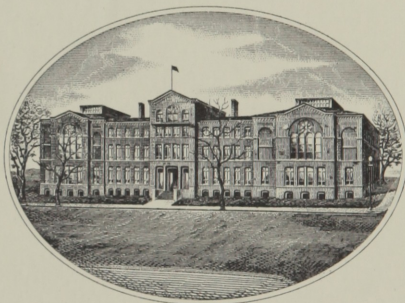


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C A T E C H I S M,
P H Y S I C O - M E D I C U M :

BEING AN

E P I T O M E

OF THE THEORY AND PRACTICE OF

P H Y S I C ;

AGREEABLE TO THE BEST AUTHORS BOTH ANTIENT
AND MODERN.

TO WHICH IS ADDED,

Some practical RULES and OBSERVATIONS,
and a DISCOURSE, on the Nature, and Ope-
ration of MERCURY, as a MEDICINE.

By a STUDENT in PHYSIC,

IN C O N N E C T I C U T.

Ars quælibet florito.

H A R T F O R D

Printed by WATSON AND GOODWIN.

1778



P R E F A C E.

THIS short compendium of physick, wherein the art, both of theory, and practice, is epitomised, in a method so concise, and familiar, will no doubt be very acceptable to every true physician; but especially beneficial to students, and young practitioners, and that chiefly by helping their memories, as it is in some measure a recapitulation of the great things belonging to the theory, and practice of physick: being (as to sentiment) mostly a collection from the best authors, both ancient and modern. The discourse on mercury, though not collected in any sense, is notwithstanding formed on principles of sound philosophy, is therefore capable of demonstration, and agreeable to the sentiments of the best authors, is therefore a proper foundation for much improvement, by the ingenious, and as the subject is very important (mercury being the most sovereignly powerful, yet dangerous medicine) so it is likely to be of great service to mankind. But alas, how few true physicians! how few theoretick practitioners in the midst of so many advantages! so many noble, theoretick, and practical authors, in fair English, Boerhaave, Huxham, Hallar, and many more, (too many here to name,) all well known, with which we are of late so happily favored. Surely those that practise in ignorance are without excuse, when the means of knowledge are so handy, and so plenty. Are the lives of mankind of little worth, that every ignorant pretender must needs handle them? And yet how engaged?

ged? How earnest they are? And how many arts they use to gain their reputation as physicians? How do they take the advantage of every common prejudice? and use every insinuation, to gain rep^ute? How do they cry down Mercury, and Jesuit's Bark? yea, and every thing else of importance, in physⁱc, that they may be accounted safe, although their patients lives, and healths are at stake, for the want of them, and as they know not how to use; but condemn them; so perhaps, if a man of skill should advise them, they may not be admitted. How many men of popularity, learning, and sense act the mean part, to cry down theor^y? and because they do not understand it, they would represent physⁱc as a kind of chance work, and its technical terms, as an heap of jargon; as if there could be no sense, or reason in those things, they have never learned. How much damage is done to the true cause of physⁱc, by men of learning in other matters, who take up the practice of physⁱc on quack principles, and even write against theory: the e being (a little more as it were) refined, and splendid quacks, are more bold and daring in their practice, and use medicines of the greatest importance, at all adventures, and so bring them into disgrace, and more strongly prejudice the populace against them, by their unskillful, and abusive use of them. How much harm comes even by receipts? although very skillfully composed to suit some particular cases, which falling into the hands of quacks, of every denomination, sometimes enable them (by chance) to make cures, tho' they know not how, nor why: for by this means, they get the name of physicians, though destitute of every real qualification to make them such, and having a name, they may now rob men of their lives, healths, and estates with impunity: for though by their receipts, they may (by chance) effect cures, in some instances; yet in seemingly the like
case.

case, there may be many different circumstances, not discernable, but by true physicians, and so their medicines, so much depended on, prove insufficient, yea even destructive; but these false pretenders, having done the best they can, do not feel themselves to blame, however ignorant they may be, of the causes of diseases---the nature of medicines, or the constitutions, and circumstances of their patients. How regardless are men of sense of this important controversy? How little are true physicians regarded? How little encouraged? How regardless are our legislators of this controversy, important as the lives, and healths of mankind are? How careful are they to regulate almost all smaller matters? And must this stand by till provisions are made for every thing else, and even then be totally neglected? It is of great necessity therefore to call upon the rational the candid, the judicious, and public-spirited part of mankind, and especially on our legislative authority, to concert measures, to regulate this very important affair: Difficult as it may be, the importance of it may apologize, yea, even counterbalance, and much over-balance the trouble, that any legislative body could take in forming a regulation of physicians: For what (in this world) is of more worth than life, and health, which are at stake? or what good can the enjoyments of life do us, while languishing on a sick bed? or groaning in extreme pain? There is no need of so many hazards in practice; there is not so much uncertainty, in the operation of medicines, as is represented, by some (perhaps only as a cloak for their ignorance,) for the theory, and practice of physic are as rational, as the mathematicks, only let them be understood. The theory being understood, lays the only foundation, for a rational practice, as has been long since demonstrated, by Dr. Boerhaave. Now, from these, and such like considerations,

ons, an apology for publication may easily arise in the readers mind, if any should be thought necessary.

In fine, that this short tract on theory and practice, contained in the following pages, may serve to recommend theory, and assist towards a rational, theoretick, and safe practice, is the sincere wish of the public's

Humble Servant,

J. M. 1778

Norfolk, March 17, 1778.

CATECHISM,

Catechism, Physico-Medicum, &c.

The INTRODUCTION.

1 QUESTION. **W**HAT is Physic ?

ANSWER. The knowledge of all natural bodies, with their mutual dependencies ; but in a more limited sense 'tis applied to the science of medicine.

2. Q. What are the objects of Physic ?

A. All natural bodies ; but in a medicinal sense, the animal œconomy * or life, health, disease, and death : “ Life as to its continuance, health as to its preservation, disease as to its prevention, and removal, death as to prognosticating its approach, and keeping it off till the machine is worn out.”

3. Q. How is Physic divided ?

A. Into

* As the whole of philosophy is comprehended in the knowledge of all natural bodies with their mutual dependencies : so 'tis the sum of all medicinal knowledge, rightly to understand the various parts of the animal œconomy with their mutual dependencies : for he who does so can certainly readily discern even the least disorder therein and also by what mediums, or ways they may be rectified Thus the science of medicine is an epitome of philosophy in general, from which it borroweth many helps, and illustrations.

A. Into five parts, viz. "Physiology, Pathology, Semeiotica, Prophylaxis, and Therapeutica."

P A R T F I R S T.

4. Q. What is Physiology ?

A. The animal œconomy, or the knowledge of the natural constitution, of the human body, in its healthy state.

5. Q. Of what is the animal œconomy composed ?

A. Of solids and fluids.

6. Q. What are the animal solids ?

A. They are the rudimental stamina, of our bodies, or fibres, of various magnitude, shape, and direction : which are formed by nature, into nerves, bones, cartilages, ligaments, membranes, muscles, vessels, and viscera : these are the solids, and contain the fluids.

7. Q. How are the animal solids systematically divided ?

A. Into six systems, viz. the nervous, arterial, venous, muscular, osseous, and visceral systems.

8. Q. What are these systems of the animal solids ?

A. The nervous system is the brain, and all its productions, conveying the various sensations to every part of the body ; as seeing to the eyes, hearing to the ears, smelling to the nose, tasting to the tongue, feeling to the external, and internal parts of the body, and motion to the muscles.

A. 2. The arterial system containeth all those conical, converging, blood vessels ; that receive the blood

blood from the heart (and by their systolic, and diastolic motions) carrieth it to every part of the body : for its nutrition, growth, and the various purposes of secretion, excretion, life, and health.

A. 3. The venous system containeth all those diverging blood vessels (without systole, or diastole) that collect the blood, from the various corresponding branches, of all the arteries, and return it to the vena-cava, and heart.

A. 4. The muscular system containeth all those fibrous, fleshy, or tendonous portions, that are variously fastened to the bones : for their stability, and the purposes of motion.

A. 5. The osseous system containeth all those closely connected fibrous substances, that are hard, and inflexible, which we call bones ; serving to keep the body in shape, to defend the internal parts, and to assist the muscles to perform distinct actions in motion.

