DERMATO-PATHOLOGIA;

OR,

PRACTICAL OBSERVATIONS,

FROM SOME NEW THOUGHTS ON

DISEASES OF THE TRUE SKIN,

AND ITS EMANATIONS,

THE

RETE MUCOSUM AND CUTICLE.

DERMATO-PATHOLOGIA;

OR

PRACTICAL OBSERVATIONS,

FROM SOME NEW THOUGHTS ON

THE PATHOLOGY AND PROXIMATE CAUSE

OF

DISEASES OF THE TRUE SKIN

AND ITS EMANATIONS,

'HE RETE MUCOSUM AND CUTICLE.

WITH AN APPENDIX CONTAINING

FURTHER OBSERVATIONS

N THE INFLUENCE OF THE PERSPIRABLE FLUID IN THE PRODUCTION OF ANIMAL HEAT;

AND REMARKS ON

THE LATE THEORIES OF SCURVY;

WITH THE PARTICULAR VIEW OF

ecommending the OAK BARK, as a New Marine Antiſcorbutic; and as a probable Antiſeptic in ſome other Putreſcent Diſorders.

BY

SEGUIN HENRY JACKSON, M.D.

MEMBER OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH,

YSICIAN TO THE WESTMINSTER GENERAL DISPENSARY, AND TO THE INFIRMARY OF SAINT GEORGE'S, HANOVER-SQUARE.

LONDON:

PRINTED FOR THE AUTHOR,

H. REYNELL, PICCADILLY, AND SOLD BY J. ROBSON, NEW BOND STREET; AND J. JOHNSON, ST. PAUL'S CHURCH-YARD.

M.DCC.XCII.

" Former hypotheſes have been particularly hurtfull to the practice of phyſic, in that they have withdrawn our attention from, and prevented our ſtudy of, the motions of the animal ſyſtem, upon the ſtate of which the phænomena of diſeaſes do more certainly and gerally depend. Whoever, then, ſhall conſider the almoſt total neglect of the ſtate of the moving powers of the animal body, and the prevalence of an hypothetical humoral pathology, ſo conſpicuous in every part of the BOERHAAVIAN ſyſtem, muſt be convinced of its very great defects, and perceive the neceſſity of attempting one more correct."

CULLEN.

" Obſerve how Syſtem into Syſtem runs:"

* * * * * * * * * * *

* * * * * * * * * * *

" What ſhocks one Part, will edify the reſt,

" Nor with one Syſtem can WE all be bleſt."

POPE.

TO THE CRITICAL READER.

IT is apprehended, that the author will be thought to have taken too great a liberty, in uſing the term, NEW THOUGHTS, in the preſent publication. He thinks himſelf, that he has been juſtified in the application of it, as far as his own acquaintance with the obſervations of even late writers on impetiginous diſorders goes; and he ſhall not ſo much regret their being proved not NEW, as their being not thought JUST, in the opinion of the more learned CRITIC.

TO THE ANATOMICAL READER.

IF the term EMANATION ſhould, alſo, particularly diſpleaſe the ANATOMIST, as applied to the rete mucoſum and cuticle, from its having appeared to the author to expreſs well the nature and origin of thoſe ſubſtances, as he has conceived them to ſpring from the cutis vera, the application of it will be beſt defended by the following quotation from JOHNSON's dictionary.

"Emanation, *n. s.* Emanatio, *Lat.*

1. The act of iſſuing or proceeding from any other ſubſtance.

2. That which iſſues from another ſubſtance; an effluence; effluvium."

FOL. EDIT.

TO THE CHEMICAL READER.

If it appeared, that the author will be thought to have taken too great a liberty, in using the term new compound, in the present publication, he thinks himself, that he has been justified in the application of it, as far as his own acquaintance with the chemistry of even late writers on impregnations allows, and he shall not be much grieved at being proved an ass, as such being not thought just, in the opinion of the most learned critics.

TO THE ANATOMICAL READER.

If the term anatomical should, also, particularly distinguish the ANATOMIST, as applied to the technicalism and cuticle, from its having appeared to the author to experts well the nature and origin of their habitance, as he has endeavoured them to form from the cuticle here, the application of it will be fairly defended by the following quotation from Quincy's dictionary,

"Innate, a. n. Innatus, Lat.

1. The act of falling or proceeding from any other substance.

2. That which flows from another substance, as effluence, effulgence."

For. Every

TO

SAMUEL FOART SIMMONS, M. D.

FELLOW OF THE ROYAL SOCIETY, AND SOCIETY OF ANTIQUARIES IN LONDON; OF THE ROYAL ACADEMY OF PHYSICIANS AT MADRID; AND OF THE MEDICAL SOCIETIES OF PARIS AND EDINBURGH: CORRESPONDING MEMBER OF THE ACADEMIES OF SCIENCES AT PARIS AND MONTPELLIER; PHYSICIAN TO SAINT LUKE'S HOSPITAL, IN LONDON, &c.

DEAR SIR,

FROM the very obliging manner, in which you gave your consent to my dedicating the following sheets to you,

 I think

I think I may take the liberty to conclude, that the occaſion afforded us a mutual ſatisfaction. Each of us ſeemed to feel in the double capacity of giver and receiver. Friends can never commit acts of kindneſs to one another, without its always becoming a queſtion, Who enjoys the greateſt ſatisfaction?

I wiſh my mind felt more conſcious than it does, that the following pathological obſervations would become, in every reſpect, deſerving of your countenance and approbation. They are built upon a phyſiological doctrine, which many may probably think would have

have better accorded with the experience of a longer life; but ſince you can command, as my colleague at the WESTMINSTER GENERAL DISPENSARY, the ſame opportunities, which have afforded to me a reaſonable confirmation of the opinion I have long taken up, reſpecting chiefly the chronic diſeaſes of the human ſkin, it will be very eaſy for you, in no great extent of time, to be yourſelf convinced of the validity, or the error, of the doctrine.

If they ſhould, however, fail of improving the preſent practice in impetiginous affections, I at leaſt indulge the hope, that they

will be thought to explain, in a better manner, the principle, on which ſome parts of the old treatment of cutaneous diſeaſes ſucceeded. It is coming nearer, I truſt, to the true knowledge of cauſe and effect; and it is, in my humble opinion, more conſonant with the medical improvements and diſcoveries of the preſent century.

All theories have met with their ſupporters, and their oppugnors. Facts are more ſtubborn things, and want not the aid of reaſoning to hold them up. I am not without my hope, that facts will ſupport the theory I have advanced, and

and that they will even become daily more and more numerous in its ſupport, when the object of this volume is generally known, and the ſubject is ſeriouſly investigated.

If a ſtrong partiality to the doctrine, and to whatever may appear connected with the anatomy, and the phyſiology, of the human ſkin, has rendered me too confident of its meeting with ſucceſs, and with at leaſt the attention, if not the approbation, of medical practitioners, and has, at the ſame time, made me blind to the errors, and perhaps inconſiſtencies, of my own ſyſtem, I muſt requeſt, that you,

DEAR SIR, and my readers, will exclaim with me,

Eheu! "*Humanum eſt errare*;"

and that you, and they, will overlook its deficiencies with candour.

But although a ſhort period may convince me of the imperfections of my own pathology, and of my reaſoning on impetiginous diſeaſes, yet no length of time will ever deprive me of the ſatisfaction, which is at preſent afforded to me, by the opportunity of thus publicly acknowledging the great pleaſure I enjoy in your ſociety and friendſhip, and in the anticipation of

of a long continuance of them; and of aſſuring you,

DEAR SIR,

That I ſhall ever remain,

Moſt cordially,

Your very ſincere friend,

S. H. JACKSON.

HANOVER-STREET,
HANOVER-SQUARE,
November 9, 1792.

NOTE.

NOTE.

The volume of MEDICAL FACTS and OBSERVATIONS, referred to at page 170 in this work, is the third, lately publiſhed.

PREFACE.

PREFACE.

TO THE READER.

THE compiler of the periodical work, entitled the WORLD, when ſpeaking of the various qualities of an author's mind and heart, and of the difficulties and diſappointments of that hazardous, and too often unenviable, avocation, has very ſhrewdly obſerved, that what the apoſtle ſays of CHARITY, may as truly be ſaid of an AUTHOR: "*He ſuf-*
"*fereth long, and is kind;—he beareth all things;—*
"*hopeth all things;—endureth all things.*"

Such a man, no doubt, an author would be, if he always conſulted his own comfort, and his own intereſt; but ſuch he cannot be eaſily, and when

he pleaſes. His ENDURANCE comes only with his experience and riper years; for his increaſing knowledge of the world teaches him, not only the neceſſity, but the prudence, of a meek ſpirit.

His HOPE, on the contrary, commences with his earlieſt efforts, and will in all probability leſſen, as his years increaſe. Yet, without ſome hope, he could not at any time become the bold adventurer, in the wide field of public approbation, or hazard his reputation, as a writer, with little more than the view of benefit to his fellow-creatures.

His MEEKNESS is often learnt in the ſchool of adverſity, and is very important to him, at any period of life, after an unſucceſsful attempt; for by it alone he is enabled to endure the mortification of a defeat, and to bear with his diſappointment as an author, in the joint concern of credit to himſelf, and utility to the public: for there are many critics, yet but few kind judges.

He ought not, however, in the author's humble opinion, to be diſmayed from publiſhing his ſentiments, if his mind is forcibly impreſſed with the idea of doing a public benefit. When he has had the approbation of one or two ſenſible readers, it ought

ought to arm him, at all points, to bear with charity the cenſureable reflections of the majority; for among the multitude there muſt be many minds. Diſtinct from all the other rights of mankind, the judgement feels itſelf moſt independent, and when it does not too haſtily and partially condemn, an author ought to ſubmit to its opinion with firmneſs, and complain with moderation of its deciſion.

Let it be remembered by every one, who has already added, or who wiſhes to add, his labours to the common ſtock of publications, that authors are apt, in general, to be too partial to their own productions, thereby hazarding the wreck of their reputation, on the rock of vanity and ſelf-conceit. And yet it may be conſidered as a reaſonable weakneſs of the human mind, a juſtifiable partiality, becauſe authors are more likely to be impreſſed with the weight and truth of their own obſervations, as the natural conſequence of their long habit of having cautiouſly conſidered them, than any reader can be ſuppoſed to feel on a firſt, or even ſecond, peruſal, particularly if the ſubject be quite new to him.

The idea giving riſe to the following thoughts, on the pathology and proximate cauſe of cutaneous

diſeaſes, firſt engaged the attention of the author, when he was called upon in the year 1777 to prepare a paper, to be read before the *royal* medical ſociety at EDINBURGH. Soon after which DR. SAMUEL BYAM ATHILL, of ANTIGUA, his reſpected friend and cotemporary at the univerſity, did him the honour of noticing it, in the following paſſage of his inaugural diſſertation.

