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Contributors

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PHYSIOLOGICAL REFLECTIONS

ON

THE DESTRUCTIVE OPERATION

OF

SPIRITOUS AND FERMENTED

LIQUORS

ON

THE ANIMAL SYSTEM.

By THOMAS FORSTER, F.L.S.

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PHYSIOLOGICAL REFLECTIONS, &c.

I BELIEVE there are few medical facts more generally acknowledged, than that drunkenness and gluttony are destructive of health. The frequent occurrence of apoplexy after intoxication, as well as the state either of insensibility and stupor, or of violent and preternatural excitement during its continuance, must have impressed almost every body with a general sentiment of the danger of such excesses. But the evil consequences of habitual indulgence in spiritous and fermented liquors when taken in more moderate quantities, do not appear to have made an adequate impression on the minds of people in general. The destructive operation of wine and spirits when taken in a degree not sufficient to produce inebriety, are slower, and their evil effects less obvious to the superficial observer, than when drunk to excess.

This is probably the reason why so few people are aware of the danger of such practices. The number of evil habits which, in artificial society, act to our detriment, such as sedentary occupations and slothful habits of life, confinement in the impure air of cities, irregularities of diet, peculiarities of atmosphere, and the reciprocal influence of the mind and body on each other, must necessarily render the manner and extent of the influence of any one in particular less obvious. There are also a number of circumstances, such as peculiarities of temperament, or accidental injury to particular parts of the body, whereby they become weak and very susceptible of irritation, which modify and give a sort of character to diseases, and thereby mislead the patient as to the true nature of their origin. Nothing is more common than for people to mistake some trivial circumstances, which may have either modified a disease or determined the precise period of its appearance, for its cause; which must, in reality, be sought for in a morbid state of the constitution. Besides this, people have commonly a great unwillingness to admit any

thing to be productive of future evil from which they imagine they derive a temporary benefit.

It is by such reflections as these alone that I am enabled to account for the apparent insensibility of the public to the gigantic evils, both moral and physical, which are produced by the prevalent habit of drinking spiritous and fermented liquors; and which it will be my endeavour to represent in as conspicuous a manner as I am able.

I think there is no better way of showing how extensive are the evil consequences of drinking spiritous and fermented liquors, than by adverting to the following fact, which is of considerable importance in medicine, and which never ought to be forgotten by those who study pathology with a view to the cure of diseases; namely, that an unhealthy state of constitution, characterized by circumstances which indicate a disordered condition of the digestive organs, combined with a weak and irritable state of the nervous system, appears to exist antecedent to the occurrence of any determinate disease, whether general or local. This is not

merely a suppositious assertion ; it is a fact impressed on my mind by accurate attention to the history of many diseases. And I may add furthermore, that I feel warranted by the opinion of several sagacious physiologists, as well as by the perusal of the history of numerous and dissimilar cases, in considering such a combination of nervous and digestive disorders, when once established, as capable of exciting every disease to which there may be a previous tendency in the system*.

Spiritous and fermented drinks afford a stimulus which is exhausting to the strength of the constitution, and which must therefore eventually terminate in weakness and irritation of the digestive viscera, and an imperfect performance of their functions. Such a

* For information relative to the constitutional origin of local diseases, I refer the reader to the First Part of the Surgical Works of Mr. Abernethy. With these works the most eminent of the profession are probably well acquainted. If the publication of this, or any other of my papers, shall in any degree tend to give additional publicity to works of such importance to the improvement of Surgery, I shall consider myself as having contributed towards the general good of mankind.

state of visceral disorder will affect the brain, the nervous actions will become perverted and irregular; and, by this means, such a compound of weakness and irritation will be produced as I have spoken of above. Spiritous and fermented liquors may therefore be considered as having the most direct tendency to produce and aggravate a disordered state of the constitution, which becomes the exciting cause of other diseases.

An attentive inquiry into the history of different complaints where satisfactory evidence can be obtained, will generally afford ample proof of what has been asserted above. To encourage and direct such an inquiry by persons who are capable of accurate investigation, is the principal object which I have in view in intruding these observations on the public.

It may not be improper to remark here, that besides constitutional predispositions to different forms of disease, arising from peculiarities of temperament, or the comparative weakness of different parts of the body, there appear to be many varieties in the disorder of the digestive organs, which

probably have their particular sympathies, and which may occur even in the same subjects, at different times: but as many of these varieties are not demonstrable to the senses, and as they are all marked by circumstances not very dissimilar, it is not worth while to dwell on them here. I shall only briefly mention a few of them in the course of this paper, which are the most evident, and which have been the best and most generally known. The various causes by which the disorder has been first induced, the length of its duration, or the kind of constitution and habits of the patient, contribute, no doubt, to produce these varieties in the visceral disorder, as well as of its secondary effects on other organs. Spiritous and fermented drinks not only originally cause great and peculiar visceral disorders, but aggravate every variety of them which may have been previously induced by other causes.

This will perhaps appear more striking to the general reader, if I briefly allude to the principal circumstances which characterize several different diseases. In the most simple and common kind of headache a

temporary, and perhaps trivial, state of disorder of the digestive organs is to be inferred from its being accompanied often with nausea and sickness and a furred tongue, and from its cessation after the operation of a cathartic. The immediate effect of wine and spirits is frequently that of producing such stomachic and intestinal irritation as appears to be the exciting cause of such headaches. I mention this first, as affording the most familiar and unequivocal example of sympathy. As a more remote, but equally certain and generally acknowledged consequence of vinous and spiritous stimulation, I may instance irritation and subsequent disorganization of the liver, accompanied by a suspension or depravation of the biliary functions; a state of disorder particularly interesting, from its well known connexion with an irrational and dejected state of the mind, which has therefore been called hypochondriasis and melancholia. The remarkable dependence of sensorial and mental disturbance on a disordered state of the abdominal viscera, appears to have been well known by the earliest writers on medicine, in the infancy of science. It

is a doctrine frequently alluded to by the poets of old; and its origin seems lost in the night of history. Modern physiologists have developed the counterpart of this important branch of the ancient pathology, and have pointed out the immediate sympathy of the viscera with diseases and injuries of the head, and with anxiety and agitation of the mind. This is, perhaps, the proper place to introduce to the reader's notice a habit which is often productive of the most calamitous consequences, as it tends to illustrate what has been said above. A person suffering from a temporary loss or disappointment, has recourse to the use of wine or spirits, the stimulus of which affords a momentary relief from mental sufferings. A disordered state of the digestive organs is, however, invariably the consequence of such practices, which, reacting on the sensorium, increases the mental disorder, and gives it a peculiar character. The patient, now, is not only distressed about the original subject of grief, but takes atrabiliary views of every surrounding object. The constant habit of drinking, by weakening the digestive powers, predisposes the viscera to dis-

order; and by this means renders them more liable to be affected by the mind, and to react on it to the aggravation of the original disturbance. Thus spiritous and fermented liquors can convert common grief, which in health would soon subside, into a compound of mental and bodily derangement, which, by its very nature, must be aggravated in its progress, which may produce organic disease, may thereby become uncontrollable by medicine, and may eventually terminate in madness. I am aware that such cases sometimes happen where no spirits or wine have been drunk. A reverse of fortune, or any trivial disappointment, has been known to derange the minds of persons comparatively temperate, and who could not be suspected of excess: but even in these cases, disorder of the digestive viscera, from whatever cause or combination of causes induced, seems to be a principal feature in the malady. To the reaction of the body on the mind we must always, I think, attribute effects so obviously incommensurate to their apparent causes.

