sprinkling them frequently with it; and, believe it will scarce fail in such cases.

The *ungentum citrinum*, we are assured, is very powerful in removing many cutaneous affections, as well as venereal scurfs, by Dr. Monro; who, also informs us, that it produces excellent effects in old ulcers: and, from it's active stimulant properties, we may judge so.

In consequence of that dispute which has arisen with respect to the nature of the two appearances following impure coition, namely gonorrhœa and lues venerea, it has been doubted whether mercury was necessary in the former; as, by some, it is supposed that this matter is of a different nature from the lues, and may be cured by lenients, without the necessity of recurring to so Herculean a remedy; which, they think, may injure the constitution,

stitution, without producing counterbalancing advantages.

It is not our intention to enter into this dispute ; because it is not easily brought to the test of experiment, and because we hope the method recommended of administering mercury, with as much safety as any remedy whatever, may obviate the objections formed against its use.

It serves our purpose, also, to have observed, with many others, that gonorrhœa *frequently* yields to mercury : and, we have repeatedly known recent, as well as infections of this nature of a long duration, quickly cured by the application of mercurial ointment to the penis, in the course of the uretha ; giving, at the same time, plenty of mucilaginous diluents ; with now and then an anodyne to abate irritation when excessive : in which course, bathing the parts with warm milk and water, greatly contributed to the alleviation of inflammatory symptoms.

Whether the cure would not have succeeded without the ointment, we will not pretend to say; but we well know, infections of years standing, of this nature, have been speedily removed by the preceding course.

It is observed in that treatise lately published, which we have had occasion in the former part of this essay to mention, that gonorrhœa has been contracted, whilst a patient has been under a course of mercury; and, this is thought to be a proof, that this medicine does not exert an antidotal power. We must, again, repeat that we cannot admit this as a proof; because, the portion of mercury circulating with the mass of fluids and coming into contact with that matter which produced gonorrhœa, at the time, or even after coition, might not have been sufficient for it's saturation. We know for a *certainty* that venereal ulcers are effectually cured by mercurials; it *remains* to be proved, whether other applications will succeed as effectually.

Mercurial injections, or, indeed, any other, in gonorrhœa, seem not only unnecessary, but improper during the virulence of the discharge; often encreasing the inflammatory symptoms, and forcing a tainted mucus further into the urethra; whence, frequently, various ill consequences arise; as, a swelling of the testes, suppression of urine, and such inflammation may be induced as will end in stricture; and, in reality, there is reason to imagine, that strictures of the urethra arise from this cause more frequently than any other: for, although they sometimes succeed in stopping the discharge, and that speedily, yet where the risque is great, and in very irritable habits every degree of inflammation is dangerous, we would gladly see them discarded. If the cure by ointment is not quite so soon effected, we believe it's certainty and safety is much greater.

When the inflammation has subsided, and the discharge has lost it's virulence, proceeding
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from laxity only ; perhaps gently astringent injections may be employed with advantage.

That mercury will not always remove lues when used so as to promote salivation, even by repetition in the same person, is abundantly proved from numberless examples ; and as well known, at the same time, that of all the remedies we are acquainted with, this only is with certainty to be relied on for the cure of this malady : this, alone, sufficiently proves that the idea of mercury curing it by evacuation is not well founded. Good effects, in confirmed cases, are in general only found, when it is used in such a manner as to pervade the whole habit, without producing any remarkable discharge. The repeated success attendant on such method warrants this assertion.

Some, indeed, do not hesitate to affirm, that the venereal is a disease of mere laxity or debility, and that stimulant remedies, by removing

ing this, will cure it, without inducing the evils which have been complained of, as following the use of mercury; (great part of which evils, however, are oftener to be attributed to an impoverishing regimen, &c. than to the medicine itself) therefore, say they, nothing more is necessary than that the patient should drink plentifully, and for a continuance, of wine or spirits, or such like stimuli; or to take opium. To this *strange hypothesis* it may be only necessary to oppose facts; for it is well known that opium has *repeatedly* failed, under the most judicious management. (We might appeal to examples within our own knowledge.) And, if all stimulant medicines will cure this disease, why will not antimony, copper, or its preparations, iron, zinc, tobacco, hemlock, euphorbium, or any other acid and stimulating substance animal, vegetable, or mineral, succeed, when applied to chancres, or given internally.

On the other hand, a very ingenious writer informs us, that mercury cures this disease by removing a morbid irritability of the solids, induced by the venereal virus; and, in which he supposes the disease to consist. Now, we would appeal to every practitioner, who has had, even moderate, opportunities of seeing patients labouring under this disease, and undergoing mercurial courses for it's cure; whether the solids do not become evidently more irritable after mercury has affected the system, than they appeared before. In those, who have not taken it for the cure of the lues, but for other affections, the same thing is obvious. We imagine it will scarce be doubted by this author, that there is a great degree of irritability prevails in scurvy; yet surely, mercury to remove this would be improper.

As before observed, we can readily perceive the reason why ulcers remain after large quantities of mercury have been taken so as to induce salivation, from the excessive debility induced

duced both by medicine and regimen. The venereal disease, however, is often actually eradicated from the system, whilst such ulcers remain in different parts of the body; and would frequently heal of themselves, was the use of mercury laid aside. Hence it appears, that whilst the body is overloaded with this fluid, or in other words, that too great a quantity has been given, we may be deceived in the actual state of our patient; being liable to suppose his ulcerated appearance arises from, or depends upon, the stubbornness of the venereal disease; whilst the reverse is truly the case

It is no easy matter, perhaps, to form a certain judgment, without first discontinuing the medicine for some days, and observing the effects of such procedure, whilst the patient is allowed a full and generous diet: if the ulcers do not seem to mend by such means, a further quantity of mercury may be necessary.