" In affectibus cutaneis diverſis, ſive leproſis ſive
" herpeticis, balneum frigidum ſummis laudibus
" multi extulerunt. Apud hodiernos autem in vi-
" tiis hujuſmodi parum tantum adhibetur, et, ſi
" illis, qui hæc genera morborum a materiâ mor-
" bificâ ad ſuperficiem delata proficiſci contendunt,
" fides eſt habenda, ſummæ etiam noxæ fore ſuſpi-
" caremur. Si vero opinio, quam, in diſſertatione
" coram ſocietate medica edinenſi nuper lecta, pro-
" poſuerit amicus meus S. H. JACKSON, M. D. quam-
" que forſitan brevi in vulgus edet,* fundamento
" ſtabili innitatur, balneum frigidum in affectus
" hujuſmodi tutum et efficax eſſe comperiemur. Illa
" in diſſertatione, magnam ſaltem affectuum cutis
" partem

* The author at that time had an intention of making his opinion known, through the medium of a respectable periodical publication.

" partem a ſtatu debilitatis vaſorum ſuperficiei cor-
" poris extremorum proficiſci, contendit auctor:
" atque multa argumenta probandi conſilio ingenioſe
" in medium protulit. Non vero noſtrum eſt,
" hanc in præſentia doctrinam excutere. Igitur
" tantum notabimus experientiam futuram ſolam,
" utram hæc medendi ratio necne conveniat, poſſe
" demonſtrare."*

The author has, ſince that diſtant period, been deterred by many conſiderations, from making them public, entirely *at the firſt* from feeling the importance and difficulty of the ſubject, and a diffidence in conſequence of them, which he *then* found inſurmountable. But while he has been gradually advancing in the attainment of a more intimate practical acquaintance with the various diſeaſes, which afflict the external ſurface of the human body, and has, at the ſame time, become better informed of the many embarraſſing opinions, at different times promulgated by the numerous authors, who have written on the ſubject, ſome on particular, others on the general, diſeaſes of the ſkin, all of whom, in the opinion of the medical men who have ſtudied

* Exercitatio therapeutica inauguralis de uſu aquæ frigidæ externo. EDINBURGI, 1778. Sept. non.

died them, ſubſcribe to the difficulty of explaining the nature of, as well as ſucceſsfully treating, this claſs of diſorders, his inclination to divulge his thoughts has been annually gaining new ſtrength, untill he has brought his mind to think, that he ſhould be criminal, if he withheld them, any longer, from the criticizing judgement of profeſſional men.

The author, therefore, requeſts his reader to conſider the following ſheets, as holding out an humble effort to be of uſe to mankind, and it will rejoice him much, if he ſhould in time diſcover, that poſterity will in the end be benefited by his early reflections on the ſubject; for it muſt ſtill require the united labour and obſervations of many experienced practitioners, to convince a cautious age, that a ſure and ſolid advantage may be derived from any doctrine, which carries with it the appearance of novelty. The author cannot, on that account, preſume to expect very ſoon to ſee the old method of treating cutaneous diſeaſes, as far as it is connected with the old pathology of them, generally laid aſide, to admit a new one, built on a doctrine very contrary to that, on which the preſent prevailing practice is founded.

He

He can only ſay in juſtification of his attempt, that he has had very ſufficient opportunity at a public charity, for the laſt thirteen years, of making the following obſervations, and of putting into practice the pathology he ventures to lay before the public, in purſuing which he has ſatisfied his own mind, that moſt of the chronic, and perhaps ſome of the acute, diſeaſes of the human ſkin, do oftener ariſe from a morbid condition, or action, of the motions and moving powers of the ſolids, than from any diſeaſed ſtate of the circulating fluids, as capable of injuring or affecting, by a ſpecific virulence, the tone and ſtructure either of the veſſels through which they circulate, or by which they may be abſorbed, or carried back into the ſyſtem, from the various interſtices of the cutaneous organ. He even has ſuſpected, that, on ſome occaſions, a morbid action, or deranged condition, of the extreme cuticular abſorbents themſelves, might give riſe to, or at leaſt aggravate, ſome cutaneous affections, on the principle of their being inherently the conductors of animal heat, by their abſorbing the abſolute fire of the atmoſpherical air.

There is a wiſe and pertinent obſervation by profeſſor REGA, in the preface to his treatiſe "DE

"SYM-

" SYMPATHIA,"* to the following purport, to wit, " That the moſt celebrated writers of his time, with " one voice complained, that the theories of me- " dicine were ſufficiently, and indeed very ſucceſs- " fully, ſtudied and inculcated, but that the practice, " which ought to be connected with them, had " been exceedingly neglected, and was daily falling " into decay, notwithſtanding the many eminent " diſcoveries in anatomy, chemiſtry, and natural " hiſtory." A much later writer † has alſo obſerved as follows: in his introduction to an eſſay on the ſource of the ſcurvy and putrid fevers. " It has " been remarked with ſome reaſon, but with a de- " gree of ſurpriſe, that although the hiſtory of " diſeaſes has of late years been conſiderably im- " proved, the ſcience of phyſic has made very little " progreſs; and that, although the various diſorders, " which have engaged the attention of writers, have " been deſcribed with uncommon accuracy, we have " been far from attaining a thorough knowledge, " or comprehenſion, of their natures, or from being " able to give a rational explanation of their ſe- " veral ſymptoms."

Theſe

* FRANCOFURTI et LIPSIÆ, 1762.

† DR. FRANCIS MILMAN, 1782.

Theſe recorded imperfections of the medical art, muſt at all times raiſe, in the mind of a philoſophic man, the ſuſpicion, that a profeſſion thus unfortunate, after ſo many centuries of obſervations, muſt have been in want of a pathology more clearly comprehended, and better founded, by a juſter generalization of anatomical and phyſiological facts. This has been the caſe with the very *laſt* doctrine, BOERHAAVE's humoral pathology; for CULLEN's theory is not yet univerſally known and admitted; and the errors and defects, in many parts of the former's ſyſtem and practice of medicine, will ſooner or later be made evident by the recent, though ſlow, advances of the art, as well as by the detection of miſtakes in the original, and fundamental, principles of the profeſſion.

In the ſhort ſpace of time ſince profeſſor REGA wrote, many other important diſcoveries in the above branches of general ſcience have been made public. But no man has ſo much laboured, and aimed, at improving the practice of phyſic in latter times, by building it upon more rational doctrines, than our late celebrated profeſſor, DR. CULLEN. To him the medical world have been indebted, for having ſo much drawn their attention to the intereſting

connection between the ordinary function, and morbid affections, of the ſtomach, and the extreme veſſels on the outward ſurface of the body. His obſervations, however, on this fact, form only a part of that general ſyſtem, which the author of the preſent work ſhall humbly attempt to eſtabliſh, in ſome of the following pages, by a different phyſiological explanation; though the attempt will not, I fear, meet with countenance from profeſſional men at large, unleſs its elucidation appears clear to the comprehenſive mind of the learned and long experienced phyſician, (hoping ſuch can find leiſure to look at them, from feeling a real intereſt in the cauſe of medicine) who, from his general knowledge, and his own ſtore of facts and obſervations, is the proper perſon to decide upon the probable advantage, and reaſonableneſs, of any new doctrine. To him particularly the author humbly ſubmits the following reflections, but to all practitioners equally, who may have, from education and precept, built their daily hope of a ſucceſsful practice, on a ſure and intimate knowledge of its neceſſary connection, with the anatomy, the phyſiology, and the pathology of the human body.

The ingenious writer of an eſſay on the materia medica, lately publiſhed,* will not, I am afraid, be ſo

* MOORE, 1792.

ſo candid as to allow, that ſuch a great latitude of information, knowledge, and judgement, ſhould be annexed to the above named medical character, from his having made the following obſervation in that part of his work, where he has drawn an analogy, founded on his own chirurgical experience, between the ſputum of a pulmonary expectoration, and the diſcharge of an external ulcer, or gonorrhæa. "If phyſicians," ſays he, "made it a rule to ſtudy "ſurgery likewiſe, they might draw much uſeful "information from this ſiſter ART."* This cenſure ſhould not have been tacked to an occaſion of ſuch ſmall importance, as the above.

Sorry will be the author of the preſent publication, if the obſervation ſhould be generally thought well founded; but he flatters himſelf, that it is not to be juſtly vindicated. The phyſicians, however, of the preſent day, will undoubtedly feel a proper obligation to that ingenious writer, for his diſintereſted and public hint, which, unfortunately for mankind at preſent, can only be taken full advantage of by their ſucceſſors. Neither is it to be thought, that any advantage would be taken of that part of education, by the ſuperior rank of the profeſſion, otherwiſe its

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devotees would become fully juſtified in directing, much oftener than they do, the operative proceedings of the ſurgeon, from having fully engaged in his chirurgical ſtudies.

Even the ſmall experience, and opportunities of making obſervations, which have hitherto fallen to the author's lot, juſtifies him in aſſerting, that the phyſicians of this country cannot have been regularly educated, or at leaſt authoriſed to practice by the royal college of LONDON, without having progreſſively engaged, more or leſs, in the ſtudy of ſurgery, as well as medicine, particularly that part of it which relates to the diſeaſes of the ſkin. There are, even in the capital of the BRITISH dominions, the beſt opportunities of acquiring an anatomical and chirurgical knowledge, which moſt practitioners have attended to, and particularly thoſe, who have afterwards received an univerſity education. Notwithſtanding theſe advantages, the phyſician of this country is not permitted to engage in the practice of ſurgery; and it would injure the cauſe of medicine, if he did.

But what renders the obſervation ſtill more inapplicable, to the ſtate of medical practice of the preſent day, is, that many of the firſt rank in medical

dical ſociety have, in the earlier part of life, principally attended to it; and the writer of the preſent pages is more juſtified in ſaying, that too few have confined themſelves ſufficiently, in their education, to the perplexing ſtudy of medicine, than that they have not enough ſtudied ſurgery. If medicine alone was more the object of an univerſity education than it is, the improvement of medical ſyſtem would advance more rapidly than it does.

The ſtudent of phyſic has been ſo conſtantly taught to believe, that anatomy, as well as phyſiology, becomes as eſſentially neceſſary in the education for, as in the practice of, the medical branch, that, it is hoped, it may be reaſonably allowed, that the phyſician muſt inſenſibly be made acquainted with ſo much of the art of ſurgery, from its connection with anatomical lectures, as well as his own profeſſional purſuits, as to qualify him, at all times, for meeting the ſurgeon, on chirurgical points of practice.

I have thought it *the more neceſſary* to notice the above obſervation in this particular manner, becauſe it is not only *a falſe ſketch* of the phyſician's character in this country, but an attack on the weight, which he is juſtly entitled to have, with other profeſſional men, and the public.

If

If the author wanted any further ſtimulus, than a ſtrong conviction in his own mind, of the importance and neceſſity of drawing the attention of medical men to the object of this work, as particularly connected with the external diſeaſes of the body, to more ſtrongly provoke him to offer the following ſentiments to their conſideration, it would have ariſen from the joint obſervations of the foregoing writers, ſtrengthened by the generally avowed opinion, and, at this day, acknowledged fact, that there is, even in the preſent improved ſtate of medical ſcience, no claſs of diſeaſes ſo little underſtood, or ſo much in want of a rational pathology, to lead us to a more ſucceſsfull, and ready, practice, as that which ſhould include the various chronic affections of the human ſkin.