A. 6. The visceral system containeth all those parts to which nature has assigned some particular use ; either for the whole body chiefly, or for one another particularly ; and the whole body ultimately ; for the purposes of digestion, and chylication : the heart to receive, and propel the blood : the lungs to receive all the blood, from the right ventricle of the heart, as it returns from the various parts of the body, together with the new chyle, and by the help of respiration to resist the blood ; for the various purposes of nutrition, accretion, and secretion : the liver to secrete bile ; for the purposes of chylication : the spleen to prepare blood, for the liver : the kidneys to be a sink to the whole body to wash out of the

blood those particles that are worn out, and become unfit for nutrition, together with those particles of the solids that are abraded, by the power of circulation, and the unprofitable salts and oils : the testicles to secrete semen ; for procreation, that our species may be propagated ; also to this system belongs all the glands.

9. Q. How are the dependencies, of the several systems, of the solids mutually performed ?

A. The brain, being the radix, the medulla oblongata, and spinalis the stock, and the forty pair of nerves the branches ; the nervous system is therefore the most fundamental of all : more especially, as by the expansion of the nerves are formed bones, cartilages, ligaments, membranes, muscles, vessels, and viscera, and of consequence all the systems of the body ; yet the visceral system supplies the venous ; the venous supplies the arterial ; the arterial supplies the nervous ; the arterial and nervous supply the arterial, venous, muscular, osseous, and visceral systems.

10. Q. What are the animal fluids ?

A. The blood, lymph, and serum, yea, all that is secreted from it ; such as perspiration, sweat, urine, saliva, succus gastricus, pancreatick juice, bile, mucus, semen, sebum, cerumen, and the like.

11. Q. How is the circulation of the blood performed ?

A. By the action of the heart, and arteries : thus the right auricle of the heart, which is in its systole, when the right ventricle is in its diastole and the reverse, receives the blood from the vena-cava ; and by a mechanism, by which it cannot return into the vena-cava,

vena-cava, upon the contraction of the auricle the blood is forced into the ventricle ; and by a mechanism, by which it cannot return into the vena-cava, upon the contraction of the auricle the blood is forced into the ventricle ; and by a mechanism, by which it cannot return into the auricle, upon the contraction of the ventricle, the blood is sent into the pulmonary artery ; to suffer the action of the air, in the various extream branches of the pulmonary artery, spread upon the many vesicles of the lungs ; from whence it is collected, by the various corresponding branches of the pulmonary vein, and returned to the left auricle, and ventricle of the heart : where by a like mechanism, it is received, and sent into the great artery, from thence into all the arteries of the body, to be secreted by all the glands, fitted for secretion : from whence it is collected, by the various corresponding branches of all the veins ; and the remaining blood returned to the vana-cava, as before.

S E C O N D P A R T.

12. Q. What is Pathology ?

A. The knowledge of the diseases incident to the animal œconomy ; and comprehends their differences, causes, and effects.

13. Q. What are the differences of diseases ?

A. They differ, as to diseases of the solids, and diseases of the fluids.

A. 2. As to cause they are divided into " Idiopathic, sympathetic, hereditary, connate, or acquired."

A.

A. 3. As to subject they are divided into those of children, young people, adults, and old folks.

A. 4. As to time they are divided into most acute of four days, per-acute of seven days, acute of twenty days, and all the rest are chronical.

A. 5. They are divided as to season into vernal, autumnal, continual, intermitting, and remitting.

A. 6. As to stage they are divided into the beginning, increase, state, declination, and end.

14. Q. What are the causes of diseases?

A. These are very many, and sometimes very complicate; which to find out the ablest physician need use all his sagacity; but in general, all errors in the non-naturals, all solutions of continuity, and whatever disturbeth the even motion, of the circulating fluids, either by obstructing, contaminating, constringing, or relaxing; rendering the fluids too thick, or too thin; and the solids too much braced; or relaxed; such as *plethora*, *lentor*, *rarefscence*, and all sorts of *acrimony*.

15. Q. What are the effects of diseases?

A. They terminate, "in health, another diseases, or death.

T H I R D P A R T.

16. Q. What is *femliotica*?

A. General signs of health, and diseases; which arise from two sources, viz. the animal oeconomy, and observation.

FOURTH PART.

17. Q. What is prophylaxis?

A. The preservation of health, and “prevention of diseases: having three rewards to crown it viz. the preservation of health, when present; the prevention of diseases; and the protracting life, to a good old age.”

FIFTH PART.

18. Q. What is Therapeutica.

A. The curative part of physic: and is co-equal with methodus medendi, or indication, * which is vital, preservative curative, and palliative.

19 Q.

* Peculiar difficulties many times arise in practice from the compound nature of diseases, which create such a multitude of different symptoms and contrary indications, as to put the best physician very much to the puzzle. In this dilemma it would be well, if every practitioner, had present in his mind the following short; but comprehensive rules abridged from Dr. Boerhaaves lectures.

1. Whatever in our patient is according to nature requireth preservation; but that which is contrary demands a removal.

2. The cause curing diseases, by remedies being the remaining vis-vitæ: therefore the vital indication must be regarded before others tho' equally urgent.

3. When two unequal indications urge together; the greatest must be most regarded.

4. Nature recoyeth in those things to which she has been accustomed; but is commonly disordered and uneasy under things unusual.

5. In the greatest maladies the most powerful remedies, and without delay; but in more slight disorders the milder remedies, and with deliberation.

6. Contraries are removed, by their opposites.

7. The inventia and ledentia are safe, in what they indicate.

19. Q. What answereth the vital indication ?

A. Cordials : or that which may act as cordials ; which in case of plethora are evacuants. †

20. Q. What answereth the preservative indication ?

A. The taking away the cause of the disease.

21. Q. What answereth the curative indication ?

A. The taking away the disease itself ; which is always to be attended, by evacuating the plethoric, attenuating the vici, obtunding the acrid, opening the obstructed, relaxing the contracted, corroborating

† For evacuations give free play to the oscillations of the vessels, that were so over distended, that they had almost lost their tone, which over distension is the cause of the weakness, or faintness. Now should we in the midst of this plethora (all evacuations being neglected) give hot stimulating cordials they might rouse the circulation indeed, as it were in the last extremity. And now according to the state of the solids and fluids different effects would follow. To make the best on it, and not to speak of the different kinds of putrefaction and consequent desolation of the blood that might be the effects of the various sorts of acrimony, that may have prepossessed the blood ; but even tho' the blood was balsamic enough : yet, the most terrible lentor, must be the consequence of the blood, being so stagnated and pressed, by the vessels ; and so suddenly, and violently circulated, and heated. Now opium tho' a very good cardine in a languor of an opposite kind, viz. where inanition is the cause would in the above case, produce worse effects ; than the hot stimulants, because it greatly rarefyeth the the blood ; and to rarefy where a plethora prevaileth is absurd, and dangerous : hence neither stimulating cordials, nor opiates are either safe, or beneficial, in plethorick cases : hence also a caution necessarily ariseth viz. never to give opiates, to abate even violent pains. where a plethora does exist ; least fatal effects should follow : such I mean as apoplexy burstings of the vessels, hemorrhages, unconquerable lentors fatal ulcers &c. All which may be prevented, and the pains abated ; without opiates, by evacuation ; tho' opiates may be given safely enough and to great advantage, after the plethora is taken down.

ing the flaccid, moderating the too violent motion, and restoring the lost fluids.

22. Q. What answereth the palliative indication?

A. Mitigating the symptoms, of the disease: which always taketh away something of the disease itself.

N. B. *From hence to the end of this Catechism, are sundry more practical enquiries.*

23. Q. Now, what is health?

A. "An ability to perform well, all vital, natural, and animal functions: which is always present, where there is a free, and regular circulation; just mixture and proportion of the blood, and juices; and the due tone, and motion of all the solids."

24. Q. What is disease?

A. "Any considerable alteration in the motion, mixture, or quantity of the fluids: the too great tension, or relaxation, and consequently accelerated, or languid motion of the solids: affecting the whole body, or only some parts of it; joined with a *perceivable* disorder of the secretions, excretions, vital, and animal functions: and terminating in recovery, death, or the disordering some parts of the body, when the disease terminateth in another."