The drinking of spiritous and fermented liquors, besides exciting general disorder of

the digestive organs, appears, when indulged in to any degree, to occasion a peculiar diseased state of the liver. This has been called, almost proverbially, the drinker's liver. Dissections have demonstrated the frequency of this diseased appearance, in those who have habitually drank freely of spiritous liquors. I recollect, however, the case of a rum drinker, in whom the liver was found nearly healthy. Great and distressing disorder of function, however, may exist for a long time, and become the exciting cause of other fatal diseases, without producing morbid alterations of structure in the viscera, demonstrable by dissection. In the case above alluded to the small intestines were excessively agglutinated, and exhibited every mark of enteritis.

Such peculiar disease of the liver has often been discovered in those who have died of apoplexy; and indeed the hepatic functions have very generally been found to be much disordered in that disease, as well as in all the train of what are called nervous and comatose complaints. The speedy relief often experienced in these diseases by the administration of small

doses of mercury, corroborate the notion that the liver was particularly concerned in their production.

Recent discoveries have shown how very generally the liver is disordered in phrenitis. Collateral evidence to this fact may be drawn from observing how often spirit drinkers incur that most tremendous malady. There are many persons, too, who have such excessive excitability, that a very small quantity of spirits creates in them a temporary but dangerous state of mental derangement. In more confirmed cases of insanity the viscera are said usually to be much disordered. Sometimes such organic diseases of the brain are found, on examination after death, as visceral disorder would lead to. As an additional proof of the connexion of madness with disorders of the chylipoietic viscera, I may remind the reader, that obstinate irregularities in the functions of the bowels have been observed to precede the death of maniacs*. In cases of lunacy we must make allowance for the cooperation of adjunct causes. If, as appears then, a

* Van Swieten relates a curious case of some maniacs cured by a diet of fruits.

disordered state of the digestive functions, induced by spiritous liquors, be capable of exciting the sensorium in such a manner as to produce hypochondriacism and melancholy, and to exasperate a predisposition to more determinate madness: if, too, other and various forms of neurosis depend on such a state of disorder; I think it may be rationally expected that a slighter degree of such disorder exists generally in persons who are the sport of inordinate enthusiasm and superstition, and who become the dupes of impious pretenders to divine inspiration.

It will readily be perceived, that a state of disorder, which, under aggravated circumstances, can produce such a degree of mental perversion, must have a general tendency to weaken and distort the intellect, and to induce an irritable or desponding disposition of the mind, which, aided by the cooperation of external causes, has ever become a fertile source of social and civil discord.

An inquiry into the mutual dependence of physical and moral evil on each other, constitutes a subject too extensive to be discussed in this paper, and one for which I am ill calcu-

lated. Any person capable of such an investigation, who would prosecute this inquiry, would render great service to the world.

All the comatose diseases, which have been designated by the various and indefinite names of lethargus, cataphora, and carus, appear to owe their existence to preternatural excitement of the brain, originating in disorder of the abdominal viscera. The circumstance, that most patients subject to these complaints have previously lived freely, and drank strong liquors, would lead to such a supposition, were it not confirmed by dissections after death. Sometimes nephritic diseases have been found to accompany lethargy; but these must be considered rather as concomitant symptoms, than exciting causes, of the phrenic malady. Disorders of the urinary organs are generally allowed to depend on those of the organs of digestion. In short, when a disorder of the viscera has existed long enough to occasion any material disturbance of the brain, so much diseased structure is frequently found in different parts of the body, as would puzzle the dissector to enumerate,

and often seems to give erroneous notions of the causes of death.

In persons subject to epilepsy, spiritous liquors drank just before the occurrence of the fit have caused it to end in violent convulsions of the muscles. This I have witnessed more than once. Repletion, particularly of stimulating food, has appeared to have the same effect.

In disorders more determinately of the cataleptic kind, disorder of the chylopoietic organs is discoverable. I recollect lately reading of several cases of catalepsy, in which such kind of diseases of those organs was found, as one would naturally suppose might be speedily produced by spiritous drinks: one, in particular, in which the liver was of immense size. The circumstances of diet and habits of the patient were omitted to be mentioned. It is much to be wished, that in the publication of cases a more strict attention were generally paid to the history of diseases, wherever information relative to that subject could be obtained.

Spasms, and convulsions of every kind,

seem much connected with the state of the stomach. These affections happen often in consequence of accidental injuries ; but as the same accidents do not produce the same effects on different people, the particular state of the constitution may be fairly considered as the cause of them. Spiritous and fermented liquors may disorder the constitution, and thus render the effects of injuries peculiar. It is partly from this cause that many surgical operations of a trivial kind often terminate fatally. Mr. Abernethy has proposed it as a question, What is the state of the digestive organs between the infliction of an injury and the occurrence of tetanus ? I should like to know whether tetanus ever occurred in persons who had always fed on unirritating diet, and who had not previously had disorder of the digestive functions ? The successful treatment of tetanus by the exhibitions of such medicines as have a known tendency to rectify disorders of the digestive viscera, has been illustrated by Doctor James Hamilton of Edinburgh ; who has likewise shown, that a similar plan of treatment is beneficially applicable to chorea, chlorosis, marasmus, typhus, scarla-

tina, and other dissimilar complaints. Doctor James Curry seems to consider that this gentleman is unaware of the true principle upon which his success so much depended*. The developement of Doctor Curry's opinions, whenever his expected work shall be given to the public, will have a tendency to show how much a disordered state of the digestive organs in general, and consequently of the whole system, depend on disorder of that particular viscus, the morbid structure of which seems so remarkably calculated to exhibit the evil effects of spiritous and fermented potations.