If it ſhould be thought, that the author, though with the view of throwing the fulleſt light he was capable of on the ſubject, has gone too far, in what he has ſaid on the uſe of the cutaneous abſorbents, as connected with the generation of animal heat, and of the general effect of phlogiſton in the habit, as producing the varieties of exanthematous affections, &c. the kind reader will remember, that the

ſubject

ſubject is newly handled, and may, by the more mature reflections of the complete chemiſt, and the philoſopher, be hereafter better elucidated. If he has alſo been too ſanguine in his recommendation of the oak bark, as an antiſcorbutic, he can eaſily be ſet right, on the principle he has gone, by the obſervations, and future experience, of the more learned.

But in this liberal, and enlightened, age he hopes and truſts, that no other apology is neceſſary for the preſent preſumptuous undertaking, than the author's warm, and very anxious, deſire of becoming uſefull, to his ſuffering fellow creatures. Receive it, learned reader, as the humble offspring of long and arduous reflection and obſervation, rather than as the conſequence of having ſtudiouſly examined into the works of many authors; for, in his opinion, it would be endleſs, and in fact uſeleſs, to read the whole of the ſyſtematic writings, connected with the ſubject.

As the author may ſeem to his readers, to have been guilty of an impropriety, in not more frequently mentioning his authority, for what he at times ſeems to advance, as the obſervation and opinion of other men, it is proper to requeſt it of them, that they

will

will be ſo indulgent as to attribute it to the real cauſe, namely, to his having been noting them down, for ſeveral years paſt, when he occaſionally met with them, without a proper reference to the ſeveral authors at the time. Some alſo he may have alluded to entirely from memory; for it is ſeveral years ago ſince he recorded moſt of them, and at a time when he did not ſeriouſly think of publiſhing either his own, or referring to the opinions of others, on the ſubject. Of this he feels conſcious, that he has not ſet down any thing, pertaining to, or proving, his reflections on the ſubject, but what is to be ſomewhere met with in books, or is at this time univerſally acknowledged, by the more recent experiments and obſervations of the medical and anatomical philoſopher.

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CORRIGENDA.

INTRODUCTION, page 6, line 1, for IMPENDED read IMPENDING.

Page 85, line 11, for VAROLA read VARIOLA.

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DERMATO-

DERMATO-PATHOLOGIA:

OR,

NEW THOUGHTS, &c.

ON THE

DISEASES OF THE SKIN.

INTRODUCTION.

BEFORE I enter upon a branch of medicine, too long and too often conſidered as of chirurgical importance only; a branch, which I have ſeriouſly undertaken to throw ſome light upon, with a view to the general improvement and credit of the HEALING ART, and which, if a new ſyſtem of phyſic, perhaps founded on the principle of an ARTERIO-MUSCULAR PATHOLOGY, could be eſtabliſhed on the plan

of SAUVAGE'S NOSOLOGIA METHODICA, might be properly enough denominated CACHEXIÆLOGIA DERMATICA et EPIDERMITICA, vel DERMATO-PATHOLOGIA; preparatory, I ſay, to this important taſk, I ſhall preſume on the propriety of putting together a few obſervations on the progreſs of medical ſyſtems, which will not unintereſtingly lead to the full conſideration of the ſubject.

From the beginning of time, men muſt have indulged their reaſoning faculties to promote the ſcience and practice of medicine, and philoſophic enquiry muſt have kept pace with experimental obſervations and diſcoveries. The ſyſtems of medicine are therefore numerous, becauſe it has ever been thought neceſſary to ſtudy phyſic on a dogmatic plan, and there is no way in which it can be taught on an empyric plan. "Lieutaud has been conſidered as the lateſt "and beſt writer in the latter way, but "his work has been looked on as errone-"ous almoſt in every page."*

It

* Preface to CULLEN's firſt lines, 1784.

It appears by the writings of medical men in the earlier ages of the world, that the treatment of diſeaſes was firſt founded upon a humoral pathology. "The explanations," ſays CULLEN, "which both "the GALENISTS, and the followers of PA-"RACELSUS, in their writings, ſeverally "attempted to give of the phœnomena of "health or ſickneſs, turned very entirely "upon the ſtate of the fluids of the "body."*

There ſoon appeared however ſomething ſtill wanting to more ſucceſsfully promote the healing art; and ſyſtematic writers next introduced the principles of mechaniſm, the better to account for occult cauſes, and to unravel the complicated operations of an animal machine: but, as reaſon improved, and diſcoveries in univerſal knowledge multiplied, this doctrine was found imperfect and unſatisfactory. Still CULLEN has ſaid, that "the application of mechanical "philoſophy, to explain the phœnomena "of the animal œconomy, muſt, in ſome

 "reſpects

* Preface to CULLEN's firſt lines, 1784.

" respects be continued, but never can
" be made use of to any great extent."*

For many centuries after, the science of physic seems to have intrusted its practice and success to the weight of one or other of these doctrines, and " the humoral, but " chiefly the chemical, pathology therefore " continued to prevail to the end of the se- " venteenth century; and, indeed, still " makes a great part of every system down " to the present time."†

In the beginning of the present century, men of observation and strong reflection appeared, who took full advantage of the many facts which had been observed, and of the experiments which had been made, by their immediate predecessors. STAHL, HOFFMAN, and BOERHAAVE may be named as the medical luminaries of that æra.

The FIRST founded his system on the supposed influence of a rational soul, which by physicians has been called NATURE; and

* Preface to CULLEN's first lines, 1784. † Ditto.

and "the terms, VIS CONSERVATRIX, "and VIS MEDICATRIX, NATURÆ are of "very ancient date in the ſchools of phy-"ſic, founded on a doctrine at all times "very much countenanced."*

I cannot very readily agree with thoſe writers, who argue, that the STAHLIAN doctrine ought to be entirely laid aſide, as tending only to an inert practice. The *art of curing by expectation*, or in other words, *natures curing diſeaſes*, founded on this doctrine, and ſo cautiouſly guarded againſt by DR. CULLEN, merits, in my opinion, more enquiry than will be eaſily employed or ſought after; and, if better underſtood, and judiciouſly admitted, would probably prevent the too bold uſe of many active medicines, which very often increaſe the morbid ſtate they are intended to remove, and impede the progreſs to recovery. HIS well-meant attempt to explode the whole of this doctrine will, I fear, lead to ſuch an empyrical mode of practice, as to be as likely to hazard human nature to the ever-impended

* Preface to CULLEN's firſt lines, 1784.

impended conſequences of its primo-genial mortality, as too great an encouragement of it would tend to increaſe the danger and inſufficiency of a weak and feeble practice.

The reaſon why antimony is at preſent ſo courted, rather than feared and condemned, as it formerly was by the medical faculty of PARIS, may be this; that its powers are better underſtood, and are better proportioned to act, by its doſes and improved preparations, on the principles of the STAHLIAN doctrine, conjointly with the operation of the *vires medicatrices naturæ*. Even at the time the peruvian bark was dreaded by BOERHAAVE and VAN SWIETEN, and when at this day it is ſuppoſed to have failed, or to have diſordered the habit, its failure and bad effects may be attributed to the want of knowing exactly, how much of its powers were requiſite to aſſiſt the *autocrateia* in her ſalutary and reſtorative exertions.

HOFFMAN, who next aimed at the improvement of ſyſtem, appears to have ſucceeded better; but he was alſo much indebted

indebted to his predeceſſors as well as to his cotemporaries, for their diſcoveries and reflections. His great merit lies in having taken into the account the influence and affections of the nervous ſyſtem. But the laws of the nervous ſyſtem, in the various circumſtances of the animal œconomy, are by no means explained; the ſubject, as is obſerved by many, has been found, and ſtill continues, too difficult. "On this account," ſays DR. CULLEN, "DR. HOFFMAN's ſyſtem has been looked on as imperfect and incorrect. He himſelf has not applied his fundamental doctrine ſo extenſively as he might have done; and he has every where intermixed an humoral pathology, as incorrect and hypothetical as any other."*

BOERHAAVE, the cotemporary of the two former, took the lead at the commencement of the preſent century, and appears to have acquired ſuch an aſcendency over moſt of the ſyſtematic practitioners of his time, that his doctrine was more generally received

* Preface to CULLEN's firſt lines, 1784.

received than any former had been, ſince the time of GALEN, and, if recent hiſtorical tradition* ſpeaks truly, ſtill continues to ſubſiſt with credit in many of the ſchools of phyſic.

HIS fundamental doctrine appears to conſiſt in the diſeaſe of the *ſimple ſolid:* but this will not explain all the phœnomena of diſeaſe. He is reported to have almoſt entirely overlooked the ſtate and influence of the *ſolidum vivum.* All admit, that his explanation of the ſimple diſeaſes of the fluids reſts almoſt wholly on his doctrine of *acid* and *alkali.* His idea of acidity in the maſs of blood, according to CULLEN, accounted for many of his notions, tho' inconſiſtently with his other doctrines. "His doctrine "of *alkali*," ſays the ſame profeſſor, "is "ſomewhat better founded, but is proba- "bly carried too far; and the ſtate of al- "kaleſcency and putrefaction, as well as "all the other changes, which can take "place in the condition of animal fluids, "are particulars yet involved in great "obſcurity,

* Preface to CULLEN's firſt lines, 1784.

"obſcurity, and are therefore ſtill ſubjects "of diſpute."*

His doctrines, *de glutinoſo ſpontaneo*, and of acrimony and lentor of the fluids, have been conſidered by the beſt ſyſtematic writers as imperfect, inſufficient, and apt to miſlead in practice.

On the whole, it may be obſerved, that BOERHAAVE's humoral pathology has been by moſt practitioners conſidered as hypothetically defective, while the doctrine of *plethora* and *cacochymy* has been ſo intermixt with the different parts of it, as well as with the STAHLIAN principles which preceded it, that the ſyſtematic phyſicians of the preſent century, have often been as much puzzled by the facts recorded, as by the theories advanced, in the writings of theſe intelligent directors of the healing art.

Thus much of our predeceſſors.—To ſpeak of our own times, and of our leading

* Preface to CULLEN's firſt lines, 1784.

ſyſtematic DR. CULLEN, I think there cannot be a doubt, but that moſt phyſicians will be of opinion with him, " that the " great collection of new facts ſince BOER- " HAAVE's time, acquired by obſervation " and experiment, affords the beſt and " moſt ſolid reaſon for his (or any perſons) " attempting a new ſyſtem,"* and, I truſt, will juſtify the preſent limited undertaking. He has " doubted, if any very uſeful work " can be properly accompliſhed, without " aiming at ſome ſyſtem of principles, by " a proper induction and generalization of " facts; at leaſt, he was perſuaded, that " it could be done, not only very ſafely, " but moſt uſefully, in this way."†

When he ſpeaks of his own ſyſtem, as laid down in his FIRST LINES OF THE PRACTICE OF PHYSIC, he begs us " to " conſider his hypotheſes, and general doc- " trines, as only a generalization of facts, " or concluſions drawn from a cautious " and full induction."§

After

* Preface to CULLEN's firſt lines, 1784.