25. Q. What is a fever?

A. "An effort of nature to get rid of something morbid, in the blood, in order to establish a better health: which effort kindleth up a preternatural heat; more, or less intense; of longer or shorter duration, according to the peculiar nature of the morbid matter; and the constitution of the patient, who has it."

26. Q. What is the morbid matter in the blood actually causing a fever?

A. 'Tis either some or all these, viz. *plethora, lentor, acrimony, rarefscence*, or their various combinations; all other causes, being not always present in fevers; but pre-disposing causes thereto. *

27. Q. How are fevers divided?

A. Into three general classes viz. inflammatory dissolvant, and hectic.

What

* Thus all errors in the non naturals are but pre-disposing causes. to a fever; for a fever once produced by them or any other causes must (such is the nature of our blood) soon produce some or all the four causes above-mentioned; some or mostly all of them being present in all fevers. But the important question we have to illustrate is the morbid matters in the blood, which are the real causes of a fever; which being some, or all these, viz. *plethora lentor acrimony, rarefscence*; or their various combinations: Let us see how each of these produceth a fever separately or one another reciprocally; and what difference in fevers their various predominancy or combinations make.

1st. Then *plethora* produceth a fever by distending the arteries beyond their proper tone; which causeth a greater re-action of the arteries upon the blood, consequently a greater compression, and agitation of the blood a greater attrition, and consequent heat, and so produceth a fever; which being produced to a certain degree, is a never failing cause of *lentor*.

2d. Now *lentor* produceth a fever first, by obstructing so many of the capillaries that those, that yet remain free have to transmit so much more blood in the same time; as to cause attrition, and the consequent heat, as makes it a fever; and secondly, by inducing an *acrimony* into the blood, which it does by obstructing the circulation in one part and causing too much motion, in the other: for (such is the nature of the blood) that 'tis a free, and regular circulation, only that keeps it in a balsamic state.

3d. *Acrimony* produceth a fever by stimulating the solids to a brisker motion: causing attrition, and consequent heat, a certain degree of which (as we said above) always produceth more or less

of

28. Q. What is comprehended under each of these classes ?

A. 1st The Inflamitory class comprehends, all those fevers, that take their rise chiefly from *plethora*, and a viciddense blood, called inflamitory ; whether particular, or universal ; from a simple ephemeris, to the greatest degree of inflammation, as in a proper *causus*.

A. 2^d. The dissolvent class comprehends all those fevers, that arise chiefly, from acrimony : from the left degree of a slow, putrid fever ; through all the horrid train of putrid, malignant, and pestilential fevers, to the *plague*, which is the head of them all.

C

A:

of a lentor : and how lentor, and acrimony produceth a fever, and one another, likewise has been shewed above : now heat and acrimony are the only two things that can produce rarefence in the blood so that in the absence of heat acrimony is the only producer of of rarefence.

But 4th. Rarefence, when produced, by either cause, becomes the cause of a fever, thus viz. by rendering the fluids more elastick, and increasing their bulk, which gives a greater spring to the solids ; and so by increasing their vibrations increaseth, and procureth febrile heart.

5th. In fine, hence the great variety of differences there is in fevers, ariseth altogether from the predominancy of some of these, over one another, or their various combinations : Thus in dissolvent or putrid fevers acrimony has the predominancy, which makes rarefence very urgent, because produced both by heat, and acrimony : therefore in this case, acrimony and rarefence are the chief causes to be regarded. But in ephemeretic or inflamitory fevers *plethora*, and lentor have the ascendancy. Now there are many intermediate states wherein some one, or more of these, has more or less the ascendancy over the others : hence the great variety of fevers, however different in appearance, are yet produced and continued by the same causes.

N. B. I have dwelt the longer on this subject because of the importance of it, but yet must quit it too soon.

A. 3d. The heftical class comprehends all those habitual fevers, which tend directly to, and are always to be found in, all sorts of consumptions; whether arising from, the acrimony received into the blood, from pulmonary, or any other putrid ulcers; or from putrid acrimony any how mixed with the blood: or from a too thin, and elastic set of vessels, and too lax a state of the excretory passages. †

29. Q. How are fevers in general cured?

A. By taking chief care to preserve life, and vital strength: by mending, and expelling the acrimony: by diluting, attenuating, concocting, and expelling the viciety: and by mitigating the symptoms.*

† From these again variously compounded and mixed; being more, or less intense are to be found out, and distinguished, all manner of acute and chronical fevers.

* Febrile symptoms the most remarkable of which are the following, and to be mitigated, by some such method as this viz. coldness, and shaking, at the beginnings of fevers are to be mitigated; by nitrous acid or winy diluents drank warm; but towards the end of the fever; by nutritives and mild astringents.

Thirst in fevers; by Spt. Nitr. Dulc. and water nitrated barley water, hydromel, and all acid, saponaceous and attenuating liquors, drank often.

Anguish in fevers: the nervous being caused chiefly by acrimony, is to be relieved by vomits' purges, diureticks diluents, emollients, and anodynes; but the inflammatory, as its cause is a spissitude of the blood; by bleeding, attenuants diluents coolers, fomentations and opiates.

Loathings and vomitings in fevers: that which is caused by a putrid bileous matter, is to be relieved by a gentle vomit, or a cooling purge, by acid diluents by acid aniseer, and gently astringent stomachics

Or if by a sluggish, viciet, and stinging matter by diluting attenuating, purging, and vomiting. If by an immoderate motion of the nervous juice; by astringents, rest narcoticks, and cold water. But if a loathing, or vomiting ariseth from a slight inflammation

30. Q. How are fevers in particular distinguished, and cured?

Of the stomach, and adjacent parts, it must be helped by bleeding and antephlogisticks as in inflammatory fevers. Or if from the stomach, being convulsed, imposthumated, scirrhus, cancerous; or by the like defects in the bowels, and parts adjacent; it may be known, and cured as them diseases are, if curable at all.

Belchings and winds in fevers: those that arise from contrary salts; may be relieved, by ballancing them: those from putrifying humors by antepurescents; those from vegetable ferments, by aromatic dilution: those from nervous and hysteric spasms; by nervous and antehysteric medicines and demulcents.

Weakness in fevers: that which ariseth from lentor requireth dilution, and attenuants; that from obstructions; aperients: that from inanition restoratives; that from relaxation; astringents.

Now delirium, dozing and convulsions; their causes being either obstruction, stagnation or too violent motion; are to be relieved by bleeding in the foot applying blisters to them and to the hollow of the leg, and sometimes to the very head; opening the hemorrhoids, procuring the menses or lochia: cooling the too violent heat; or raising the too languid motion, with warm nervines such as musk, civet, ambergrise; and by applying emollient and anodyne fomentation to the head and neck.

Watchings in fevers: their causes being the same as delirium, dozing and convulsion; but slighter, the same method will likely avail; with this difference viz. that a more free use of paragogicks, and opiates may be allowed.

Heat in fevers; may be relieved by phlebotomy, vomits, coolers, diluents, attenuants, aperients and demulcents.

Sweats in the beginnings of fevers, ought always to be stopped, by all prudent means; unless the matter of the fever is exceeding moveable; but in the latter end ought always to be promoted, or allowed; unless they appear certainly to be symptomatick, and colligative.

Loosness, or diarrhoea in fevers; unless they be critical are to be cured by revulsion; vomits, purges, clisters narcotics, sheathers, and astringents.

Spots or pustles in fevers (besides the measles, and small pox) require plentiful dilution, and keeping the viscra in a just balance.

A. And they are distinguished, by their pathognomonic signs : and cured, by their various indications, well attended to, and fulfilled.

31. Q. For instance, what are the pathognomonic signs of, and indications in an ephemeris ?

A. The pathognomonic signs are the gentleness of the fever, the slightness of its causes, the goodness of the habit, in which it is, and the quickness of its crisis. And the indications are abstinence, rest, and diluting.

32. Q. What are the pathognomonic signs of, and indications in a Quinsy ?

A. The pathog. are “ pain, and inflamitory tumor of some, or more parts of the fauces.”

And the indications are to resolve by bleeding, blistering, and cooling purges ; to dilute with nitrous, acid, and saponaceous medicines ; and fomentations, for the first stage ; and for the second emollient, suppurative cataplasms, gargles, and such like.