As a proof of the rapid power of spirits to occasion a disorder of the viscera, which may soon terminate in death, I may advert to a case mentioned by Doctor Cheyne in his book on Apoplexy and Lethargy, in which a child appears to have been destroyed by an occasional draught of whiskey, a beverage to which it had not been accustomed. On dissection, the liver was found of a bright vermilion colour. On children, and those who have not been used

* Examination of Prejudices against Mercury, &c. 2d Edit. p. 12.

to much stimulus, spiritous and fermented drinks will certainly act with increased violence. There are innumerable other instances of almost immediate death being occasioned by spiritous ingurgitations under such circumstances.

Spiritous and fermented liquors, by causing general weakness and irritation, seem to render people more susceptible of atmospheric influence, and to predispose them to be affected by epidemic disorders. The degree and kind of influence which peculiarities of weather exercise on the body, has never, I think, been ascertained; nor, I believe, much inquired into in England. But whatever the power of the air to cause disorder may be, I think we are fully warranted in considering those persons the least liable to incur atmospheric complaints whose habits of temperance, and the abstinence from spiritous liquors, have ensured to them a strong and tranquil state of constitution*. I should wish to ascertain, if it

* I question whether strong drinks ever really give even a temporary strength to those who have not accustomed themselves too much to them. I remember in the north eastern part of Essex, during a very hot harvest, many labourers left off drinking strong beer and ale, from a belief founded on experience, that

were possible, on the authority of physicians of extensive practice and observation, what had been the previous habits of persons who had suffered most during the prevalence of epidemics in general.

I am not prepared to say how far temperance and abstinence from fermented and spiritous liquors may guard the animal system against the effects of specific stimuli in general, by mitigating or modifying the peculiar actions consequent to them; but it is pretty certain that the same effects are not uniformly produced by the same stimulus. Syphilis, as well as the violent medicine employed to cure it, appear to occasion much disorder of the chylopoietic organs: the nervous system too is greatly affected by the mercury. The strength and tranquillity which would be produced by an habitual diet of unstimulating and nutritive food, seems best calculated to resist the effects of such constitutional disturbance, and to prevent the recurrence of secondary symptoms. A mild and rather low diet has been ordered previous to the artificial introduction of stimulants. I have seen persons who they could do more laborious and continued work when drinking only milk and the weak cider of the country, and eating chiefly vegetable food.

duction of variola, with a view to mitigate the effects of that poison. I have known persons remarkable for a total abstinence from any drinks but tea and water, and who have always eaten plentifully of fruits, that have never been the subjects of this disease. It is rational to think, that a plan of treatment so beneficial as it has appeared to be in scarlitina, and which is pursued for all the multiform varieties of cutaneous eruptions, namely, the administration of those medicines which are known to excite a healthy action of the stomach and intestines, would be also efficacious in lessening the violence and accelerating the cure of smallpox and measles ; and that an un-irritating regimen might in many cases prevent their occurrence at all. These facts can only be ascertained by accurate attention to the previous state of health and habits of those who are, and of those who are not, infected by contagious diseases prevalent in the neighbourhood. The subject of specific stimulus seems buried in an impenetrable obscurity*.

* Whether spiritous and fermented liquors prove uniformly injurious in proportion to the quantity of

Besides being the immediate exciting cause of disorder, habitual drinking of wine and spirits has been justly said to produce or modify what is termed a constitutional diathesis, which may be transcendant: and thus we account for the tendency to particular diseases which trivial causes may subsequently excite; and for the occasional occurrence, in persons whose mode of life is comparatively innocent, of diseases which generally belong to dram drinkers.

alcohol which they severally contain, or whether the different kinds of them cause different specific actions, is a point which, I think, has never been determined. Doctor Lambe considers animal food and impure water as exhausting stimuli; but he seems to think their action on the system as somewhat different. If they really contain pernicious ingredients, which I am inclined to think, their evil influence may be increased, in certain states of disease, by the lacteals losing their discriminating power, and becoming more like common absorbents, drinking up unassimilated or noxious matter, which, by a healthy performance of the digestive functions, would be precipitated. In these cases, then, attention to regimen must be particularly necessary. Such a view of the subject as this, enables us, in some measure, to reconcile the beneficial effects of vegetable diet on many persons, with the apparent health of others who eat animal food.

Port wine and bark have been given in agues, and in many such like complaints; but even here their utility seems questionable: and in many low and putrid kind of fevers, in which it is deemed necessary to add the stimulus of wine, it is probable that a too free use of stimulus as a habit, had previously brought the patient into a state of body which would lead to such diseases*. Aneurisms have, I believe, generally happened to persons who have habitually drank spiritous and fermented liquors to a considerable degree.

In scrofula, the glandular swellings and the superficial ulcerations of that disease appear to fluctuate according to the state of the digestive functions. Such disorder of function long continued and neglected, at length excites scrofulous enlargements of joints, and other the more terrible forms of the disease, which eventually destroy the patient. For the cure of scrofula, wine and animal food have been prescribed, with a view, as it would seem, of strengthening the constitution. But the ingenious Dr. Lambe has even considered animal food as

* See Appendix.

hurtful, by becoming a stimulus more than sufficient to counterbalance the nourishment it affords, and therefore ultimately exhausting. And he has recommended a strictly vegetable diet and distilled water apparently with success. The ill effects of wine and spirits in diseases wherein even common water proves too great a stimulus, may easily be conceived.

Consumption may be mentioned as another instance of a disease in which the patient is remarkably susceptible of stimulus. It has been considered to be induced by the introduction of irritating matter into a constitution extremely susceptible. As the beneficial effects which have resulted from a nutritive but unstimulating regimen in this disease, have given a prospect of future success; so the mistaken combination of stimulating with nutritive food, and consequent ill success, may have been in part the cause why phthisis has been hitherto esteemed incurable by medical aid. A disposition to hectic fever may be imparted to the system by the continual introduction of irritating matter contained in animal food or vitiated water; yet that fever may not actually occur so as to prove destructive, until it be

excited by a more evident disorder of the digestive organs, or the irritation imparted to the constitution by any local disease. Doctor Lambe's reasoning about consumption appears to me very right*, and furnishes, at least to my mind, additional proof that the violent stimulus of wine and spirits will hurry a patient predisposed to hectic into a miserable state of irritation, which may produce organic disease, and become incurable.