† Ditto. § Ditto.

After having ſaid, that phyſicians are at preſent in a better train of inveſtigation than formerly, DR. C. further obſerves, "that the affections of the motions and "moving powers of the animal œconomy, "muſt certainly be the leading enquiry in "conſidering the diſeaſes of the human "body; that the enquiry may be difficult, "but it muſt be attempted, or the ſubject "muſt be deſerted altogether."* It is on this principle, that I ſhall attempt in the following pages to eſtabliſh a new pathology of cutaneous diſeaſes, and to ſearch after, and elucidate, their immediate or proximate cauſe.

Notwithſtanding all that has been advanced by DR. CULLEN, in favor of this principle of diſeaſe in the animal œconomy, there are ſtill many traces of the old humoral pathology to be diſcovered in his ſyſtem and practice of phyſic.

* Preface to CULLEN's firſt lines, 1784.

DERMATO-PATHOLOGIA:

OR,

NEW THOUGHTS, &c.

SECTION I.

THE SCROPHULA, SYPHILIS, AND JAUNDICE, ARE NOT IMPETIGINOUS AFFECTIONS.

THOUGH the ſubject of this eſſay is to be conſidered in a different point of view from any hitherto publiſhed on the diſeaſes of the human ſkin, yet it is intended, that the following pages ſhall contain a conciſe relation of the different opinions which have been advanced, particularly thoſe which were occaſionally delivered by DR. CULLEN, in his clinical lectures of the univerſity of

of EDINBURGH; and with theſe different opinions I ſhall commence, throwing them together ſo as to form a general view of the ſubject, and introducing my own reflections on the whole, as they have occaſionally ariſen in my mind.

I concluded the introduction with obſerving, that the CULLENIAN doctrine ſtill retains, in many parts of its ſyſtem, the old leaven of the humoral pathology. The profeſſor has in a particular manner adhered to it, in treating of the order of impetiginous affections. I ſhall beg leave to extract from his FIRST LINES all that he has ſaid by way of introduction to this order of diſeaſes, under his claſs CACHEXIÆ, as a proof of what I advance.

"I find it difficult," ſays DR. CULLEN, "to give any ſufficiently correct and proper character of this order; the diſeaſes, comprehended under it, depend, for the moſt part, upon a depraved ſtate of the whole of the fluids, producing tumours, eruptions, and other affections of the ſkin. Although it be extremely difficult

"to

" to find a general character of the order
" that will apply to each of the genera
" and ſpecies, I ſhall here treat of the prin-
" cipal genera, which have been commonly
" comprehended under this order, and
" which I have enumerated in my noſo-
" logy."*

The enumeration the profeſſor has alluded to (I am ſorry to obſerve it) is too convincing a ſpecimen of the preſent melancholy ſtate of noſological improvement. The principal genera, treated of by CULLEN, under this head, are SCROPHULA, SYPHILIS, SCURVY, and JAUNDICE. The ſcurvy appears to me to be the only genus which may very properly pertain to this order of diſeaſe, the IMPETIGINES, preſuming that the following pathology of cutaneous affections will well apply to it, as ariſing from a morbid action and condition of the motions and moving powers of the parts concerned.

It is, in my humble opinion, a very injudicious overſight in ſo pure a ſyſtematic writer

* Vol. IV. page 357.

writer as DR. CULLEN, to arrange under the head of impetiginous affections, the ſcrophula, ſyphilis, and jaundice. What an idea of theſe diſeaſes muſt that practitioner take up, when he engages in the ſtudy of medical noſology, who has not been previouſly bleſſed with phyſiological and pathological erudition.

In the firſt place, ſcrophula is not, when attentively reflected on, a cutaneous affection. It ſhould only be conſidered as a diſeaſe of the glandular parts lying under the ſkin, and ſometimes extending itſelf to thoſe of the thoracic and abdominal *viſcera*.

CULLEN has not conſidered this diſeaſe as depending on a peculiar acrimony in the habit, though he has arranged it as an impetiginous affection in his claſs CACHEXIÆ; for he has ſaid, that it ariſes from *a peculiar conſtitution of the lymphatic ſyſtem. This* is agreeable to his opinion, that the conſideration of the motions and moving powers of the animal œconomy muſt form the leading enquiry, in our attempts to inveſtigate the principle, perhaps, of every diſeaſe

diſeaſe, with which the human body may be inflicted. I ſhall therefore preſume to think the ſcrophula to be occaſioned by a depraved or deficient action of the glandular parts, independent of a ſpecific or cachectic virus.

Secondly, The ſyphilis is univerſally known to be contracted by the operation of a ſpecific virus, received by the abſorbent ſyſtem, and afterwards circulated thro' the whole maſs of blood, and at laſt affecting and injuring different parts of the ſolids, topically and variouſly, as well as both externally and internally, at the ſame time, according to ſome peculiar idioſyncracy of the conſtitution, or to ſome particular law of the animal œconomy.

Thirdly, The jaundice is well known to have its origin from a depraved action or condition of the liver, or from obſtruction in the biliary ducts, ariſing from various cauſes, but in a ſecondary way only producing the proper icterical appearances on the ſkin, without a particular local diſeaſed ſtate of it: in fact, *the ſkin* is no way *diſ-*

 eaſed,

eased, but is changed only in color, from the altered ſtate of the blood, tinged from the abſorption of bile.

This is the preſent improved ſtate of impetiginous noſology in this country. PLENK of VIENNA, who has very aſſiduouſly brought together a numerous aſſemblage of cutaneous affections under a noſological view and arrangement, has only noticed the *flavedo icteritia*, as a ſpecies of the *flavedo cutis*, and has referred you to the *icterus* of authors.* I very much lament, that, under the long-experienced eye of our CULLENIAN emendator, ſo great an inconſiſtency as the above ſhould have been ſuffered to remain an evidence of the imperfection and evil tendency of the preſent ſtate of noſological arrangement. I cannot ſee of what uſe the ſyſtems of noſology can be, either to the theory or practice of medicine, if the ſeveral genera, under any one claſs or order, are to be brought together, on an imaginary and ill-grounded relation to one another, when on cautious inveſtigation

* See PLENCKII doctrina de morbis cutaneis, 1783.

inveſtigation they are found to be ſo very oppoſite in their nature. Others probably will not be at a loſs to underſtand; but I cannot help being myſelf of opinion, that noſology ought to be eſtabliſhed on very pure principles, or not be attempted at all.

A few errors in the field of medical arrangement may be of ſomewhat more conſequence to the well-being of the human race, than can ever attend the numerous deficiencies of thoſe ſyſtematic compilations, which have only for their object the ſcience of botany and natural hiſtory. But the botaniſt and zoologiſt are far before us in minute attention and obſervation. The phyſiology and pathology of the animal œconomy ſtill remain, in ſo many reſpects, obſcure and unſatisfactory, that we ought ſcrupulouſly to feel our way in the paths of noſology hitherto pointed out to us; and I fear, that, till our theory as well as practice are much improved, we cannot build any thing like to a noſological arrangement, but on a very feeble foundation.

DERMATO-PATHOLOGIA.

SECTION II.

SCORBUTUS VERY PROPERLY BELONGS TO THE ORDER OF IMPETIGINES.

THE SCORBUTUS is very ſtrictly an affection of the ſkin; as are alſo the ELEPHANTIASIS, LEPRA, FRAMBÆSIA, and TRICHOMA, in CULLEN's noſological claſs of CACHEXIÆ. It has been unheſitatingly attributed by DR. CULLEN to a conſiderable change in the fluids of the body, occaſioned by a particular nouriſhment, introduced by the abſorbent veſſels from *putrid ingeſta*, received into the ſtomach, and *primæ viæ*. TROTTER defends his illuſtrious maſter for adhering to this opinion, contrary to the principle of his general doctrine, and himſelf ſuppoſes, that a preternaturally ſaline ſtate of the blood (if I underſtand him right) is the PROXIMATE cauſe of this diſ-

eaſe,

eaſe, while the phœnomena of it, *apparently connected with the vital or muſcular principle*, are *wholly* to be attributed to the action of the fluids upon the ſolids.*

On the other hand, DR. MILMAN, in his late *enquiry into the ſource from whence the ſymptoms of the ſcurvy and putrid diſeaſes ariſe*, (and he is the only author I have met with, who has indulged in reaſoning on a principle of diſeaſe, conſonant with my own early-conceived ideas on the ſubject, and directly repugnant to BOERHAAVE'S doctrine of the humoral pathology, and which principle I ſhall take the liberty of denominating, and ſpeaking of, as THE MUSCULAR PATHOLOGY,) attributes the morbid alteration of the fluids to a change in the condition of the ſolids, from a weakneſs in the muſcular ſyſtem; but he does not point out what particular muſcular fibres are more immediately concerned in the production of ſcorbutic affections; and he has ſaid nothing farther, reſpecting the condition

* Mr. TH. TROTTER'S obſervations on the ſcurvy. EDIN. 1786, p. 62.

tion of veſſels in the diſeaſe, than that, " they break on the leaſt touch."

DR. MILMAN has conſidered this weakneſs as depending on a gradual diminution of the vital power, the VIS VITALIS of GAUBIUS, and has therefore attempted to eſtabliſh this diminution *in the living principle*, as the PROXIMATE cauſe of ſcurvy. After having enumerated the affections of the muſcular fibre, as pointed out by FONTANA, he ſays, " the ſame affections be-
" ing conſpicuous in the diſeaſe of which
" I am ſpeaking, I think myſelf warranted
" in referring them to the ſame cauſe, and
" to conclude, that the ſcurvy is not a diſ-
" eaſe of the fluids, but of the ſolids;
" that its ſeat is in the muſcular fibre;
" THAT ITS PROXIMATE CAUSE CONSISTS
" IN A GRADUAL DIMINUTION OF THE
" VITAL POWER, by the remote cauſes of
" this diſeaſe; that the torpor, weakneſs,
" &c. obſerved in all the functions, are
" the firſt effects of the PROXIMATE
" CAUSE, viz. THE DIMINUTION OF THE
" VITAL POWER; and that the ſubſequent
" diminiſhed coheſion betwéen the parti-
" cles

" cles of the muſcular fibres, and the ten-
" dency of theſe to putrefaction, are links
" of the ſame chain, and are ultimately
" derived from the ſame ſource."*

I agree with DR. MILMAN fully in the general principle which he has laid down, and am not in the leaſt ſhaken in my attachment to it, by what MR. TROTTER has *ſo diſpaſſionately* advanced in objection to the *authenticity*, as well as the *ingenuity*, of the doctrine. My conviction of its juſtneſs is the more ſtrengthened, from its being ſo conteſted a point; for I feel it certain, from the contrariety of opinions on the ſubject, that one ſide of the queſtion muſt be wrong; and I am impulſively led to think, from the great irritability of our animal machine, that the ſolids are much more likely, even in the production of ſcurvy, to affect and alter the fluids, than the reverſe, particularly when I conſider, that ſo many occaſional and exciting cauſes combine to diſturb its actions ſo com-

* MILMAN's eſſay on the ſource of the ſcurvy, &c. Page 103.

complicated, its affections ſo wonderful, and its impreſſions ſo innumerable.