33. Q. What are the pathog. signs of, and ind. in a pleurisy ?

A. The pathog. are an “ acute continual fever, a hard pulse, an inflamitory pain in the thorax, much increased on inspiration.”

And the ind. are to endeavour a resolution by bleeding, and cooling clysters, by plentiful dilution with nitrous, acid, and saponaceous medicines, with fomentations, for the first stage. And in the second diligently to observe the tendencies of nature ; as whether the crisis is like to be by the hæmorrhoids, or urine with a strangury, by bilious stools, or by metaptoxis, as parotids, or abscesses of any kind : or,
which

which is more common, by expectoration, and suite means to each of them.

34. Q. What are the pathog. signs of, and ind. in a peripneumony vere?

A. The pathog. are a load at brest, a short difficult breathing, a cough, with heat of breath, and an acute continual fever.

And the ind. are to endeavour a resolution &c. as in a pleurisy.

35. Q. What are the pathog. signs of, and ind. in a peripneumony notha? †

† This disease (as has been noticed by worthy authors) is very often till too late treated with neglect; either taken for or confounded with suffocative catarrh, the humoral asthma, a common cold or the quinsy, and sometimes with the angina maligna: it has many intermediate states or degrees of inflammation with it, from very little or no fever at all to the state of a peripneumony vere according as the state of the solids, and fluids is different, in them that have it: it is often accompanied with a slight acrimony, and sometimes though more seldom with the canker: it is known vulgarly in this land by the name of the rattles the bladder in the throat cholera &c. it differs. (in this land) from the same disease as described by authors in other lands, chiefly in this, that in America children are seized harder, more frequently and are harder to cure than adults; whereas with them it is the reverse: it is distinguishable enough from all others by its pathognomonic signs, and by all the signs that a spontaneous glew doth attend. The cure hereof though difficult may be effected if taken in season; but when the spontaneous glew or phlegmy lentor by stagnation, and fever is changed to an almost irresolvable mass: which happens when this disease has been too long neglected, this viciid matter thus deprived of its moisture and blown up into bubbles in the lungs by the force of the air in respiration does frequently impose on the ignorant: for as they appear so much like: so they are frequently taken for real membranous bladders. The matter come to this pass cannot but by accident admit of a cure that is, if by chance the patient should laugh them up; but a thousand to one if they do not choke him; but if this lentor remains in the blood unconcocted

A. The pathog. are a load at breast, short difficult breathing, a cough, pain of the head increasing on it, and a very gentle fever. And the ind. are to evacuate by bleeding moderately, by vomiting cautiously with Oxymel of Squills, antimonial wine; and by phlegmagougs with much prudence, and many, and large blisters; and interspersed mercurial purgatives, mercurial and antimonial alteratives, together with attenuating expectorants, as mustard whay, Lac. Amoniac. Flor. Benzoin. and such like, adding *pro re nata* some lubricating oil.

36. Q. What are the pathog. signs of, and ind. in a catarrhal peripneumony?

A. The pathog. are a load at breast, short difficult breathing, a cough, and plentiful expectoration of a thin

unconcocted the lungs once freed will soon fill again and again, till the patient is suffocated. Now if the quantity of phlegmy size in the blood is great as is often the case; and the humors very suddenly get but partly concocted; the glandular secretive vessels of the lungs much widened, relaxed and very open; the spring or tone of the vessels of the lungs almost lost: these half attenuated humors, growing more moveable do suddenly fill the glands of the lungs; over distend them and so press upon the arteriola, and the origins of the pulmonary vein as to obstruct the blood in its circulation through them and so suddenly suffocate the patient; while the blood is ponded up between the right ventricle of the heart, and the extremities of the pulmonary artery; as often happens in a peripneumony vere from an inflammatory spissitude and tumor there. The cure heretofore assigned under its pathog. nomonic. signs will (if suitably proportioned to the age, and circumstances of the several patients; regard being had to the peculiar state of the solids and fluids and the consequent degrees of inflammation in each particular case) prove successful, when applied in season, and carefully managed.

N. B. I have been more prolix on this subject: because this disease is so very liable to be fatally overlooked, disregarded, or mistaken for some other.

thin serous rheum. And the indications are lubricating demulcents, opiates and thickeners.

37. Q. What are the pathog. signs of, and ind. in an inflammation of the stomach?

A. The pathog. are an acute continual fever, a terrible anguish about the vitals, a pungent burning pain in the stomach increased upon swallowing any thing into it, and violent vomiting.

And the ind. are like a pleurisy, adding such methods as are suited to the part, and the most emollient antephlogisticks.

38. Q. What are the pathog. signs of, and ind. in a paraphrenitis?

A. The pathog. are an acute continual fever, an intolerable inflamitory pain of the part; much increased "upon breathing, coughing, sneezing, pressing the belly in going to stool, and straining to make water."

And the ind. are like other inflamitory fevers, but because of the situation of the part emollient clysters are the best fomentations.

39. Q. What are the pathog. signs of, and ind. in an hepatitis?

A. The pathog. are an obtuse pain in the right hypochondria, continual slow fever, with anguish, and the yellow jaundice.

And the ind. are as in inflamitory fevers in general: adding in the second stage saponaceous detensive medicines, with anteputrescents.

40. Q. What are the pathog. signs of, and ind. in a causus?

A. The pathog. are "continual burning heat, inextinguishable

“extinguishable thirst, a dry yellow black and
 “burnt tongue, a little cough, a hollow voice, a
 “hard and quick pulse, with dry skin, restlessness,
 “and difficult breathing.”

And the ind. are to evacuate by bleeding, and cooling clysters, to relax the contracted fibres by fomentations to dilute with cooling, nitrous, acid, and saponaceous medicines, and to sheath the acrimony with proper demulcents.

41. Q. What are the pathog. signs of, and ind. in a slow nervous fever?

A. The pathog. are “slight chills, with uncertain
 “sudden flushes of heat, and weariness all over the
 “body, lowness of spirits, a load, pain, or giddiness
 “of the head, little thirst, a weak quick unequal
 “pulse, and oppressive breathing: with an increase
 “of the symptoms towards night, and about the
 “eighth day.”

And the ind. are evacuations by gentle vomits, laxatives, and blisters; small dilution, gentle stimulants, and alexipharmix, as lapis contrayerva, castor, saffron, and salt of amber; and a nourishing supporting diet of easy digestion, given often and in small quantities, with a proper admixture of generous wine.

42. Q. What are the the pathog. signs of, and ind. in a putrid malignant fever?

A. The pathog. are alternate heats, and chills, head-ach, giddiness, vomiting, ‘eyes full, heavy,
 “yellowish; a bloated cadaverous aspect, sudden
 “loss of strength, trembling hands, and pale urine;”
 all the symptoms greater from the beginning than the slow nervous fever. And the ind. are gentle
 evacuations

evacuations by vomits, laxatives, and clysters; cordials, and alexipharmix, as camphor, and saffron, Virginian and Seneka Snake Roots, contrayerva root; and to fortify the blood with acids, the bark, and astringents with alexipharmix.

43. Q. What are the pathog. signs of, and ind. in a hectic fever?

A. The pathog. signs are "an habitual fever, with a small quick pulse; increasing after every meal or motion; exhausting the fluids and wasting the body by degrees." And the ind. are to corroborate the solids with proper exercises, as riding, and the like, and astringents *pro re nata*; and by giving a good consistence to the fluids with balsamics, and agglutinants, and food of the best nourishment.

44. Q. What are the pathog. signs of, and ind. in a pulmonary consumption?

A. The pathog. signs are (with or without uncertain shiverings) a hectic fever, a small, quick, soft, and floating pulse, drought, with an increase of heat, and flushing redness of the lips, and cheeks after meals: a load, obtuse pain, or anguish at breast with difficult breathing, night sweats, a dry, but sometimes tough phlegmy cough, and when the vomica is open an expectoration of pus, purulent foetid stringy matter, sinking in water, and when burned in the fire it smells of roast-meat. And the ind. are to mature, break, cleanse, and heal the vomica; to fence the blood against the putrifaction, and to mitigate the intervening symptoms with much care. *

* Lamentable as it is, there are so few instances of pulmonary consumptions being cured, and little prospect as there is of better success in future. The difficulty of cure is not owing to the

45. Q. What are the pathog. signs of, and ind. in an apoplexy?

A. The pathog. signs are “ a sudden loss of all the
“ internal, and five external senses, and volunta-
“ ry motions: and there remains only the pulsation
“ of the arteries mostly pretty strong, and respirati-
“ on difficult, great, with snoring, and the appearance
“ of a deep, and continual sleep.