The gout is admitted to be brought on by habitual wine drinking and the luxuries of the table. So generally is this acknowledged, that it has been ludicrously considered as exclusively the malady of the rich. The constant habit of vinous and spiritous stimulus ought to be regarded as laying the foundation for this disease, the paroxysms whereof appear and subside at a future period of life, according as accidental excesses occasion a more evident constitutional disturbance. I know

* See his Inquiry into the Origin, Symptoms, and Cure of constitutional Diseases : London, 1805. Also Reports on the Effect of a peculiar Regimen on Schirrous Tumours and Cancerous Ulcers : London, 1809.

persons in whom an additional glass or two is usually followed by an attack of this disease. In other cases the fits of the gout seem to return periodically without the patient being conscious of such cause of excitement. Some people have constantly symptoms of gout upon them. Peculiarities of atmosphere, or the time of year, seem often to excite or aggravate this disorder. In every case probably this is effected by means of some disturbance of the digestive processes. Gouty patients are often very subject to rheumatism, which indeed seems nearly allied to the gout. Many who have lived on a mild unirritating diet, and abstained from wine and spirits, have been remarkably free from this tiresome complaint. In all rheumatic affections, from whatever cause induced, there is probably considerable irritation in the stomach. A sudden check to the perspiration of the skin has been followed by tedious pains of this sort. But must we not suppose, in this case, the stomach to have been disordered by sympathy with the skin, and its disorder to keep up the inflammation in the muscles?

The subject of rheumatism leads me to

the consideration of its frequent concomitant, toothache, and caries of the teeth, about which many erroneous notions appear to be entertained. I have repeatedly heard that sugar rots the teeth and causes pain, and that spirit preserves them. Without dwelling on the fact, that spirit drinkers have as often bad teeth as other people, I may observe, that this assertion seems to be founded on two popular prejudices; namely, that caries is caused by the chemycal decomposition of the tooth from external causes; and that exposure of the nerve in its cavity is a sufficient cause of odontalgia; neither of which I believe to be correct. If exposure of the nerve alone was adequate to the production of toothache, we should expect every bad tooth to ache, and that the pain would be pretty constant till the whole fabric was destroyed. So far from this being the case, it is well known that the teeth of many persons have decayed entirely without pain; and that in those who are troubled with toothache it is by no means constant. If caries, then, be considered as necessary, it is certainly not adequate to cause toothache, which appears to

depend on some constitutional irritation, to which caries may be a favourable circumstance. The recurrence of the paroxysms of toothache after eating, which the patient frequently attributes to the local contact of the food, and its connexion with rheumatism and other complaints in which there is much nervous irritation, show its constitutional nature. Caries, too, seems to be an animal, not a chemycal process: the extraction of a decayed tooth is frequently followed by the decay of another, and so on of many. This is mentioned by Mr. Benjamin Bell in his book of Surgery, and by others who have written expressly on the teeth.

I was led to consider the nature of diseases of the teeth by a note of Mr. Abernethy's in his first book on Tumours, to which I refer the reader. I can only add, that all I have happened to have since seen of these complaints have confirmed me in the opinion that teeth are organized throughout*;

* On the subject of Organization we may reason thus: If all nourishment be performed by the action of vessels, either some vessels cannot be nourished at all, or vascularity must extend ad infinitum.

that caries is the result of a constitutional tendency to decay, from the habitual introduction perhaps of unnatural food ; that its progress is accelerated or retarded in proportion as the constitution becomes comparatively irritated or tranquil ; and that occasional excitement of a greater degree of nervous irritation, by disorder of the digestive organs, must be considered as the more immediate cause of the pain in the affected part. The only way for persons who are doubtful to obtain satisfaction on these points, is to put them to the test of experiment. Let those who are subject to pain and caries of the teeth, try an alterative course of medicine, combined with a mild but nutritive diet, and abstinence from all fermented and spiritous liquors ; and let them accurately observe the effect produced on their general health, and on toothache, or any other local disease of which they may happen to be the subject. I am well assured that on the continent the toothache is generally treated upon this antiphlogistic plan, and that extraction is much less frequent abroad than it is in Great Britain. The same treatment is likely to be serviceable in cases of ear-

ache and rheumatic pains of the face and head, which often accompany one kind of toothache*.

Mr. Abernethy has spoken of diseases of the oesophagus and mouth, together with those of the ears and nose, as belonging to parts which have a continuity of surface with the alimentary canal, and dependant on a disordered state of that canal and its appendages. These diseases seem often to be the result of what Mr. Hunter called continuous sympathy, and appear to me to be such as may be most speedily produced by irritation in the stomach†, which, if long continued, and rendered habitual by re-

* There seem to me to be two distinct kinds of toothache: one is preceded by a tenderness in the tooth, and a change in the decayed part from a brownish yellow to a black colour; the pain comes on by degrees, remains nearly stationary for a time, and subsides slowly: a yellowish crust then appears again on the decayed surface. The other kind partakes more of the nature of rheumatism; warmth and cold hurt it by turns; its paroxysms come on at uncertain periods, and no change is visible in the carious cavity.

† So general is this continuation of sympathy, that the surface of the tongue has ever been regarded as affording the most certain evidence of the state of the stomach.

peated stimulus, seems by degrees to destroy the tone of the long irritated organs, which suffer from continuous sympathy, and induces premature deafness, difficult deglutition, and loss of taste and smell. The eyes, too, rapidly sympathize with disorder of the chylopoietic viscera, and exhibit a variety of diseased appearances, which characterize the intemperate and luxurious; and which, if they do not soon occasion fatal diseases of structure, weaken and at length paralyze the optic nerve, and produce imperfect or distorted vision, and eventually total blindness. Spiritous and fermented liquors being the most powerfully concerned in producing and aggravating such irritation, may therefore be regarded as engines of premature debility, which sap the powers of enjoyment, abridge the term of life, and render death painful, lingering, and unnatural.

The well known property of spiritous and fermented liquors of causing those large and inflamed noses so frequent in great drinkers, would naturally lead us to refer more determinate diseases of the nose, such as polypus and ozaena, to a similar cause, even were it not known that disorder of the sto-

mach and bowels precedes and accompanies these diseases. I may in this place observe, that the continual discharges from the pituitary membrane, though so common, are quite unnatural, and appear to be kept up by a sort of habitual irritation in the stomach, from the manner in which people stimulate that organ. The same may be said of irritation in the glottis and trachea, cough, and habitual expectoration. It will perhaps be asked, why irritation induced in the digestive viscera should, at different times and in different subjects, cause such an infinite variety of diseases of remote organs? This, however, is a question which demands a knowledge of the mysterious laws of sympathy, which will probably never be satisfactorily explained*.