I muſt however ſo far differ from DR. MILMAN, as to look upon the diminution of the vital power as the PRÆDISPOSITION or the PRIMARY and PRÆDISPONENT GENERAL CAUSE of the coming on of the ſcurvy, and not, as he has conſidered it, the PROXIMATE CAUSE. The meaning of the word *proximate* ſeems to me not, in general, to be juſtly comprehended. If I underſtand the term right, we are to ſeek for proximate cauſes in the immediate ſeat of the morbid affection, whatever be the diſeaſe. In this light DR. CULLEN has made uſe of it in his doctrine of fever. In the ſcurvy therefore we ſhould call that the proximate cauſe, which immediately brings about the morbid condition of the ſkin, and that, I think, will be found to be ſeated in the veſſels of the parts affected. I am of opinion, that the ſcurvy, as a diſeaſe of the ſkin, is occaſioned by a *certain* morbid ſtate and impaired action of the ſyſtem of capillary veſſels. What this ſtate particularly is, it remains for me hereafter to point out.

In

In respect to the misconception of terms, I may go farther, and observe, that even the predisposing and remote causes are not in general well distinguished by writers. There are too many who do not clearly digest the different divisions and terms in a pathological system. In a very late publication on the SCURVY, by a gentleman* of experience, who seems to have received a part of his education at the medical classes of the university of EDINBURGH, I have read a very indistinct account of the application of the terms, *predisposing*, *remote*, and *proximate*, to the various causes. In this most probably useful prophylactic work, the chapters on the different causes of scurvy appear to me so very confusedly put together, that I am certain they would afford very little information or instruction, even to the most attentive student, notwithstanding that the object of the work is highly meritorious.

This author has observed, that "it is of "little consequence in practice what may

* Mr. FRED. THOMPSON, of the royal navy, 1790.

" be the proximate cauſe," after having remarked, that the conjectures concerning it are of a very oppoſite nature; and he almoſt implies, that there may be more than one; (at leaſt the title of the chapter implies ſo;) or that they are different in different caſes, which I cannot admit as poſſible in reſpect to the proximate cauſe of this diſeaſe, tho' its degrees may greatly vary. It is clear, therefore, that this writer has not rightly underſtood the meaning of the term PROXIMATE. It alſo hurt me much to find, that even in this enlightened age, after all the labours and clear reaſoning of our illuſtrious *modern* ſyſtematic DR. CULLEN, a well educated practitioner ſhould give ſo great a latitude to the well refuted, and I might now ſay obſolete, doctrines of the humoral pathology. When it is duly weighed, that our indications of cure are in general founded on the knowledge of the proximate cauſe, it will ſurely be admitted as of conſequence, to eſtabliſh clearly this part of the pathology.

DERMATO-

DERMATO-PATHOLOGIA:

SECTION III.

THE ANATOMY OF THE CUTIS VERA, AND ITS EMANATIONS THE RETE MUCOSUM AND CUTICLE.

TO further convince my reader of the difficulties of the ſubject, it ought to be obſerved to him, that the minute ſtructure and intimate knowledge of the CUTIS VERA, *with its exterior and interior appendages*, do not ſeem yet to be either ſatisfactorily deſcribed from the laborious purſuits of anatomical men, or fully determined on by the reaſonings and conjectures of phyſiologiſts. *They* would, in my humble opinion, merit particular diſtinction, and would with great propriety form a ſeparate branch of phyſiology, under the title

of DERMATOLOGIA: for I very much think, that IT would be conſidered as a very intereſting part of education, in every ſchool of medicine.

From our preſent imperfections on this part of our ſubject, it becomes a very difficult point, to aſſert with confidence the particular morbid ſtate of the ſkin, which conſtitutes the proximate cauſe of each of the different cutaneous affections; but a general one, for all of them may be more readily eſtabliſhed, yet I fear not clearly elucidated. It muſt however be doing right to offer a ſhort anatomical deſcription of the ſkin, agreeable to the obſervations and enquiries of the preſent day, by diſſection and experiment.

In the firſt place, the outſide of the ſkin, or CUTIS VERA, is defended by a thin tranſparent pellicle, which has been called by the various names of EPIDERMIS EPITHELION, cuticle, or ſcarf-ſkin. The ſubſtance of the cuticle is very uniform on the ſide next the cutis vera, but on the outer ſide it ſeems compoſed of a number

number of very fine ſmall ſquammous LAMINÆ, without any appearance of a fibrous or vaſcular texture, except ſome ſmall filaments here and there, by which it is connected to the parts beneath it. Its origin is ſaid to be obſcure, and its generation ſurpriſingly ſudden, which is a ſtrong circumſtance in favour of the opinion of HALLER and others, who have reported it to be derived from an arterious, rather than a nervous, ſecretion. KLINKOSCH has choſen to conſider it as obtaining its origin from the ſource of the cellular membrane. However conſtituted, it has been thought by ſome to ſerve for contracting or forming the extremities of the cutaneous veſſels; for whenever it is ſeparated by abraſion, or otherwiſe, theſe veſſels throw out their ſerous or lymphatic fluids in much larger quantities than ordinarily. It has been further obſerved of the cuticle, that it is naturally conſtructed in blacks of two diſtinct plates, which are more eaſily ſeparated in them than in EUROPEANS.

Secondly,—Under the cuticle there is a ſubſtance of a greyiſh colour, formed with ſomewhat

ſomewhat of a net-work appearance, and hence it has acquired the name of the RETE MUCOSUM, but it is ſometimes called the CORPUS MUCOSUM, and the CORPUS RETICULARE. It is of a ſoft, mucilaginous, and viſcid nature, and fills up the interſtices of thoſe fibres and filaments which run between the cutis vera and cuticula. It is this rete mucoſum which chiefly gives the colour to the ſkin; but it has not been clearly and properly diſtinguiſhed by TURNER and others, in their erroneous anatomical, and phyſiological, account of the CUTIS. HALLER has obſerved of this intermediate mucus, and ſemi-*membranaceous* ſubſtance, that it has of late been commonly called the RETE MALPIGHIANUM, or malpighian mucus, but viſible pores through it, have not been obſerved, analogous to the perforations of a ſieve.

Thirdly,—The cuticle adheres very cloſely to the cutaneous PAPILLÆ under it, and which paſs through the corpus or rete mucoſum; but it adheres ſtill cloſer to this ſemi-*membranous* ſubſtance, the rete mu-

coſum

coſum, which, as is obſerved by ſome, may be eaſily raiſed along with it, and they have very much appeared to be true portions or continuations of one another: yet very different ends are very evidently anſwered by them. The cuticula is the only ſimple and uncompounded part of the human body, and is alſo the moſt uncorruptible in its ſtate of vital exiſtence.

Fourthly,—The CUTIS VERA may be explicitly defined as follows: It is a ſtrong, thick, univerſal covering of the external parts of the body, immediately above the adipoſe membrane, which lies over the muſcles, tendons, bones, &c. forming the external parts of the animal machine. It is compoſed of a cloſe texture of fibres of various kinds, belonging to, or conſiſting of, capillary arteries, ſanguineous, ſerous, and lymphatic, with the correſponding veins to each kind; of nerves; and of the lymphatic abſorbents; with the neceſſary but ſmall quantity of cellular membrane, which binds them all together, forming what may be called the *parenchyma* of the true ſkin. With theſe tubular parts may alſo be named,

named, as internal appendages to the cutis vera, the ſebaceous glands with their ducts, and the bulbs and roots of the hair, both which paſs from the internal ſurface thro' the ſkin. The diſpoſition and connection of the capillary veſſels I ſhall more particularly point out on another occaſion, with perhaps the aſſiſtance of a plate. Other tubes or pores have been mentioned as conducting, independent of the glandular parts, an oily liniment from the adipoſe membrane, in ſome parts of the body.

All theſe minute parts, when taken together, conſtitute a moſt complicated organ, endowed with a high irritability, and indubitably of great importance to the animal machine, both in ſickneſs and in health.

The outer ſurface of the cutis vera has been diſtinguiſhed by its PAPILLÆ, which have been deſcribed as PYRAMIDALES. They conſiſt of arteries, veins, nerves, and lymphatic veſſels, and are knitted together by cellular membrane: the ſenſe of touch has been particularly aſcribed to theſe cutaneous papillæ, and they have been accordingly

ingly obſerved largeſt at the ends of the fingers. The cutis vera has been ſuppoſed capable of contracting and dilating to a ſurprizing degree.*

Fifthly,—Where there are large orifices in the *cutis vera*, leading from paſſages belonging to internal organs, it terminates by being gradually loſt at the apertures of thoſe paſſages; but it has been obſerved, that it then varies both in ſubſtance and appearance; for the mucous follicles, in the cutaneous openings from the internal parts, are very different from the external ſebaceous *cryptæ*, though it may be ſaid, that they are analogous to one another. It has been reported of the learned BONN,

 that

* Profeſſor WRISBERG has obſerved, "that the cutaneous papillæ, no regard being paid to their difference of ſituation, are all formed from the cellular texture, which ſerves them for a foundation, into which ſeveral furrows of veſſels are directed; and the filament of a nerve, which is eaſily found in the tubercles of the tongue and glans penis, when it reaches this tubercle, is *as it were* ſoftened and abſorbed into a ſponge. ALBINUS has elegantly repreſented the diverſity of the papillæ." See HALLER's firſt lines of phyſiology, EDIN. 1786.

that he has thrown much light upon this ſubject.

The inner ſurface of the *cutis vera* is moulded on the outer ſurface of the *membrana adipoſa*; and it appears as if the membranous part of the adipoſe covering, by being extended and mixed with the veſſels, &c. formed, under a ſtate of condenſation, the *parenchyma* of the true ſkin. This membranous part, when free of fat, is known by the name of the *membrana celluloſa*.

Sixthly,—The GLANDULÆ SEBACEÆ, which have been divided into the ſimple and the compounded, are ſaid to be ſeated under the ſkin or *cutis vera*, in the cellular membrane, and to perforate it by their excretory ducts. They have been, by ſome, improperly called SUDORIFICÆ, and are ſaid to be numerous in particular parts of the body, to wit, about the ends of the fingers, the inguina, and behind the ears; the hairy ſcalp, ſkin of the forehead, and edges of the eyelids; the palms of the hands, and the ſoles of the feet.

Others,

Others, again, have made another kind of obſervation, namely, that they are moſt numerous in thoſe parts of the body more immediately expoſed to the atmoſpheric air; and have particularly pointed out as ſuch, the ſkin of the brow, the face, and the ſurface behind the ears, in which, as well as other places, it has been ſaid, that there are a great many of the *compounded* ſort. What anatomical obſervers have meant by *this diſtinction*, I have not been able clearly to comprehend, nor have they properly deſcribed.

They have alſo been conſidered as numerous in thoſe parts, which are moſt frequently liable to being expoſed to much attrition, as the arm pits, the nipples, the groins, the glans penis, the nymphæ, the neighbourhood of the anus, and cleft of the podex, and the hams. They have alſo been deſcribed as frequently ſending out hairs. Though anatomical reſearches have not hitherto demonſtrated them to be every where, yet it has been ſuppoſed, that they are in no part wanting, becauſe the *ſordes*, collected on every part of the outer ſurface

of the body, has been found to be of the ſebaceous kind.