And the ind. are revulsive evacuations, joined with stimulants, and nervines.

46. Q. What are the pathog. signs of and ind. in an epilepsy?

A. The pathog. signs are “ sudden falling down
“ with the loss of external, and internal senses, with
violent

want of the true knowledge of the disease its seat, or any circumstances about it; for there are few diseases better understood; nor is it because physicians cannot make true indications in it, for that also is as plain, and easy as in most diseases; but it is of difficult cure and dangerous consequence for such like reasons as these viz. the great importance of the lungs to life; the number and thinness of their vessels; the necessity there is of their being in alternate motion; the necessity there is of maintaining their usefulness prepare the chyle and resist the blood, for secretions, nutitions, or accretions, and from hence a very great difficulty, or impossibility of keeping the blood in a balsamic state, where their office is much injured; and also their not being accessible by topical applications, or even of the lancet, when the vomica is mature. However, by the use of ripeners, stimulating expectorants, deturgents, balsamicks, vulnerarys, anteputrescents nutritives gentle astringents, diaphoreticks and suitable exercises, duly applied, and varied according to the peculiar state of the solids and fluids; the constitution, and circumstances of each individual patient; mitigating the symptoms, pro ne nata, with various coolers, lubricants cordials and opiates some have been cured which may encourage us to press forward in the use of these and such like rational methods, as the only way to relieve in these almost desperate cases.

“ violent concussions, and reciprocal involuntary
 “ motions of some, or all the muscles, with alternate
 “ rest and new insults of them.”

And the ind. are evacuations, attenuents, stimulating revulsives, nervines, and antespasmodicks; mercurial and antimonial alteratives; but if attended with inanition restoratives, with proper alterative.

47. Q. What are the pathog. signs of, and ind. in a cholera morbus?

A. The pathog. signs are “ choler discharged violently by vomit and stool with pain inflammation, and convulsion, thirst, quick pulses, heat & faintness, and coldness of the extremities.*

And the ind. are to wash out the stomach, and bowels well, with the broth of sydenham, or such like

* This is a very violent disease. whatever be its cause either a surfeit of fruit, or acrimony agitated by the heat of the weather, or too much motion: so that the blood is dissolved and the glands of the stomach and bowels so shockingly stimulated, that the thin humors, together with the bile are evacuated so copiously, that the patient is suddenly exhausted; and the blood deprived of its moisture remains thick, acrid and almost incapable of circulation; hence paleness, coldness faintness convulsions and sudden death. Now the broth of the sydenham made by boiling a chicken in three gallons of water without salt, though a very weak is in this case a very efficacious medicine: for it washeth the acrimony from the stomach, and bowels; sheatheth and smotheth the fretted nervous membranes and fibrila; diluteth the blood; and where there is an acidity of the humors nutrolieth them; and allayeth the thirst; so that if taken while the patient is plethorick, or not too much exhausted, answereth well, even better than opiates, which if given at first to plethorick patients would not answer any good, nay might, even be very detrimental: because of their rarefying power; but if the patient be very much exhausted; this otherwise salutary medicine,

like, adding proper opiates ; but to patients much exhausted begin with opiates.

48 Q. What are the pathog. signs of, and ind. in a dysentery ?

A. The pathog. signs are (with or without a fever) gripes of the belly “ and tenesmus, with slimy, “ or bloody stools.

And the ind. are to bleed, and vomit, by way of revulsion ; to abate the inflammation, if any there be, with nitrous medicines, and antiphlogisticks, to purge the acrimony from the glands of the bowels, with rheubarb bolus with mercury, and such like : and to change the sharpness of the blood, with mercurial, or antimonial alteratives : mitigating the symptoms with panegories : sheathing the acrimony with demulcents ; especially by way of clysters : adding astringents as the case shall require, and with due caution.

49. Q. What are the pathog. signs of, and ind. in the various sorts of hydrocephali ?

A. 1st. They are distinguished according to their seat ; thus if seated under the skin the tumor is uneven, soft and without pain.

A. 2d. If between the cranium, and pericranium the tumor is even, round, hard, and painful.

A. 3. If between duramater, and cranium the futures are open, and ridges on them.

A. 4. If between the dura and piamater the opened futures are without ridges. A.

medicine, may not be trited to ; but opium seems altogether necessary. Thus we see what a surprising difference there may be in the indication in the same disease, and same patient, only for a few hours wherein he has been neglected ; as also how important and useful a seemingly trifling medicine may prove, when rightly applied.

A. 5. But if in the ventricles of the brain, the debility of sight, and dilatation of the pupil of the eyes are the diognostic.

And the ind. are external discutients, spintous, and volatile epithems, and blisters: together with internal hydragogus, mixed with corroborating aromatics; which if they do not succeed puncturing trapaning, and such like must be entred upon; but the last sort cannot be so cured, in this if internals do not cure, nothing can.

50. Q. What are the pathog. signs of, and ind. in a relaxation of the solids?

A. The pathog. signs are softness of flesh, languidness of the circulation, and cruddity of the humors. And the ind. are astringents from the most gentle, to the strongest pro re nata; accompanied with proper exercises, and short sleeps.

51. Q. What are the pathog. signs of, and ind. in an over tension of the solids?

A. The pathog. signs are hardness of the flesh, dryness of the skin, velocity of the circulation, and great heat. And the ind. are emollients, avoiding of exercise, keeping in a moist air, and taking long sleeps.

52. Q. What are the pathog. signs of, and ind. in a too much abounding acid?

A. The pathog. signs are four belchings, hunger, pain in the stomach, colicks, wind, and convulsions, slugishness of the bile, and four green stools: in the blood, paleness, itchings, pimples, obstructions, coagulations, ulcers, prickings of the brain and nerves. And the ind. are all antacid, from those slightly prepared

pared from animals to the fixed and volatile alkaline salts, stimulating aromatic astringents; and increasing the circulation, by longer and stronger exercises.

53. Q. What are the pathog. signs of, and ind. in a prevailing alkali?

A. The pathog. signs are thirst, stinking belches, foulness of throat, tongue, and palat^o, vomiting of corrupt bileous matters, or a looseness, with much choler, inflamitory nervous colic pains: in the blood burning fevers, with fetid urine, and cadaverous scents.

And the ind. are all acids, whether vegetable, fermented, or mineral, all acid or nitral salts, with saponaceous deterfive medicines, diluents, vomitory's, and catharticks.

54 Q. What are the pathog. signs of, and ind. in a spontaneous glew?

A. The pathog. are sickness at stomach, its fullness and vomiting, want of digestion, slugishness, sliminess and want of choler, an increase of phlegm, which binds and swells the belly: in the blood lentor, paleness, and obstructions, pale urine, white swelling, and slow spittle. And the ind. are diluting, attenuating, stimulating, saponaceous, evacuating medicines: accompanied with frictions, exercises and astringents.

55. Q. What are the pathog. signs of, and ind. in obstruction?

A. The pathog. are tumor, pain, heat, and debility of the functions depending from thence; an increase of the fluids, in general, or particular, according to its seat. And the ind. are aperients, relaxers,

laxers, emollients, diluents; or even astringents, according to the peculiar nature of the obstructing cause, and the seat, circumstances, and long duration of the obstruction.

56 Q. What are the pathog. signs of, and ind. in a plethora?

A. The pathog. are fulness of the vessels, languidness of the circulation, or febrile ephemeris. And the ind. are bleeding, a sparser diet, and increasing the perspiration by longer, and smarter exercises.

57. Q. What are the pathog. signs of, and ind. in a lentor of the blood?

A. The pathog. signs are coldness, shaking, succeeding fever by obstructed capillaries. And the ind. are all diluents, and attenuants.

58. Q. What are the pathog. signs of, and ind. in an acrimonious state of the fluids?

A. The pathog. are dissolutions of the blood, and colligations, by sweat, urine or saliva, and all hemorrhages by erosion. And the ind. are obtundants, sheathers, and vulneraries, diluting and expelling the same.