* A man standing opposite to a looking glass throws the rays of light on its plane surface, and the glass throws them directly back on him: thus he sees himself: but if there be any irregularity in the mirror, it may throw certain of the rays off at angles, and so cause another person standing afar off to see this man's shadow. Thus this second person may be said to sympathize with the first. So stimulus applied to any part of the body, is communicated to the brain, which in a healthy state would act again on the same

The dependence of disorders of the urinary on those of the digestive organs, is well known. The effect of gin on the secretion of urine shows the direct power of some modifications of alcohol to stimulate the kidneys. Whether it acts thus merely by a change in the quality of the blood from absorption of the spirit, or whether it otherwise occasions a variety in the disorder of the digestive organs, with which the kidney, in particular, sympathizes, is of little use to inquire. A continuance of any stimulus which violently affects the secretions of an organ may ultimately lead to weakness and disease of that organ. I believe this to be a principal source of

part, and cause what we call increased action of that particular part: but in a disordered condition of the nervous system, the brain, stimulated by any particular part, might not only return its action on that part, but on some other. Thus food put into the stomach stimulates and causes an increased action of the brain on that organ: increased vascular action, the gastric liquor, and digestion, follow: but when the stomach and nervous system are irritable, the brain thus stimulated acts not only on the stomach, but on distant organs; which, if their strength be not commensurate to this action, will go into a state of disease. Sympathy may be ascribed to an irregularity in the reflex action of the brain.

renal irritation : hence the separation of earthy particles from the blood in morbid quantity and composition, which occasionally form large urinary calculi only to be got rid of by lithotomy. Or the irritation and disorder of the kidney may be of such a peculiar kind, that it may not separate the proper quantity of phosphat of lime from the blood, which may occasion a morbid deposition of it by vessels which naturally secrete the soft parts, causing extensive ossifications or exostosis. If the kidneys, as sagacious physiologists have believed, be intended as an eliminary for conveying out of the circulation deleterious or superfluous matter ; any stimulus or variety in the disorder of the digestive organs, which particularly affects their functions, may aggravate all the evils of mal chyfication and the absorption of unassimilated food.

Another view may be taken of this subject, which appears to add to its importance. The disorder of the urinary organs in time affects those more immediately concerned in the office of procreation. Irritation in the ureters, and in the bladder, with mucous discharges from its internal surface, together

with strictures in the urethra and disorders of the prostatic gland, are symptoms which seem to follow a morbid condition of the kidney and its secretions. The genital organs soon become affected, and all those tedious complaints ensue which consist in morbid alterations of their structure; or such a depravation of their natural functions, as at length destroys or perverts the sexual appetite, and renders the individual unfit for the propagation of the species.

A common notion prevails, that people drink themselves, as the phrase is, into dropsies. I need not take the trouble, I think, to refute the vulgar prejudice, that there is a connexion between the quantity of fluid drank and the fluid of the dropsy. Popular opinions, however, though often erroneous in certain particulars, have generally some foundation in experience; and the very frequent occurrence of dropsical complaints in persons who have been great toppers, has, it seems, given rise to this idea. I cannot find a well authenticated instance of either ascites, hydrothorax, or anasarca, occurring in a patient who had not drank of some kind of fermented or strong liquor.

Analogy teaches us to ascribe such effusions to a morbid state of the discerning vessels, rather than to a defect of absorption: but the inquiry into this is of little importance, as these diseases are very obviously connected with a state of constitutional weakness and irritation, which may generally be traced to violence done to the digestive organs by vinous and spiritous ingurgitation. Even oedematous swellings of the integuments, particularly of the extremities of persons approaching death, do not appear to be found in those whose previous habits of life have been such as it is the object of this paper to recommend.

Jaundice, it is well known, may often be satisfactorily traced to spiritous stimulus, as well as to anxiety, or any other cause of visceral irritation. Jaundice and dropsy often occur together at the conclusion of the lives of those who have drank freely of these liquors, and exhibit a striking picture of the lamentable termination of a constitution weakened and irritated by their continual use.

The formation of more determinately local diseases, such as the different kinds of circumscribed tumours, in which the diseased

action is apparently confined to the affected part or organ, have, notwithstanding their apparent locality, been considered by the best nosologists as connected with an unhealthy state of constitution. The simultaneous appearance of the same variety of tumour in different parts of the body has been often noticed, and considered as indicating a peculiar disposition in the system to its formation, roused into action by irritation induced in the digestive viscera. I have not been able to collect an instance of such tumours happening to persons who had subsisted on a healthy diet, with total abstinence from fermented and spiritous drinks; but even a single case or two, if it could be found, would not militate against the general rule. When we consider that the effect of unnatural stimuli is that of forming the diatheses of diseases as well as that of more immediately exciting them, they may be regarded as slowly and secretly undermining the health of people at large, and laying the foundation for such a condition of the body, as, when subsequently irritated, produces all those numerous diseases,

which I have described ; and which, when aided by peculiarities of temperament, or local circumstances at present little known, at length induces cancer and an irrevocable error of the nervous actions, which will shortly be inconsistent with the continuance of life.

The sacred writers, and indeed the writings of the ancients in general, abound with references to the destructive tendency of wine*. I have forbore to quote them, as a larger work on this subject will shortly be laid before the public, by a person much more calculated for the task of writing than I am ; in which all the arguments for and against the practice of drinking 'spiritous and fermented liquors will be fairly stated.

A notion is entertained by some, that those who have been long accustomed to strong drinks, cannot leave them off with safety. This, however, the experience of many who have tried the experiment, shows to be a mistake. It will perhaps be said, that I have attributed too much to the in-

* See Prov. xx. 1.—xxiii. 29, 30; xxxi. 6. Daniel, chap. i. Hos. iii. 1. See also *Αισχυλ' πρωμηθενσ Δεσμωτης, &c.*

fluence of alcohol in the production of diseases; considering that under some form or other the practice of drinking it may be considered as general. I answer, that disease is equally general; and we have here a general cause for a general effect. Those who combine a total abstinence from spiritous and fermented liquors with a nutritive and unirritating regimen*, are comparatively few: they are particularly healthy, even where such regimen has been adopted to cure some previous disease. We have here a particular cause for a particular effect. Let the sceptical try the experiment. It will be said again, that the oriental nations, who subsist on vegetable diet, and use no wine nor spirits, are nevertheless as subject to diseases, though perhaps not so much so, as Europeans. It is, however, a mistake to suppose that they are free from the perni-

* I lay stress on unirritating food. I cannot enter here into a discussion about diet; it is an extensive and complicated subject, and does not come under the object of this paper. I refer the reader to Dr. Lambe's publications. I can only say, that I should not consider the experiment of abstinence from spiritous and fermented liquors as perfect, unless combined with a vegetable regimen, and the use of pure water,

cious use of great stimulation. Half Asia is enfeebled by the use of opium and tobacco ; and even among the Gentoos strong spices are used as pleasant stimuli.