Beſides the ſebaceous unction, as a glandular ſecretion, it has been further ſuppoſed, as has been before alluded to, that another ſort of liniment is poured out upon the *cutis vera*, from the adipoſe membrane itſelf, by its particular pores, independent of the intervention of glands; and that this more eſpecially takes place where the ſkin is much covered with hair, as in the hairy ſcalp, &c. There is no doubt, but that a natural greaſineſs is diſcernible, more or leſs, on the whole ſurface of the human body, occaſioned by ſome ſpecific ſecretion or effuſion, for that particular purpoſe.

Laſtly,—Both the hair and nails may be conſidered as appendages to the ſkin. The former is more particularly connected with the *cutis vera*, having its origin from a little bulb, which has been repreſented as membranous, ſtrong, and vaſcular, and imbedded in the cellular membrane lying under the ſkin. The bulbs have

have been ſometimes called GLANDULÆ PILIFERÆ. They have alſo been deſcribed as ſmall ſpongy bodies at the roots of the hair; and are repreſented by HALLER, as being conſtituted of a bulb within a bulb, the inner one being ſurrounded with blood, from which ariſes the hair, laid over in ſome places with an adipoſe humour. The hair, with its cylindrical ſheaths, enters the cutaneous pore, paſſes through the *cutis vera*, and forces the *epidermis*, into a ſimilar ſheath. The hair thus produced, continues organiſed through its whole length, in a wonderful manner, receiving its nouriſhment from theſe minute and complicated ſources. The bulbs themſelves are ſaid to be furniſhed with importing, and exporting, blood veſſels, with nerves, &c. the hair being as it were the excretory ducts from them.

Many more minute particulars might be noticed as connected with the phyſiology of the *cutis vera*; but the circumſtance of the ſkin, which may be looked on as moſt ſtriking, and which requires to be particularly

cularly pointed out, as immediately interesting to our subject, is its GREAT VASCULARITY, independent of its being the organ of touch, and the source of feeling; and when its vascularity and irritability are taken together, and added to the other circumstances pertaining to its complicated organic structure, they will surely be more than sufficient to convince every one, that the diseases to which the skin is liable, and with which it may be connected, must be unavoidably both very various, and very numerous, particularly when we attentively consider their varieties as depending more on the peculiarity of temperament, and the general state of the body, than any specific difference in the local affection itself.

I may also further remark, that at the same time, that the complex structure and sensibility of the *cutis vera* add much to the difficulty in attempting a new pathological explanation of its diseases, they also render it almost impossible to succeed in any plan for a nosological arrangement, with a view to assist and direct, or vary, our

our treatment of them, according to their different appearances, by clear diagnoſtic principles.

It is however very reaſonable to ſuppoſe, that parts differing ſo much in their ſpecific qualities, conſtruction, and uſes, as the ſebaceous glands, the bulbs of the hair, and the perſpirable veſſels moſt certainly do, ſhould be liable to their ſeparate morbid affections, which I do not think impoſſible, by more attentive obſervation to their local condition, as well as to their general connection with the conſtitutional tendency either to plethora or inanition, fully to inveſtigate and diſcriminate. Notwithſtanding I thus think, I ſtill very much fear, that it ever will be found a moſt difficult taſk to diſtinguiſh impetiginous diſorders by clear pathognomic ſymptoms.

To proceed with our obſervations on impetiginous theory and practice.

DERMATO-

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SECTION IV.

IMPETIGINOUS AFFECTIONS DO NOT SO PROPERLY BELONG TO THE CLASS CACHEXIÆ.

IT ſeems to have been very univerſally ſuppoſed, from the writings of phyſicians in general, that moſt of the caſes of cutaneous affections depended on a degree of acrimony, or impurity in the circulating fluids, thrown upon the ſkin, from its being prevalent in the conſtitution. But the particular nature of this acrimony has been ſcarcely ever known, ſo that they have not been able to follow any particular indication of cure. On this account they have laid down a general one, to wit, the changing the whole maſs of fluids, and they have accordingly

accordingly recommended the dietetic *regimen*, with increaſed evacuations, to be continued for a longer or ſhorter time, as the ſpecial nature of the caſe might ſeem to require.

There is good reaſon to ſuppoſe that this principle of treatment might be very proper on ſome occaſions, when the ſanguineous or plethoric temperaments, either natural, or acquired, from whatſoever cauſe, prevail. Such a conſtitutional ſtate, independent of the local cutaneous affections, is moſt frequently met combined with the impetiginous complaints of children, in whom PLETHORA and irritability often impair the healthful balance and condition of the cutaneous extreme veſſels. On ſuch occaſions I conſider the anti-phlogiſtic treatment, above recommended, as neceſſarily preparatory to that indication of cure, which is to be followed up, with a view of removing, ON THE PRINCIPLE OF A MUSCULAR PATHOLOGY, the proximate cauſe of the local cutaneous affection.

DRAKE has obſerved in his ANTHROPOLOGIA NOVA,* "that the leproſy, from "its obſtinacy in reſiſting all manner of "medicines, may demand the conſideration "of a phyſician, and properly enough (ſays "he) in this place; (treating of the ſkin) "for the root and cauſe may juſtly be "thought to lie elſewhere, yet the viſible "ſeat of it is in the cuticle and ſurface of "the ſkin."

I then expected that he would have endeavoured himſelf to account for the local diſeaſed condition of the ſkin; but he proceeds with the ſubject, in conformity to the old ſyſtems of phyſic, and ſpoils all by his explanation, founded on the idea of the ſaline humours of the blood, and the whole doctrine of the humoral pathology. So little even did the ancients think, that the moving powers of the animal machine could be at all concerned in the production of cutaneous affections, that they went ſo far as to attribute the proceſs of perſpiration itſelf to the condition of the circulating fluids

* Vol. 1. page 15.

fluids, rather than to the altered and varied action of the ſolids, and ſanguiferous ſyſtem of veſſels, immediately connected with this important office of the ſkin.

That ſome cutaneous affections ſeem to depend upon a particular acrimony or *virus*, diffuſed through the volume of the ſanguineous and ſerous fluids, is not to be diſputed. But it ſeems to me ſtill to be of that ſpecial kind, which acts by its ſtimulating effects upon the irritable ſolids, rather than on the common idea of the ſpecific action of a virus on the circulating fluids. Illuſtrative of what I mean, I ſhall beg leave to obſerve, that I think the ſyphilitic *virus* may act in this way, or on this principle, in its production of faucial and cutaneous affections, from the high irritability attendant on the ſyſtem of capillary veſſels. This opinion is not at all repugnant to what I have ſaid in the firſt ſection, that the SYPHILIS is not an impetiginous affection: becauſe I conſider proper impetiginous diſeaſes as not occaſioned by a ſpecific virus in the habit, though an acrimonious humour locally attends them.

Moſt of the chronic eruptions of the ſkin are certainly topical affections, connected with a general debility of the muscular ſyſtem, and immediately dependent on a loſs of balance in the circulation of the external and internal extreme veſſels.

When the illuſtrious CULLEN felt himſelf at a loſs, at ſome of his clinical lectures, in what manner to account for the common cutaneous efflorescencies, and other morbid appearances of the ſkin, he uſually delivered it as his opinion, that they were owing probably to ſome derangement in the balance of the ſyſtem, but he did not offer any particular explanation of this opinion, or expreſſion, or in what particular manner the derangement could be brought about.

The impetiginous affections, which we are almoſt every day meeting with, are, in my opinion, directly cauſed by a topical diſ-arrangement, or morbid action, of the living parts, or moving powers of the ſkin. What this topical ſtate of the *cutis*, labouring under a local diſeaſe, may be, (though the

the conſtitution may more or leſs ſympathiſe with it,) I am in the following pages to attempt more particularly to inveſtigate; laying therefore aſide the opinion of a general acrimony, I ſhall confine myſelf to the conſideration of a partial one, in accounting for which, I fear it will be thought, that I enter very dogmatically into the explanation of this part of my ſubject: yet I have to hope, that the reader will not be fruitleſsly wearied by the reaſoning, but in the end convinced by the facts, that will be brought forward in ſupport of the induction, which will naturally be made from them. When I have been obliged to differ from ſome great authorities, I have ventured to declare it with fear and diffidence: for though I am ſo free as to reaſon for myſelf, I reſpect the opinions of other men. This I have ſaid before,* but it cannot be repeated too often.

It is on the ground of my having ſuppoſed, that chronic cutaneous diſeaſes are only local affections of the ſkin, with which the

* In my treatiſe on ſympathy.

the irritability of the muſcular ſyſtem may however ſympathiſe, that I have been led to diſtinguiſh this ſection, as pertaining to the hitherto improper noſological claſſification of impetiginous complaints. For DR. CULLEN's character of his claſs CACHEXIÆ is the following.

> " Totius, vel magnæ partis corporis ha-
> " bitus depravatus, ſine pyrexia pri-
> " maria, vel neuroſi."

And that of his order of IMPETIGINES, under this claſs, is in theſe words, viz.

> " Cachexiæ, cutem et externum corpus
> " præcipue deformantes."

Now as I am of opinion, that the general habit is not cachectic or depraved, I am diſpoſed to think, that they would more properly come under noſological arrangement in his claſs LOCALES, which he has characterized thus,

> " Partis, non totius corporis, affectio."*

For

* See CULLEN's ſynopſis noſologiæ methodicæ. Vol. II.

For in as far as affections of the muſcular, as well as the nervous, ſyſtem, conſtitute the various genera of that claſs of diſeaſes, while many of its ſpecies are pointed out as local complaints, or ſympathies, from a general affection of the whole ſyſtem, I have a right to think, that the circulating ſyſtem is as much entitled, and is as liable, to its ſpecific local derangements or diſorders, as the nervous ſyſtem, particularly when we reflect, that its function is ſo very much connected with muſcular irritability.

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SECTION V.

SOME COROLLARIES ON WHICH THE NEW PATHOLOGY IS ESTABLISHED.

THE following phyſiological corollaries are to be conſidered as the *data* on which I attempt to eſtabliſh a new explanation of the diſeaſes of the human ſkin, and will very properly precede the enumeration of the generally received doctrines of cutaneous inflammation and eruption.

I. The human body may be compared to an hydraulic machine, being conſtituted almoſt entirely of veſſels, or hollow tubes.

II. The

II. The fluids, tranſmitted and circulated through veſſels, bear a very ſuperior proportion, when compared to the weight of the whole human body.

III. The muſcular fibres conſtitute a very great part of the whole of the ſolids of the human body, and are endowed with conſiderable irritability.

IV. The perfect circulation through the ſyſtems of ſanguiferous and ſeriferous veſſels, depends principally, if not entirely, on the healthful ſtate of the muſcular ſyſtem.

V. The arterious portion of the vaſcular ſyſtem is moſt numerouſly furniſhed with muſcular fibres, which increaſe in proportion as the veſſels become ſmaller, ſo that the ſtructure of the extreme arteries, is at laſt principally, if not entirely, muſcular.