59. Q. What are the pathog. signs of, and ind. in rarefence of the blood?

A. The pathog. are sudden fulness, increased circulation, and febrile heat. And the ind. are gently to dilute, sheath, correct, and expel the rarifying cause. *

60. Q.

* The foregoing pathognomonick, and indicating instances, may prove sufficient; for illustration; especially considering we have many worthy authors who have largely, and particularly treated, on these and all other known diseases; in all their forms, and variety of their interchanging symptoms to go on longer in this scheme would be perhaps rather tedious than instructive.

60. Q. What are medicines ?

A. " All vegetable, animal, and mineral bodies;
 " that are so naturally, or are made so by art, as
 " that they are able to produce a change, in the ani-
 " mal œconomy ; and yet conquerable by the vis
 " vita, and all the rest are poisons."

61. Q. How are medicines divided ?

A. Into these eight following classes, viz. evacu-
 ants, attenuants, aperients, obtundants, emollients,
 corroboratives, sedatives, and restoratives. +

62. Q.

† I know no better method to class medicines, than according to the various intentions of cure for which they are needed. These eight divisions, and their subdivisions therefore may comprehend them all ; but these divisions, and their subdivisions reciprocally interfere with one another : for as evacuants are subdivided into emeticks, catharticks, eccoproticks, diureticks, diaphoreticks, sudorificks, viscatory, and emenagougs ; to which we may emphatically add phlebotomy : yet these are attenuants as well as evacuants, and all evacuants are attenuants more or less, and the reverse ; and all attenuants are aperients, and the reverse, which interferes with a third class. Now if we go on with these subdivisions through all the classes, according to our medicinal intentions, till the last and divide restoratives into nutritives, astringents, and nervines ; we shall find that even our nervines must interfere with the other classes : for sometimes our nervines must be attenuants sometimes emollients sometimes obtundants, sometimes sudorificks, viscatories, catharticks, or emeticks ; and but sometimes nutritives or astringents according to the peculiar circumstances of our patient, so affected, or our nervines will be ineffectual : and 'tis very much so of all the rest. So that when we consider the materia medica we see, that the dividing simples into classes, can never be done with propriety any otherwise than as there are but so many medicinal intentions, in the whole to be provided for ; and these must be sometimes just the reverse of what they must be at other times as we have already seen. The surest and best way therefore to attain the true knowledge of the operations of medicines,

62. Q. Which are the most important medicines in the materia medica?

A. The various preparations of mercury, chalybs, antimony, cortex, and opium.

63 Q. What are the most obvious medicinal properties of the various preparations of mercury?

A. That they are the most powerful deobstruents, and attenuents, that can be used with safety.

64. Q. What are the most obvious medicinal properties of the various preparations of the chalybs?

A. That they are astringent, attenuating, emmenagogue, and rarefying.

65. Q. What are the most obvious medicinal properties of the various preparations of antimony?

A. That they are emetick, cathartick, aperient, and rarefying.

66. Q. What are the most obvious medicinal properties of the cortex?

A. That it is the most powerful astringent febrifuge; but never attenuating, or emmenagogick, only where relaxation, and want of tone in the vessels is the chief cause of the vicidity, lentor or menstrual obstructions.

67. Q. What are the most obvious medicinal properties of opium?

A. That it is powerfully attenuating, rarefying, relaxing, sudorifick; and the most powerful soponifick, stupefactive, and narcotick, than can well be used with safety, and which indeed ought always to be used with much caution. E A DIS-

cines, is by gaining a distinct knowledge of their mechanical powers, and comparing them with the nature, state, and powers of the animal œconomy; which advantageous method, Dr. Boerhaave has carried to a great height in his book entitled the powers of medicine.



A DISCOURSE,

On the Nature and Operation of
MERCURY, AS A MEDICINE.

DESCRIBING,

- 1st. Its component parts.
- 2d. Method of its operation, &c.
- 3d. Answer to Queries.
- 4th. Useful consequences.

PART FIRST.

MERCURY is composed of exceeding dense, yet loosely connected, and extremely divisible globules; that is, each globule is composed of a number of lesser globules, and these again of a number still smaller; by which mechanism it may be divided and subdivided, and so on almost *ad infinitum*, till it is specifically lighter than the air, (tho' in its natural state it is fourteen times heavier than water,) in consequence whereof it is semi-fluid and non-pelluced; for the globules being so very dense, yet loosely connected so far impress or flatten one another as to destroy part of its fluidity and all its pellu-

pellucidity. * The truth of which may be sufficiently proved by many experiments in philosophy and chimiftry.

PART SECOND.

Wherefore any one acquainted with our animal æconomy may easily fee that mercury performs its medicinal office by its weight and consequent agility. Which that we may the better understand, let us follow it round in the circulation ; let us take mercurious

* 'Tis said by a great author that mercury is a kind of water ; but fourteen times heavier than the common : with which it hath some fimilarity in point of fluidity ; but if we take a philosophick view of the component parts of water we may then fee in what particulars they agree or differ. Water then is composed of small, smooth round incompressibly hard, and absolutely indivisible globules, and each globule is of equal magnitude and density, which last property in chief gives it its pellucidity, as the other five give its fluidity. For if the globules were some greater, some less, they could not lie so directly over one another, as to maintain their rectilinal vacuities, which if not maintained the rays of light could not penetrate so regularly as to render it Pellucid. Wherefore mercury differs from water in these five particulars viz. in weight, compressibleness, pellucidity, magnitude, and divisibility of its globules ; but agreeeth with it only partially in that one of the fluidity. Now should any one object that mercury cannot be considered as a semi-fluid because it has as great a propensity to run as water which is by our definition a perfect fluid let such objecter consider that were it not for the loose connection of the mercurial globules, whereby they somewhat compress or flatten one another. mercury would be the most fluid of all bodies. because the heaviest of all fluids. And also when the globules of any fluids are compressible by their own weight, yet retain so much of their globular figure as to render them fluid, in some fort, they may with as much propriety be termed semifluids, as those that are partly weged up with angular & heterogenous particles.

rious dulcis then, for some preparation is necessary for its entrance into blood; because 'tis very slow and difficultly that it entereth the blood, while in its crude state and uncominuted; the density and fluidity thereof so increasing the peristallick motion of the bowels, that it hurryeth by the mouths of the lacteal and absorbing vessels before it can be sufficiently cominuted to enter them. As the globules in mercurius dulcis are divided by the salts and by levigations, or if we triturate mercury with the gums till the globules are sufficiently cominuted; either preparation * being received into the stomach, mixed with

* Preparations of mercury differ more as to their operation in the prima via than in the blood; for though the preparation be made with salts oils, or gums when they are introduced into the blood, they are soon robbed to a great degree by their mixture with the aqueous and serious parts of the blood; and at length almost or intirely are freed from them, so that if we should consider its operation in the blood there would be comparatively but very little difference or matter which preparation we use; but in the prima-via the difference would be very great: for corrosive sublimate being charged with the spicula of the acid salts makes a very wounding stimulous, on the inner coats of the stomach bowels, and chyliiferous ducts, occasioning a mortification with convulsions, and death; while the very same preparation dissolved in a sufficient quantity of brandy or gineva may be taken into the body and introduced into the blood with safety,; because the acid salts are dissolved, and neutro lised by the spirits. And the very same preparation resublimed with fresh mercury, levigated washed &c, is by these means, so robbed of the saline spicula and the remainder so blunted, that although it may stimulate so as to prove emetic in a considerable dose yet is so mild as to occasion no delterious effects in the prima-via. While preparations of mercury made by trituration with the gums are far more mild, yet these are some milder than others; but the operation in the general course of the circulation is nearly the same in all. The most remarkable differ-

with the humors, &c. is by the action of the stomach and bowels carried along the intestinal tube, where it is mostly taken up by the lacteal, obsobering vessels, and carried along the chyloferous ducts into the general course of the circulation, &c. so that mercury pervadeth all the arterial and veinal circulation; but not equally; for being near thirteen times heavier than the blood, by the laws of circulation, will keep the middle of the artery, forcing the blood and humors (which are so much lighter) to the out sides of the vessels, and will frequent those arteries most where the velocity is greatest, and the course the straitest. By which mechanism, when by the contraction of the left ventricle of the heart, the mercury and blood are sent into the great artery; the mercury passeth by the coronary arteries keeping the middle course, but not being easily turned aside collideth against the inward coat thereof as it turneth down. And because the subclavian and carotid arteries arise from the upper side of this crook, more of the mercury will be forced into them, than in all the rest

ance is that some of the gums have as it were a greater affinity with mercury than others as probably some of the salts have too. Now the gums too have a greater tendency some to one part of the body, some to another by a kind of hygrolick law hitherto inexplicable. Hence mercury triturated with the gum arabic doth not so soon or easily salivate as with others. Now gum arabic having a greater affinity with mercury will stay longer with it in the circulation than others (though much more viscid than it) and being of a sheathing, smothering, and diueretick nature naturally inviteth the mercury to be secerned by the reinal glands; hence is more efficacious in the lues venera, stone in the kidnies, &c. than other preparations. Query is not this equal to if not the very same mighty secret some have bragged of that they could cure the most obstinate lues without a salivation?