The result of a more accurate investigation than has already been made into the habits of life, and diseases of different nations, might be that of corroborating, rather than weakening, the opinions which I have stated ; which are not merely the result of any hypothetical reasonings of my own, but are founded on facts known and acknowledged by sagacious and discerning philosophers of yore, at a period, when pathology, as yet simple and unperplexed with the senseless jargon of nosological nomenclatures and delusive names, depended only on such an accurate observance of the connexion between phaenomena in diseases, as appears calculated to lead the most superficial minds to a knowledge of their exciting causes : and which prescribed no medicines but those whose effects were ostensible to the senses. The knowledge of these facts, however overlooked by the undiscerning ignorance, or shut out from public view by the wilful misrepresentations of subsequent prac-

tioners, has been again brought to light by several distinguished modern physiologists; to whom, although, perhaps, as has been said, they have advanced little absolutely novel, much praise is certainly due for a scientific illustration of the most important medical truths; of which, notwithstanding their antiquity, physiologists of more enlightened ages appear to have been unaccountably oblivious.

From the infinite variety in human minds it might be rationally expected that people would take very different views of the same subjects, even where the evidence appears to be nearly the same. In the above reflections I have done nothing more than to exhibit a hasty sketch of the subject as it is viewed by myself; a retrospective survey of which leads inevitably to the following conclusions.

The drinking spiritous and fermented liquors, together with a diet of irritating food, are practices which have been reprobated by the common sense of all ages, as injurious to the welfare of mankind, and which the strictest physiological inquiry has shown to be the principal cause of that

combination of bodily and mental disorder which exhibits itself under every conceivable form of human misery ; which appears to be every where increasing, and which, in its twofold operation of destroying the power of procreation, and subsequently the individual, must be condemned as an evil which strikes at the root of existence ; and which, if it should ever become universal, seems capable of cutting off man from the face of the earth. In dissuading, as I have done, from practices which are so immediately destructive of intellectual enjoyment, I would by no means be understood to undervalue the pleasure of the senses, which nature has prepared for the use of every animal, in due proportion. It is my object only to condemn those which, in their nature, are incompatible with the pleasure of the mind, and which diminish, by degrees, the enjoyment of their own repetition. In short, I wish mankind to fly from the orgia of Bacchus, which destroy together the pleasure of sense and intellect, and to court Pomona in the garden of nature, where both may be alternately enjoyed with impunity.

Having, in this imperfect sketch of human diseases, deduced them principally from the effects of unnatural stimuli introduced into the stomach, varying in kind, quantity, and time of continuance, and having made due allowance for the operation of other causes, such as lazy and indolent habits, bad air, and the effects of the mind and body on each other; having shown, too, that the existence of any one of these causes of disorder renders the influence of the rest more powerful; and that spiritous and fermented liquors predispose to, and aggravate the effects of all, the joint influence whereof renders the body capable of derangement by atmospheric peculiarities, which it is wholly out of our power to control; I am induced, in conclusion, to advert to the principal authorities on which my notions respecting diseases have been in part founded; and to state my opinion, firstly, with Doctor Lambe, that the origin of all diseases is from without, that their foundation has been laid from time to time by a departure from the instinctive appetencies of our nature, manifested in the eating of animal food, and acquiring, as a con-

sequence, a morbid appetite for unwholesome drinks, and a desire for other destructive habits of life, which the increased action necessary to affect the elimination of the poison has rendered necessary to temporary comfort: secondly; that the predisposition to diseases being thus formed, and subsequently varied by the combination of different evil habits in individuals, and by varieties of climate, morbid actions of the nervous system are at length set up for their production, which are marked by appearances indicative of disorder of the digestive organs in general; for the most useful and scientific account of which, the public are indebted to Mr. Abernethy: while it is right to mention, lastly, that the variety observable in such disorder renders further inquiry into its peculiarities and principal sources of excitement a most desirable object; that the powerful influence of the liver, in particular, on the functions of the other viscera, must not be forgotten, being warranted by numerous facts, and sanctioned by the opinion of antiquity; and that additional light may be thrown on this subject when the long

promised work of Doctor James Curry shall be given to the world. The practical deductions from these opinions are as follows: The curative intentions of the physician should be directed to the administration of such medicines as are known to rectify disorders of the digestive organs in general, not omitting to pay strict attention to regulate the functions of the liver, in particular. Such a plan of conduct will restore the general health, and cure local diseases in proportion as it reestablishes a healthy performance of the chylopoietic functions. But the cure will be imperfect, and only temporary, unless followed by a diet of natural food, and abstinence from spiritous and fermented liquors.

HANC OLIM VETERES VITAM COLVERE SABINI
 HANC REMVS ET FRATER SIC FORTIS ETRVRIA
 CREVIT
 SCILICET ET RERVV FACTA EST PVLCHERRIMA
 ROMA

APPENDIX.

Page 9, line 23. A knowledge of the intimate connexion existing between the state of the mind and that of the digestive organs, particularly of the liver, appears to have prevailed in the remotest period of history, and to have originally laid the foundation of all those words in different languages that are expressive of mental dejection, which, if we examine their etymology, we shall find to have a reference to disorder of the abdominal viscera and their secretions. I refer the curious inquirer to the etymology of the Greek *Μελαγχολία* and *Υποχονδριασῖς*, the Latin *Atrabilius*, the Italian *Atrabiliare* and *Fegatoso*, the French *Atrabilaire*, the Spanish *Melancolia*, the German *Schwartzgalig*, the Dutch *Zwaardgalig*, etc. Etymology furnishes the most certain proof of the genealogy of human ideas and the progress of knowledge. Consult *Ἐπεα Πτεροενία*, or *Diversions of Purley*, by John Horne Tooke.

A disordered state of the liver was often used metaphorically, by the ancient poets, and by the writers of sacred history, to express mental perturbation and anxiety. See SOLOM. *Prov.* vii. 2.—JEREMIAH, *Lament.* ii. 11.—HORAT. lib. i. *carm.* 13. and 25; lib. iv. *carm.* 1. line 12.—*Serm.* lib. ii.—*Eccl.* ii. line 75.—JUVENAL. *Sat.* i. 45;—vii. 17.—PERS. *Sat.* 1.—*Sat.* v. 129.—OVID, *lib. amor.*—SENEC. &c.