VI. The vaſcularity of the CUTIS VERA is ſo great, that it may be ſaid to form a *compages* of ſmall arteries, and other

veſſels. It is therefore organiſed with as high a degree of muſcular irritability, as any part of the body.

VII. The emunctories of the animal machine are intended to keep up a proper balance between the ingeſta and the egeſta, and they act in proportion to the former. In this light, the ſkin is the principal emunctory of the human body.

VIII. So great is the irritability and living principle of the muſcular fibre, that DEATH itſelf has been conſidered as a ſtimulus to a muſcle, when ITS approaches have been ſlow.

Theſe points of phyſiology, properly viewed, may be ſtamped as the principles, on which the following new pathological doctrine is built, and they are even materially connected with all modern opinions on the ſubject of impetiginous inflammation, and cutaneous irritation.

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SECTION VI.

THE DIVISION OF CUTANEOUS INFLAMMATION INTO PHLEGMONIC, EXANTHEMATIC, AND ERYTHEMATIC.

INFLAMMATION, moſt ſtrictly *cutaneous*, is very evidently of different kinds, and in later times has been divided into two, which have been diſtinguiſhed by the names PHLEGMON and ERYSIPELAS. I think the diviſion will very properly admit of three kinds, viz. the phlegmonous; the exanthematous, or eryſipelatous; and the erythematous. CULLEN ſays, "There are two caſes of ERYSIPELAS, "which ought to be diſtinguiſhed by "different appellations. When the dis-"eaſe is an affection of the ſkin alone,

" and very little of the whole ſyſtem, or " when the affection of the ſyſtem is " only ſymptomatical of the external " inflammation, I ſhall give the diſeaſe " the name of ERYTHEMA; but when " the external inflammation is an *exanthe-* " *ma*, and ſymptomatical of an affection " of the whole ſyſtem, I ſhall name the " diſeaſe ERYSIPELAS."*

To form a nice diſtinction between theſe two cutaneous affections, is of the firſt conſequence in practice; and I think, from their ſpecific difference, they ſhould more properly be conſidered as ſeparate GENERA, than as only different *ſpecies* of an *eryſipelatous* affection. This has led me to propoſe the diviſion of inflammation, ſtrictly cutaneous, into the above three kinds. For an *eryſipelas* chirurgically treated, when it ought to have been medically enquired into, has proved of ſerious conſequence, at all times, to too many of the human race.

The

* Firſt lines. Vol. 1. page 255. 1784.

The *eryſipelas* is to be conſidered as an eruptive affection from a conſtitutional cauſe, and therefore, probably, from a ſpecific virus, and accompanied from the firſt with an idiopathic fever. But the erythema is only the effect of external injuries, or irritating matters applied to the ſkin; and if at all accompanied with fever, it is to be conſidered as of the ſymptomatic kind, and is often the effect of external applications increaſing the local inflammatory affection, from the great irritability of the ſkin, peculiar to ſome conſtitutional temperaments.

I have lately known (and I believe it is no uncommon caſe) external treatment ſo aggravate an erythematous affection from a ſlight outward injury, as to be followed by conſiderable cutaneous inflammation, and terminate in a phlegmonic affection, which however did not prove critical, for while the moſt innocent external applications were continued to be applied, the cutaneous inflammation went on ſpreading:—Immediately on their being diſcontinued, the inflammation began to abate, and the

cutis

cutis vera daily, but gradually, tended to its natural ſtate. This was an affection of the back of the hand, producing conſiderable irritation as far as the OLECRANON. I have ſeen the ſame progreſs of external inflammation, under ſimilar chirurgical treatment, in other parts of the body, ſeveral times before, but I did not then know how, or think of explaining it.

I learn from MR. CHRISTIE's paper on the pemphigus, in the tenth volume of the LONDON MEDICAL JOURNAL, and in ſupport of this explanation of erythema I mention it, that it is the opinion of MR. J. HUNTER, " that the ſkin and cellular " membrane are extremely ſuſceptible of " the ſuppurative ſtage of inflammation, " but that internal and deep ſeated parts " reſiſt it long." Hence it is further obſerved, " that extraneous matters taken " into the ſtomach, though they irritate " and inflame, ſeldom occaſion ſuppura- " tion; and when by their acuteneſs or " gravity they pierce through, as in the " caſe of pins and bullets, the ſuppura- " tion does not take place till they come

" near

" near the ſurface of the body." Theſe are curious circumſtances, well worth reflecting on; and MR. CHRISTIE remarks, that " the wiſdom of this law of nature " is evident; for if every irritating cauſe " could produce ſuppuration in the inter- " nal parts, as eaſily as it does at the " ſurface, a moſt numerous and fatal train " of evils would be the conſequence."

This phyſiological fact ſtrikes my mind at preſent with an idea, that the great uſe of the ſympathetic connection between the internal and external extreme veſſels, (as will be more noticed hereafter) in the production of ſome impetiginous affections, may be to guard, as a law of nature, a *vis conſervatrix*, the internal organs and functions from the more ſerious conſequences of internal ſuppurative effects, and inteſtinal eryſipelatous affections, on the principal of their being relieved by whatever promotes and excites extraordinary cutaneous action. We often witneſs the ſalutary effects of an eruptive fever, in particular feeble temperaments.—The variola, either natural, or by inoculation, has

has been frequently known to improve the health of weakly children; and a cutaneous diſeaſe has been ſucceſsfully given, as the curative means of an internal diſeaſed habit, joined to a pulmonic affection.

CULLEN appears to me to have contradicted the juſtneſs of his own diſtinction between theſe diſeaſes, when he ſays, "that an *erythema*, ariſing from an *internal* "*cauſe*, is occaſioned by an acrimony "poured out on the ſurface of the ſkin, "under the cuticle."* Though I believe, that an erythematic affection may ariſe from a local irritation, without either an external injury, or a conſtitutional virus, yet I am diſpoſed to conſider ſuch a caſe as rather of the eryſipelatous nature, produced by a local acrimony of the fluids, from a morbid or impaired action of the veſſels of the part affected, and probably connected with ſome conſtitutional bodily derangement. If I am right, it therefore follows, that a true *eryſipelas* may be of two ſpecies, the one ariſing from a conſtitutional irritation

* Ditto of the firſt lines. Page 258.

tion determining itſelf to the part affected; tne other from a local acrimony, cauſed by a debility or morbid affection of veſſels.

In the true phlegmonic inflammation an acrimony is not commonly evident, and every phlegmonic eruption may be conſidered as a ſmall abſceſs.

I ſhall make a few further remarks on the object of this diviſion, as explanatory of cutaneous inflammation; but till the ſubject is better underſtood, and better divided by clear pathognomonic ſymptoms, it will be prudent to uſe the words *eryſipelatous*, and *erythematous*, as *ſynonimous* terms; for authors and noſologiſts apply them indiſcriminately to affections, which bear a ſimilitude to one another, and probably the ſpecific qualities of each are ſometimes combined in the ſame affection.

The PHLOGOSIS, or phlegmonic inflammation, has been deſcribed by writers in general, as occaſioned by an affection of veſſels on the internal ſurface of the ſkin, and communicating with the lax ſubjacent

cellular membrane; affecting therefore immediately the ſebaceous glands, and the bulbs of the hair: but when the inflammation is erythematic, or, as is frequently denominated, eryſipelatous, it is a more ſuperficial affection, and is confined to the PAPILLÆ, and to the veſſels on the external ſurface of the ſkin, or *cutis vera*, communicating with the rete mucoſum. In the firſt kind of cutaneous inflammation the ſerum effuſed is generally convertible into PUS, forming large puſtules or boils; in the latter ſmaller veſſels rupture, and pour out a lymphatic or thinner fluid, which, by ſeparating the cuticle, forms the veſicular and ſquammous appearances on the ſkin, attendant only on this kind of inflammation.

Local inflammatory affections of the ſkin, *ſine febre idiopathica*, ſeem to me to be very improperly arranged in CULLEN's noſological ſyſtem; for "when the diſeaſe ERY-"THEMA is an affection of the ſkin alone, "and very little of the whole ſyſtem," the character of his ORD: PHLEGMASIÆ, in his claſs, PYREXIÆ, will not at all apply to it.

ORD:

ORD: II. PHLEGMASIÆ.

" Febris ſynocha; phlogoſis; vel dolor
" topicus, ſimul læsâ partis internæ func-
" tione; ſanguis miſſus, et jam concretus,
" ſuperficiem coriaceam albam oſtendens."

Notwithſtanding which, he has placed ERYTHEMA, as a ſpecies of PHLOGOSIS, under this order.

For the full ſatisfaction of the reader I ſhall extract the character of PHLOGOSIS, as a genus of the ORD: PHLEGMASIÆ, with the characters of its two *ſpecies*, from the *ſynopſis* CULLENI, and leave him to make what further comment he pleaſes.

G. VII. PHLOGOSIS.

" Pyrexia, partis externæ rubor, calor, et
" tenſio dolens." Species ſunt,

I. Phlogoſis *(phlegmone)* rubore vivido; tumore circumſcripto, in faſtidium plerum-

que elevato, ſæpe in apoſtema abeunte; dolore ſæpe pulſatili.

II. Phlogoſis *(erythema)* colore rubicundo, preſſione evaneſcente; ambitu inæquali, ſerpente; tumore vix evidente, in cuticulæ ſquamulas, in phlyctænas vel veſiculas abeunte; dolore urente.*

His APOSTEMA, as the *phlogoſis ſequela*, is thus deſcribed,

" Poſt phlogoſin, remittentibus dolore
" et pulſatione, tumor albeſcens, mol-
" lis, fluctuans, pruriens."

And ABSCESSUS, and PUSTULA are the ſynonyma of the authors, and noſologiſts, BOERHAAVE, VOGEL, LINNÆUS, &c.

When the *lymph* of the blood is effuſed, as in the caſes of erythematic inflammation, it is in courſe of time abſorbed, and then the affection is ſaid to terminate by RESOLUTION. But the *ſerum*, under a ſtate of ſtagnation

* Synopſis noſologiæ methodicæ. Edit. tert. 1780.

nation in the cellular ſubſtance of a phlegmonous inflamed part, may ſuffer ſuch a particular alteration, as the effect of the inflammatory heat, as to have its *gluten*, or coagulating lymph, changed into a milky, or cream-coloured, bland, fluid, which is known by the name of PUS; and thus is formed the *apoſtema poſt phlogoſin*; and this inflammation is ſaid to terminate in SUPPURATION.

I have a ſuſpicion however, that this alteration may ſometimes take place, even in the inflamed diſtended veſſels, from their high muſcular irritability and action, without ſuppoſing that an effuſion from, or rupture of, them muſt neceſſarily happen. This becomes, in my opinion, properly a parenchymatous inflammation of the *cutis vera*, and though it may ſometimes, does not often, terminate in *apoſtema*; I think it is, ſtrictly, this *ſpecies* of PHLOGOSIS *(erythema,)* which terminates in GANGRÆNA, as characterized by CULLEN.