rest of the arteries of the body : hence the most sensible effects of its operation in the glands of the fauces. For, in order to conceive of a compleat salivation, 'tis not necessary to believe, that the mercury *per se* does really pervade the glands of the fauces, which seem by their structure naturally to exclude it ; being inserted laterally, that thereby they may draw off the more viscid, which is the lighter parts of the blood ; mercury being much heavier than the most dense parts of the blood which are excluded by the lateral structure of the glands it should seem that mercury must be excluded too. Moreover 'tis easy to shew, and demonstrate how a salivation may be caused without it, for a globule of mercury may be two times less, yet six times heavier than a globule of blood, by which weight the momentum it receives from the heart and arteries is six times greater than that of the blood globule, and consequently a proportionable degree of velocity, &c. Hence it overtaketh it as a bullet does the feathered kind, and though flying from it tareth it to pieces ; and if it strikes it on one side takes off a piece, turning it aside causing a whirling motion. Besides so much more motion being occasioned by the additional density in the circulation, the blood is hereby greatly attenuated, whence a large store of those particles that are fit to be discerned by the glands of the fauces, are drove by the density of the mercurial globules into these glands, whence a compleat ptyalism, &c. yet no mercury discharged by the glands. Furthermore, what we have said of the glands of the fauces, may with as much reason be said of all the other glands fitted for a viscid secretion,

secretion, and with some reason be applied to all the glands of the body, their structure being designed by nature to separate the lighter parts of the blood; wherefore 'tis a fact, that while mercury remains in the circulation *heavier* than the most dense parts of the blood, it cannot enter any of the glands, for reasons already given, and for which many more might be adduced. &c.

Q U E R Y F I R S T.

If mercury performs its medicinal office by its weight and consequent agility, and being much heavier than the most dense parts of the blood, is excluded from the glands by their lateral structure, keeping the middle course: why does it not ever keep on from the small arteriola to the origin of the veins; thence to the vena-cava and heart, and so round in the circulation, causing while life remains, a continual dissolution of the blood, a wearing of the solids, and the sure destruction of the animal? which is contrary to fact, because mercury is evacuated through the intestinal glands by the help of catharticks, and the cutaneous by diaphoreticks as experience abundantly evidenceth.

A N S W E R.

True indeed this always will be the case, that so long as mercury remains in the circulation heavier than the most dense parts of the blood, it never will enter nor be evacuated by any of the glands; but being
cominuted

cominuted by the actions of the heart and arteries, it may become specifically lighter than the rarest parts of the blood, and so by the laws of circulation naturally be evacuated by many of the glands; but without this cominution there is no conceivable way to evacuate mercury from the blood, with the least degree of safety to the animal. But that we may more clearly understand this matter, let us consider what it is that cominutes mercury, viz. heat attrition, and intervening bodies, such as salts, oils, or the gums; like to most of which may be found in the animal circulation; for what are the actions of the heart and arteries, but attritions? And what are the intervening blood and serum, but viscid bodies like gums? And what are the salts of the blood, that they may not serve to keep the cominuted mercurial globules apart? And are there not oils there? Wherefore all the necessaries to cominute mercury are present in the animal, when the circulation is lively; for the stronger and swifter the circulation is, the greater the attrition, the consequent heat, all the cominutive powers, and the reverse. Hence it comes to pass, that if the *vis-vita* is not sufficient without a *stimulus* to raise attrition enough to cominute the mercury, the addition of stimulating, cathartick, alexipharmick, or diaphoretick medicines are necessary, and sometimes need often repeating, and the physician has enough to do to clear it from the blood, even in a long time after; there not being *vis-vita* sufficient to cominute it for its discharge, though assisted by all proper stimulants. The salts of the blood being greatly decayed in such languid circulations. Hence

'tis

'tis easy to see how catharticks take the mercury out of the blood, by the intestinal glands; for they cominute the mercury by the salts they sling into the blood, but chiefly by increasing the circulation, attrition, and heat, by their stimulating and acrid parts, which they do most in the glands of the bowels, and by that means draw them there, and being sufficiently cominuted, they pass off with the other humors, &c.

Q U E R Y S E C O N D.

If mercury may be thus cominuted in the blood by the very actions of the vessels, and if it performs its operation chiefly in the glands of the fauces, taking up the subclavian and caroted arteries, as in fact it must, when ever it causeth a salivation, &c. what defendeth the tender structure of the brain from its virulence, which would bring sure and sudden destruction to the animal, at once destroying the basis and foundation thereof?

A N S W E R F I R S T.

The structure of the parts not simply that it is glandular, but also because upon the entrance of the caroted and paroted arteries, into the cranium; they lay aside their muscular coat, and form frequent inosculations and expansions with one another, both which serve greatly to retard the motion of the blood: in the first, because thereby they lose much of their oscillating powers; and in the second, the force of
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the heart; wherefore there is less attrition there, and consequently less heat, and less cominution of the mercury there. Besides the cortical, and more so the medullary parts of the brain seern from the blood so much the finest, and consequently the lightest parts of the blood, that the mercury, in order to enter here, by the laws of circulation, must be more cominuted than any where else; but for reasons already given, in fact it is less.

A N S W E R S E C O N D.

Besides the more the mercury is cominuted by the actions of the vessels in general, the less it will circulate upwards, or towards the brain, for by its cominution growing lighter, it will, by the laws of hygrostaticks, circulate nearer to the outsides of the vessels, and so more enter the glands before it reaches the vessels of the cranium: That is, less will enter the carotid and parotid arteries, and more enter the lower vessels of the body; wherefore the cominution of the mercury lessens the salivation, and prepareth it for its discharge from the blood. * From all

* As mercury pervades the glands most when it is most cominuted, being readily drove through them and evacuated; but not at all when the salivation is highest: so when we give mercury to remove obstinate glandular obstructions: the best method is to exhibit often, and often take it off, and that as much as possible through those very glands that are obstructed that is chiefly by catharticks if the glands in the prima-via are in fort; but by alexipharmicks and diaphoreticks if the obstructions are in the cutaneous glands. The reasons are obvious: for if the obstructions to be removed be in the cutaneous glands, and we should neglect the common

all which it plainly appeareth, that although mercury may be by the actions of the vessels, in the circulation, so cominuted as to be evacuated by the glands in general, yet the tender vessels of the brain are by their situation and structure naturally defended from its virulence.

CONSEQUENCE FIRST.

From what has been said, it is easy to see what would be the event of giving mercury in acute fevers; for by its weight and agility it would suddenly and violently augment the circulation, already too intense, and consequently greatly increase the heat, already too great, and endanger from that very cause the coagulation of the serum of the blood, and the sudden driving all the moisture out of the blood, and of so rarefying the blood as to *burst* through the vessels; for the mercury in this case would be suddenly and wonderfully cominuted, † so as suddenly and violently to

common method of using the decoction of the woods, and a diaphoretic course, and think to remove them by one long and ridged salivation and at last take it off by the glands of the bowels only by catharticks; little or no benefit could be obtained by the long ptyolium only just washing these glands out by the over attenuation of the humors: whereas if the above mentioned method be attended to, we may many times have the advantage of driving the mercury it self often through the very glands that are obstructed, and so clear them out very effectually and with less harm to the constitution than a long salivation. With how much confidence may we practice while we see the reasons of it very clearly?