The Greeks called a cowardly and malicious person

Λευκηπαλίαις. To such a character we now vulgarly apply the epithet *whiteliver'd*. The green appearance of the eye often from the absorption of vitiated bile, of a liver disordered by the passion of jealousy, has induced some persons ridiculously to call that passion the *greeneyed monster*. Gloomy views of any subject are commonly said to be taken with the *jaundiced eye*.

P. 10. l. 3. Consult the works of Bertrandi, Andouille, Abernethy, and others.

P. 12. l. 19. I refer to Cheyne on Apoplexy and Lethargy, p. 25, *et alibi*.

P. 14. l. 24. The necessary connexion between the physical health and the moral and religious character of mankind, was much more attended to in ancient times than it appears to be at present; and gave rise to many of those religious and political ordinances which enjoined ablutions and fastings, and which prohibited certain kinds of food and drinks. Afterwards people, losing the cause of the proscription, thought there was something absolutely immoral in eating or drinking particular things, at the same time that they made use of others equally noxious. So the Mahometan scrupulously avoids wine and pork, but has no objection to destroy his faculties by the use of opium and tobacco. In the sacred writings we find those kinds of food prohibited to the Jews which are of the most unwholesome quality. The French writers, with a view to subvert the authority of the Bible, have laboured to prove that these rites of the Jews originated in a superstitious reverence paid to the animals which represented the configurations of the stars. See *Origine de tous les Cultes*, par M. DUPUIS.

P. 19. l. 11. It does not apper to be the heat or

cold, dampness or drought, of the weather, nor the sudden transition from one to another of those states which becomes the existing cause of disorder. The disturbed state of the stomachs of many persons before and during thunderstorms, as well as the pain felt in limbs formerly broken, in particular kinds of weather, would lead us to attribute the unhealthy quality in the air to some peculiarity in its electric state. In corroboration of this, I have, often, during what has been found to be unwholesome weather, observed such circumstances as appeared to denote an irregularity in the distribution of the atmospheric electricity. I allude to the continual and multiform changes of the cirrus and other clouds, the irregular action of De Luc's ærial electroscopes, etc. Refer to *Phil. Mag.* vol. xxxvii. p. 424, and vol. xxxviii. p. 68. See the reasoning of Lucretius about the influence of the atmosphere in diseases. LUCRET. *de Rer. Nat.* lib. vi. *viz. uti et homines quædam esse* P. 20. l. 6. I believe it is pretty well known that the bite of a rabid animal does not produce uniform effects on different persons; but the kind of constitution and previous state of health of persons so infected does not appear to have been much inquired into. The manner in which canine rabies spreads is exceedingly curious. The simultaneous occurrence of this, as well as of other diseases, in distant parts of the country, seems to show that a peculiar quality in the air is the exciting cause: but as only a few dogs become the subjects of it originally, we must consider some peculiar state of disorder in the dog as necessary to it. And I beg leave to propose it as a question for future investigation, Whether there be any peculiarity in the appearance of the faeces, or any other circumstances in



dogs, before the appearance of hydrophobia, which would lead us to refer that disease to antecedent disorder of their digestive organs? The evacuation of the well-known Album Graecum, and other circumstances, show a variety in the digestive functions of dogs. I have given the pil. hydrarg. to unhealthy dogs with great benefit. In one case, a cutaneous disease resembling the mange subsided by these means.

The diseases of domestic animals are interesting, inasmuch as they show the power of unnatural food and habits to cause a variety of disorders, and confirm the opinion that human diseases are chiefly referable to the same cause. In dissecting tame animals I have frequently found ossifications of the soft parts, and preternatural tumours; but I never remember to have found any marks of organic disease in those which might be properly called wild.

P. 23. l. 9. It is possible that many persons who have been long accustomed to the excessive stimulus of much wine or spirits cannot leave them off all at once: this must then be effected by degrees. With regard to the medical use of wine, it seems that there are a few cases in which, from a particular state of exhaustion and insensibility, brought on, perhaps, by habitual stimulus, it may be necessary to add stimulating liquors to a certain extent, to enable the stomach to perform the office of digestion, to prevent mortification, etc. But in many low fevers, in which the use of such remedies has been generally thought necessary, a plan of treatment which in such a variety of other cases has proved efficient, has been pursued, and attended with unexpected success. I mean such remedies as have a known power to excite and strengthen the alimentary canal; the

stimulus of which is of a very different nature from that of every modification of alcohol. This is, perhaps, the properest place to insert the following familiar letter from my particular friend, Mr. Cornwall Reynolds, surgeon of Hackney, on whose judgment and veracity the utmost confidence may be placed, and who has politely condescended to permit his letter to be printed.

“ DEAR SIR,

“ I CAN only steal a few minutes from the active pursuits of life, to comply with your desire of stating those facts relative to the ineffectual (I had nearly said fatal) practice of loading the stomach of sick persons with that deified remedy in fevers, cinchona, and port wine.

“ I had too long trusted to the theories of men whose respectability and situation in society gave currency to their assertions, until a constant disappointment in their remedies, and vexatious loss of men intrusted to my immediate care, compelled me to examine into the basis on which such practice was founded: and it is no more than a strict adherence to truth on my part, to declare, that after a very ample field for observation, and an attentive trial given to a very different mode of practice, I am compelled to declare that it is wholly theoretical, and highly mischievous, to expect a beneficial result from the administration of such stimulants in fevers.

“ During my service in the West Indies, and in the Mediterranean, I was forcibly struck with the simplicity and success of the practice pursued by the French physicians, and the advantage of which I very soon took occasion to avail myself of. Having under my care a number of men ill of a very severe attack of

fever, that in the latter stages might be termed typhus, and finding that my stimulant plan was ever abortive, I ventured on that simple mode hereafter explained, and had a very just cause to regret that I had not thought for myself much sooner in life.

“ The various stages of fever it is not here necessary to enter into; I mean that disease of body arising from either miasmata, contagion from a vitiated atmosphere, or very generally local sources of disease. I will not enter the list of nosological controversy, but assume my terms are understood; and, if they are not, the fault is not with me. Instead of pouring down bark and wine when symptoms of delirium, extreme debility, quick and weak pulse, with incoherent mutterings, were present, I had recourse to gentle warm ablutions, and barley water decoctions; to which was added as much lemon juice and sugar as made it palatable. The bowels were first opened by solutions of sulphas magnesiae; then the mild *daephonis* was maintained by the simple *cooling tyshan* acidulated with lemons: and I can safely declare, upon the honour of a man who despises the hollow pomp of medical phraseology to help him out, that I had the pleasure of seeing some hundreds, both British and French, arise from their beds, and walk. Had you seen their countenances after being supplied with this liquid, and a little boiled sago, or broth, for nourishment, and plenty of oranges and lemons, it would have, I believe, given you real comfort.—Dr. Wilson, who accompanied Lord Minto to Corsica, can attest the facts I mention; and, to his credit, strongly enforced the plan of opening the bowels, and diluents to be more employed than it was at that period. As even the disease we speak of has never been really well understood, it would be well if men were permitted to cool that inor-

dinate heat, the very nature or source of which is still a secret, not likely to be solved by compilers of nomenclatures, instead of clogging the stomach with cinchona, or constricting substances, and stimulating away the little of remaining life by giving alcohol under the more specious and genteel name of *port wine*. This is not, in its now state, fit to meet the public eye, nor can I devote time to trim it for review: but if truth is your object, and experience deserves notice, I hope you know that what I have advanced appears to me to be the only object next the heart of,

“ Dear Sir,

“ Your’s ever,

May, 1812.