If, in the cure of disease, we administer Plenck's preparation with gum, in the form of

pills, these should be made fresh every fourth or fifth day ; as, on being kept, they are apt to become so hard, that possibly they might pass the primæ viæ undissolved.

Mercurial friction, however, seems the most eligible method of introducing this fluid into the system ; but where it is either disagreeable to the patient, or frets the skin too much, the pills may be recurred to ; and either the former, or those made according to the Edin. Dispensatory, with honey, may be administered.

Mercury has been, and is daily used for a variety of complaints, but it's frequent failure in the cure of many diseases has, with justice, abridged it's use. It is unnecessary, and perhaps might be deemed arrogant in me, to enter into a detail of those which seem likely to be removed by it : this will readily occur from the foregoing account of it's operation ; if that explication by future experience shall be found just.

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We know it has been frequently recommended to give large quantities of mercury in the Passio Iliaca, or Volvulus;—not to mention the uncertainty, which every one knows must attend it's exhibition in this case; we are assured, by a celebrated professor, that, upon the dissection of a man, to whom labouring under this disease, this fluid had been copiously administered, he found the mercury every where divided into small globules; part in the intestines, part in the stomach; so that the mechanical pressure which it was expected would, from it's weight, have been exerted, was lost: and, as we often learn more from one unsuccessful, than from many fortunate cases; may we not suppose that in those which come under the latter denomination, where this method has been practiced, other circumstances may have contributed to—perhaps effected—a cure?

It *sometimes* happens, that in venereal patients, ulcers, from their appearance, are pretty *certain* marks of the disease not being cured,

whilst under courses of mercury, when these last are so conducted as *not* to induce any violent symptom. In such, fumigations with cinabar, to heal them, are evidently improper; because they deceive by drying up the sores. But when such ulcers shew a tendency to cicatrize, by appearing clean, and granulating about the edges, fumigations will quicken their healing.

It is proposed in the administration of mercury, in whatever disease it is used; to pay strict attention on it's first administration to full and muscular habits; in order to avoid bringing on any inflammatory symptoms by this powerful stimulant; but, in opposite constitutions, and even in robust ones, after it's use for some time, we are carefully to guard against it's debilitating effects. This is to be done, by never suffering salivation to be brought on, if possible;—by leaving off the medicine when the gums come to be slightly affected; by a nourishing diet of soups, animal food, and jellies; with the moderate use of wine;—the bark, now
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and then, with exercise, either on foot, horse-back, or in a carriage, when the weather will permit. By such means, it may be continued without injury, for almost any period, if taken in moderate quantity.

It is to be, always, given, combined with the mildest substances; as gum-arabic, or honey, (well triturated together) in order that it may give little or no irritation, but be readily taken into the circulation: should it create the smallest degree of uneasiness, an opiate is either to be combined with it, or given at intervals.

Should salivation, from want of care and attention, appear, it is to be immediately suppressed, for obvious reasons: for this purpose, we have not found any thing more effectual than laudanum frequently repeated. Purgatives, at this time, are liable to bring on violent diarrhœas; and, if this effect doth not follow their use, the spitting is increased.

As great warmth debilitates the body, so moderate cloathing, and such a temperature of the air as the patient feels comfortable, is to be preferred, as tending to strengthen it. Wet linen, acids, a damp atmosphere, excessive fatigue, with every thing that contributes to debilitate the body, are to be carefully shunned.

The same cautions are requisite in the internal administration, as in the external application, of mercury.—In the latter, the patient should apply it himself, if he has strength, if not, a careful assistant, whose hand for this purpose is covered with a piece of bladder, is to be entrusted with the execution of it. Before friction, the parts should be carefully shaved, and afterwards covered with calicoe or flannel.

When the ointment is designed to affect a particular gland, it is not to be applied directly on such gland, but in the course of lymphatic circulation to it.

Little seems necessary to be said of the method recommended, by some, of introducing mercury into the system by the lymphatics of the mouth; as the disagreeableness of it, as well as the uncertainty of the portion this way taken into the habit, with other causes, have prevented it's coming into general use.

As we know not into whose hands this Essay may fall, we seriously hope, that the sanction granted to fuller living, whilst under mercurial courses, than has been formerly permitted, will not be taken by the unthinking and juvenile part of mankind in an improper sense. We will venture to assert, that let what cautions soever be taken, the mischiefs arising from repetitions of infection are destructive in their consequences; and no one can be ignorant of the manifold mischiefs attending *excess* in eating and drinking, particularly, whilst labouring under disease.

We shall finish this subject by observing, that in constitutions which have suffered much from
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the use of this remedy, whether by it's bringing on affections of the lungs, great general debility, emaciation, a very irritable state of the chylopoietic viscera, or when ulcers remain from excessive laxity and weakness only: a milk diet, with country air, and moderate exercise in a carriage, or such other manner as can be born with ease, is to be strictly followed, until the stomach is found capable of bearing the bark, wine, and animal food.

Having hinted at the mischiefs arising from the use of the warm bath during a mercurial course, it may be thought almost unnecessary to mention the matter expressly; we should be of the same mind, did we not know that this practice is sanctioned by some of our most eminent practitioners; and from experience we can say it is a pernicious one.

F I N I S.

Errata in some few of the Impressions.

Page 40, Line 14. *for mercury read it.*