† The reason is great heat and agitation, which always accompanieth very acute fevers will very soon cominute mercury and being cominuted, the hydraulick laws will bring it to the glands.

to pervade the glands, if permiable, if not, would violently impact the thickned and almost dried up humors into them; bringing, instead of a crisis, a great and sudden dissolution and putrefaction of the humours; a wearing of the solids, * and a sudden discharge of the mercury out of the body.

Consequence

glands, and the violence of the circulation, so mightily increased by the density of the mercury make it strike hard. For the mercury though ever so much cominuted is yet as much heavier than the other humors as it was in its crude state, in proportion to the bigness of its globules that is to say a mercurial globule which in its crude state is near thirteen times heavier than a globule of blood of the same bigness, divide each of these six times, and still the mercurial globule will be near thirteen times heavier than the blood globules thus divided: the reason therefore that the mercurial globules can become specifically lighter than the rarest parts of the blood, is because they may really become so much more cominuted than the blood and humors as to render them so: for all dense bodies become specifically lighter in proportion as they are divided and the reverse. But were it not for this wonderfully divisible property in mercury whereby it can be fecerned by the glands, mercury once introduced into the blood, must of necessity prove a slow but certain poison; always wearing, heating dissolving, ruining the animal œconomy, till death. See the discourse on the component parts of mercury at page 34th and 35th. See also the first query and answer to the same at page 39th and 40th.

* Notwithstanding in slow fevers mercury would have a much more mild and salutary operation that is, mercury would have a more or less violent operation as the fever is more or less intense; as a bullet will go quicker and smarter in proportion to the strength and violence of the explosion by which it is protruded from the gun and the reverse. Besides the greatness of the heat in very acute fevers has a great cominutive power on the mercury; but a hardning and inspissiating power on the serous parts of the blood, yet it is the strength and violence of the circulation that driveth the highly cominuted mercury so suddenly and violently in to the glands and the more so as the heat is more intense, and the reverse. Notwithstanding in low fevers under certain circumstances

CONSEQUENCE SECOND.

Nor will it be difficult to know, what would be the consequence of giving mercury at the end of the shock of a fever, before the solids and fluids are, in any considerable measure, restored : for besides their vessels being too much worn to bear more wearing, and their fluids too much exhausted and attenuated ; 'tis a wonder if the mercury can be cominuted, so as to be discharged out of the blood till it brings on some fatal effect. For 'tis manifest from what has been said, that it cannot be cominuted without considerable action of the vessels and the consequent heat, and that it cannot, without this continuation, be evacuated from the body by human art ; which such languid and thin vessels, and such impoverished blood are very unable to perform. Hence 'tis manifest that the mercury in this case, if no fatal effect should follow, would with the utmost difficulty, or never, be got out of the blood.

CONSEQUENCE THIRD.

Like to this last very much is the case of those, who from natural make have slender vessels, and consequently thin and soft fluids.

Consequence

ces mercury may be given with safety, and to great advantage, but with due caution, and having a watchful eye over the fever that it be not too intense nor likely soon to become so : but more especially benefit may be had from mercury in those low fevers whose cause is a viscosity or viscosity, accompanied with acrimony, that occupieth the glands, such as peripneumony notha, angina maligna, and the like.

CONSEQUENCE FOURTH.

Hence also we may learn the danger of giving mercury to hectic patients, whose solids are already too thin and elastick, and their blood too loose, fluxile and open.

THE CONCLUSION.

Hence likewise any one acquainted with our animal œconomy, may plainly see, that what has been said on this subject is no chimera, nor fruit of a wild imagination, but actually the truth, and what may be depended on, and that the various effects of the mercury, as to good and bad ones, is owing to the different state of the solids and fluids in them that take it. That there is no uncertainty as to its operation, where the circumstances of our patients are well known, that those of robust vessels may take mercury with safety, though their fluids are vitiated, that there is danger where the vessels are thin, though the fluids are considerable rich; that mercury is in fact, the most powerful deobstruent and attenuant that can be used with safety, and in this view the most noble medicine, if prudently and skilfully administered. Hence also answers may readily be given to the following very important questions: as why 'tis so much more difficult to free some patients blood from mercury, than others? Why in some 'tis best done with catharticks? Others with alexipharmicks? why some must have all ways tried, and are freed with the utmost difficulty? Why others need no method

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at all? Why some are soon hurt by the operation of it? Others bare it not at all? And yet others bare it, unhurt through a long course? With many more queries of the like nature.

Practical RULES and OBSERVATIONS.

1. **O**PIATES are dangerous where the nerves are weak, or a plethora does exist.

2. Opiates are aperient in all cases where there is not too much blood, or too great a relaxation; but many times stop all natural evacuations, if given in a plethora, or relaxation.

3. Astringents become attenuents only by giving a proper tone to the over relaxed vessels, and thereby increasing their oscillations, or vibratory motions; which if done by hot stimulating attenuents would, it may be, too much exhaust the patient, by too copious a perspiration.

4. 'Tis disadvantageous to give astringents plentifully, soon after great evacuations; because the vessels now contracted down beyond their proper tone, and braced in that state, will, it may be, never again gain their proper magnitude.

5. Astringents answer better to mend a relaxation of the solids, than a broken crisis of the blood; but where both happen together, they are more especially beneficial.

6. The cortex should never be given, where obstructions, and a viscid blood exist, except in cases of great relaxation.

7. Curicuma boiled in vinegar stops all hæmorrhages,

ges, that are occasioned by rarefaction simply; but it must be stipticks indeed, to stop them that arise from relaxation, and acrimony, or solutions of continuity.

8. All very intensely hot fevers ought always to be soon abated either by evacuations, cooling medicines, or both, as the case demands; but very low fevers, often stand in absolute need of hot stimulating cordials, and alexipharmicks.

9. All fevers that arise simply from a too quick circulatory motion, such as an ephemeris, by too much labor, or a worm fever, become dangerous only by their excess of heat, which having no obstructions to hinder the circulation in any part; have therefore a heat universally diffused, till by their excess of heat a lentor, and obstructions take place.

10. In the beginning of all dissolvant fevers there are great signs of a plethora; but as they arise chiefly from acrimony, and the consequent rarefaction, small bleedings only may be admitted with any kind of safety; and yet these small bleedings may be of as great necessity as large ones are in a true plethora.

11. All erisipateous fevers want more coolers than stimulating, or warm cordials; the acrimony flung out on the surface of the body being an evidence, that the visvita is at present sufficiently strong.

12. All fevers arising from contagion excite a set of symptoms, exactly agreeable to the state of the solids, and fluids, and alter no faster than it can alter the state of the blood; hence the great variety of fevers, in appearance the same at the beginning are mimicked by the small pox, and other contagious, and eruptive fevers, at their beginnings.

13. All nervous disorders, that are fundamental, ought always to be taken special care of; because the nerves are the foundation of the animal; but hesterical disorders, though truly nervous, having a seat distinct from the head of the nerves, are of less consequence, and prove a very moveable state of the nerves, in the hesterical patient.

14. Worms kill mostly in one of these three ways viz. either first by exciting so much heat, by stimulating the nervous parts, as to coagulate the serum of the blood; secondly by wounding, piercing, and boring the stomach, and bowels, and inducing a mortification, or thirdly by religating, or knotting, and so stopping some important passages.

THE END.

ERRATA.

Page 9, line 23, immediately after the second; add (as the stomach and bowels,) p. 11. l. 2. de's from the (; to;) p. 12. l. 22, add (that) to the beginning of the answer; p. 13, l. ult. in the margin, instead of inventia r. (juventia) p. 14 l. 9, instead of attended r. (attempted,) ibid l. 9, marg. instead of desolation r. (dissolution,) ibid l. 15, instead of cardiner r. (cardiac); p. 17, l. 11, for left r. (left); p. 19, l. 33 marg. for colligative r. (colliquative); p. 21, l. 2 from the bottom, for laugh read (cough); p. 22, l. 4, for get read (yet); p. 26, l. 9 marg. after usefulness add (to) p. 27, l. 11, for inflammation r. (inflation) p. 29, l. 15, for panegories r. (paregoricks) p. 29, l. 4, for spintous (spiritous) ibid. l. ult. to antacid add (s); p. 30 l. 13. for ni (nutral); p. 31, l. 19 for colligations r. (colliquations.)

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