“ C. REYNOLDS.”

P. 28. note. Some recent observations and experiments have induced me to believe the hair on the human head, and body, and probably all hair of animals, to be vascular, and that there is also an aëriform perspiration into the cavity of the shaft itself.

In people of what are called nervous and susceptible constitutions, I have frequently noticed a remarkable variety in the appearance of the hairs on the head: they have appeared, at times, diminished in quantity; at others, superabundant. I have examined them carefully, in each of their states, and found their apparent diminution to consist in the shafts themselves becoming smaller, drier, losing their tension, and lying in closer contact. I was once inclined to attribute their closer contact to a diminution of their electricity, by which they would become less mutually repulsive: this, however, does not seem sufficient to account for their decrease in size. The shaft may possibly be organized

throughout, and its enlargement may be caused by an increased action of its vessels; there may also be an aëriform perspiration into its cavity, by an increase of which it may be more distended: and the increased size and tension of the shaft may result from the cooperation of these two causes. The increased size, strength, and tension of the hair, appear to accompany health, while the opposite state seems to be connected with disorder. The sympathies between the skin and the stomach have been frequently mentioned by physiologists: the skin has been found to be alternately dry and hot, moist and hot, dry and cold, and moist and cold; and these varieties have been attributed to varieties in the state of the stomach, between which and the skin a very direct sympathy is believed to exist. But the varieties in the appearance of the hair in different states of disease do not appear to have been much noticed. I have observed, that five grains of pil. hydrarg. have changed the appearance of the hair very soon after their administration. From being flaccid, dry, and small, it has become tense, strong, and moister. Now mercury may increase an aëriform perspiration into the cavity of the shaft, if such an one exist; it may also rectify a disordered state of the digestive organs, and, by that means, cause a stronger and more healthy action of the vascular system, and of the vessels of the hair among the rest. I think it by no means follows that hairs are not vascular, because we cannot discover their vessels. Can we demonstrate those small arteries which ramify in the coats of, and nourish, the smallest *vasa vasorum*? Such reflections as these ought to prevent our denying organization to any part of a living body, even to the cuticle or the enamel of the teeth. The continual falling off and

reproduction of the cilia in people with weak eyes, is a curious thing. I have known the whole of the upper eyelashes changed in one week, when the stomach has been irritated by stimulating food and drink.

P. 31. l. 5. Dr. Darwin, in his ingenious arrangement of ocular spectra, has omitted to relate that similar phantasmata frequently occur without the precurrence of the usually exciting causes he mentions, when the nervous system and digestive organs are irritated. The well known phantoms which are called the blue devils, and the vivid imagination of strange and hideous faces described by Locke which appear to pass in succession before the eyes of nervous people by night, seem to hold a middle station between ocular spectra and the common imaginations of the mind. See *Locke on the Conduct of the Human Understanding*, p. 50 and sequel. Against such blue devils as these the blue pill is the best antidote I know of.

The common kind of muscae volitantes appear to be of two kinds: the one, a simple dark spot which appears to float with the motion of the eye: the other, a congeries of small lucid spots, or sometimes circles, which give the idea of air bubbles on water, when we look at the sky: they likewise move with the motion of the eye: they are generally seven or eight in number, and appear irregularly clustered together like the Pleiades. I have been inclined to ascribe them to small air bubbles floating in the lacryma, from a disposition in the secretory organs to eliminate air.

After looking long on the bright blue sky, the eye becoming fatigued, myriads of small lucid specks appear all in motion, which some have attributed to convulsive motions in the extremities of the supposed minute muscular fibres of the retina, from being overfatigued?

P. 31. l. 21. Polypi have hitherto been looked upon as incapable of being got rid of except by extraction. I have, however, been recently well assured, that in several cases in which the patient has refused to submit to the operation, the polypi have gradually died away after the stomach and bowels had been brought into a more healthy state by alterative medicines. For authority, consult Abernethy, *Const. Orig. Loc. Dis.* (supra citato), p. 189.

P. 41. l. 10. Consult M. Halle, *Mem. Soc. Roy. Med. sur le traitement de la Manie Atrabilaire, &c.* Abernethy above cited, &c.

IN the above account I have spoken only of those diseases which belong to Europeans in temperate climates, and which we daily witness. The same mode of reasoning, however, I believe to be applicable to other diseases, the peculiarities of which being dependent on the atmosphere and customs of distant countries, are known only abroad in the polar or tropical regions. People have in general rather appeared assiduous to describe the varieties in the external appearances of such diseases, than to investigate their history, and the habits of life and state of general health of the patient, antecedant to their occurrence. Till, however, such an inquiry shall be made, and the results delivered to the public, I shall continue to reason from analogy, and to think the evidence afforded in this country, and before my own eyes, and corroborated by the history of diseases given by superior and eminent observers, sufficient to establish the opinion that whatever may be the peculiarities of diseases, varied

by the multiplicity of cooperating causes alluded to, whether they principally affect the bony fabric which supports the body, the ligaments that connect it, or the muscles that move it; whether they affect chiefly the absorbent sanguiferous or excretory vessels, or disorder particular viscera; whether they attack individual nerves, destroy particular organs of sensation, or so disturb the sensorium as to derange the whole body, or to interrupt the operations of the mind; a disorder of the digestive viscera by the conjoint influence of bad chylification and sympathetic irritation, is more or less concerned in their production and maintenance, the cure of which becomes the principal object. Finally, that the nature of an animal is such, that no part or organ can be much diseased independently of disorder of those important organs which nature has provided for the nourishment and conservation of the whole.

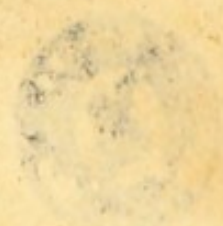
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