" Poſt phlogoſin, pars livens, mollis,
" parum ſenſibilis, ſæpe cum veſiculis
" ichoroſis."

The

The PHLOGOSIS *(phlegmone)* from its original nature, muſt always, when properly managed, terminate in APOSTEMA; but ſo much depends upon ſkillful local management in cutaneous inflammation, and ſetting out with juſt diagnoſtic principles, that for want of this judgment, I have repeatedly ſeen a pure idiopathic *erythema* terminate in the PHLOGOSIS *(phlegmone.)* In like manner, I ſhould ſuppoſe a phlegmonous inflammation, injudiciouſly managed, might be diſpoſed to terminate in gangrene.

When gangrene, from violent heat and inflammatory action of the vaſcular parts, terminates in SPHACELUS, I ſhould ſuppoſe that the ſtagnant fluids not only become putrid, and ſpread the miſchief, but that a perfect atony of the moving powers of the part affected, as the *ſequela* of their high inflammatory excitement, is the principal cauſe of this vitious and deadly ſtate, which can only be ſtopt by ſtirring up a ſufficient action in the moving powers which remain to reſiſt it. CULLEN deſcribes this third *ſequela* of PHLOGOSIS thus,

SPHACELUS.

SPHACELUS. " Poſt gangrænam pars " nigricans, flaccida, facile lacerabilis, ſine " ſenſu vel calore, et cum fœtore carnis " putridæ; vitio celeriter ſerpente."

Theſe various and ſerious changes in inflammations, ſtrictly cutaneous, prove how great the irritability, and how important the vaſcularity, of the CUTIS VERA muſt be, and how much their influence and their natural powers ought to be attended to, in regulating ITS natural circulation, and in endeavouring to reſtore it under a diſeaſed ſtate of the ſkin.

I ſhall conclude this ſection with obſerving, that though acrid matters externally applied, or ariſing from an internal cauſe, have been ſuppoſed to be the ſtimulating ſource of erythematous affections; yet ſuch an inflammatory ſtate can only be produced on the internal parts, namely, through the whole courſe of the primæ viæ, " where " the ſurfaces are covered with an *epithe-* " *lion*, or membrane analogous to the cu- " ticle." Such are the apthous inflammations of the mouth and fauces, &c.

DERMATO-

DERMATO-PATHOLOGIA.

SECTION VII.

CUTANEOUS DISEASES ARE MOST PROPERLY IN THE PROVINCE OF THE PHYSICIAN.

SINCE cutaneous inflammations are conſidered as either ſymptomatic of a general affection of the ſyſtem, or, when idiopathic, as liable to be attended with a conſiderable ſympathic irritation of the whole habit, it is not much to be wondered at, that ſo many practitioners ſhould be (and I will add juſtly) of opinion, that they ought more frequently to fall under the province of the phyſician than of the ſurgeon. Why was not DR. CULLEN of this opinion?

I believe

I believe it muſt have ariſen from the MISTAKEN NOTION of their belonging to the latter, that external applications have been ſo much uſed and recommended by all practitioners, and almoſt wholely relied on in ſuch caſes, notwithſtanding they are ſo often intimately connected with the general temperament and habit of the body. I am afraid that they have been too frequently uſed, not only without ſucceſs, but with an aggravation of the diſeaſe, and ſometimes to the laſting detriment of the conſtitution, and, I wiſh I had not lamentable reaſon to add, in the end the death of the patient.

IT has been avowedly THE REASON aſſigned by DR. CULLEN,* for his having paſſed over ſo many of the impetiginous affections in a curſory manner, of which he ought to have fully treated, and which he muſt have known to have been frequently connected with a deranged ſtate of the conſtitution.

* Vol. 1. page 256, of his firſt lines.

I ſhould think it a fortunate revolution in the mode of practiſing the HEALING ART, if the medical and chirurgical departments were more diſtinctly circumſcribed, or even completely ſeparated, and if the practitioners of both never copied after, or interfered with, one another; though I believe that it is very rare, *that the* PHYSICIAN *ever meddles with the province of the* SURGEON.

They ought to be conſidered as two naturally divided, and equally reſpectable, profeſſions, each ſufficiently difficult and important to become of itſelf alone the proper and fixed object of one man. Such a change would be for the intereſt of both characters, as well as for the improvement both of the art of ſurgery, and the ſcience of medicine. We then ſhould meet oftener than we now do.

I have ſometimes heard it obſerved in common medical converſations, when the merit and utility of the different branches of the profeſſion became the ſubject of a partial controverſy, that the SURGEON generally

nerally looks upon HIS profeſſion as a POSITIVE ART, and on *mine* as a *negative* SCIENCE. I have always on theſe occaſions ſmiled, and when I could take the liberty, have politely thanked the promulgator of ſo liberal an opinion. On one occaſion I could not contain myſelf, but was indignantly led to admit, that there was a great deal of *poſitive art* in the practice of ſurgery, and at the ſame time I obſerved that it was the eaſieſt to practice, and *ſeemed* to do the moſt good: but I alſo, with due deference, requeſted of this advocate for the pre-eminence of his chirurgical character, that he would ſtill uſe his beſt endeavours to improve HIS BRANCH, as poſitively and as ſeriouſly as I ſhould endeavour to improve MINE.

It is plain that theſe obſervations are intended to apply only to ſome few chirurgical characters, whoſe daily habits and purſuits have at all times been directed with a view to ſurgery alone, and whoſe education as well as practice have principally tended to that object, and who (cannot do leſs than) declare that they are not engaged

in the practice of *medicine*.—Is it reasonably and patiently to be submitted to, and undeniably admitted, that they, *under such circumstances*, can be as fully acquainted with the serious and important connection of cutaneous and other diseases, with the general physiology and pathology of the human body, as the physician, who naturally gives all his attention to medical objects, and the studies connected with them: at least their practice does not carry with it the appearance of such extensive information. I cannot even admit, that a perfect knowledge of COMPARATIVE ANATOMY can ever make a physician. I might as well pretend to the knowledge of the proper treatment of a wound, or the amputation of a limb, because I may have a tolerably correct idea of the anatomy of the parts concerned.

It has always struck my mind as a professional impropriety, that the PHARMACOPEIA of the ROYAL COLLEGE OF PHYSICIANS should contain the various preparations of ointments, plasters, &c. and all the other external

external applications pertaining to the branch of ſurgery. Such would appear to me to become more properly the object of the CORPORATION OF SURGEONS, as an equally chartered body of practitioners, with privileges and immunities of their own.—There would then be the proper DISPENSATORIUM CHIRURGICUM, and a *pharmacopeia* with that view would be conſulted by medical practitioners, when there was a propriety, as well as a neceſſity, to have recourſe to it.—Whatever may have been the origin of the *emplaſtrum* and *unguentum cantharidis*, &c. they even would very properly come under this propoſed regulation, without any affront to the dignity of the medical juriſdiction.

I could make ſeveral further remarks on theſe ſubjects, collected from attentive obſervation, and ſome experience; but it is no pleaſure to me to dwell longer on them, and I have been induced to ſay what I have penned, FROM NO OTHER MOTIVE, than the intereſt I take, in whatever concerns the HONOR of every branch of the HEALING ART, feeling naturally anxious that MY

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OWN ſhould ſupport its RESPECTABILITY. I therefore ſhall cut it ſhort with the hope, that every FREE MAN will think I have done no more than my duty, and that every PROFESSIONAL MAN will repeat the following MEMORANDUM from the eighth volume of the BEE, with a favourable acceptation, and with its proper application to the ſubject.

> " Men may be convinced, but they can-
> " not be pleaſed againſt their will;
> " but though taſte is obſtinate, it is
> " variable, and time often prevails
> " when arguments have failed."

I THINK NO GOOD MAN CAN BE OFFENDED WITH ME FOR MY FREEDOM IN OFFERING THESE PROFESSIONAL OPINIONS, AFTER HE HAS ATTENTIVELY AND LIBERALLY CONSIDERED THE WHOLE I HAVE SAID, AND THE INTENT WITH WHICH I HAVE SAID IT. I NEVER SHALL BE MYSELF DISTRESSED OR ANGRY AT BEING DIFFERED WITH; BUT ON THE CONTRARY PLEASED, IF I AM FAIRLY AND HANDSOMELY CONVINCED THAT I HAVE BEEN IN AN ERROR. LET EVERY ONE REMEMBER,

" HUMANUM EST ERRARE."

DERMATO-

DERMATO-PATHOLOGIA.

SECTION VIII.

THE SPECIFIC LOCAL EFFECTS OF THE OPERATION OF THE REMOTE CAUSES CONSTITUTING THE VARIETIES OF CUTANEOUS DISEASE.

IT will, in the next place, be right to consider what the different parts of the skin are, which may become affected under different diseases, and I find, that pathologists have referred the operation of the remote causes, in the production of them, to one of three principles.

First,—As occasioning a depraved secretion of the SEBACEOUS GLANDS.

Secondly,—As occasioning a morbid state of the BULBS OF THE HAIR.

Thirdly,

Thirdly,—As occaſioning a morbid condition of THE VESSELS on the external ſurface OF THE SKIN.

Introductory to the few arguments which may be brought forward in ſupport of each diviſion, I ſhall obſerve, that an acrimony may be preſent in the ſkin, which did not pre-exiſt in the maſs of blood; and in the next place, I ſhall conſider it as granted, (or let it for the preſent only be preſumed,) that the ſecreted fluids are actually produced in the ſecerning organs; that they in them meet with ſuch circumſtances and alterations in the moving powers, as occaſionally change their nature; and that they are entirely generated in theſe organs. It therefore follows, that when any morbid ſecretion affects and injures the healthful ſtate of the ſkin, we are not to ſuppoſe, that the acrimonious humour pre-exiſted in the blood itſelf.

They, who are of opinion, that it is very evident, that the ſtate of the ſecreted fluid muſt be dependant upon the ſtate of the ſecreting organ, argue thus. Is it reaſonable

reaſonable to ſuppoſe, that, becauſe the acrimony of the bile may be increaſed, in conſequence of a ſtimulus, this acrimony præ-exiſted in the whole of the circulating fluids; or can it be for a moment imagined, that the acrimony of imperfect mucus is owing to the general condition of the ſanguineous and ſerous fluids? From this analogy they think it reaſonable to conclude, that the ſecretions of the ſkin are changed, without any previous acrimony of the blood.

As the different minute parts connected with the *cutis vera* may occaſion, when diſeaſed, the varieties of impetiginous affections, which are every day embarraſſing us, I ſhall next proceed ſhortly to explain the particular change in each part, as ſuppoſed to be their condition when morbidly affected; and I ſhall endeavour to illuſtrate them with an example or two. With regard therefore to the

First,—*The depraved ſecretion of the ſebaceous glands.*

The ſuperficies of the body, or *cutis vera*, has been ſuppoſed to be well defended from the ordinary acrimony of the perſpirable matter, by an unctuous or *oily* ſecretion furniſhed by the ſebaceous glands. From any morbid ſtate or action of theſe glands, either in not at all furniſhing their neceſſary exudation, or affording it in ſo thin a ſtate, that it is readily waſhed off, the ſkin becomes affected by either the ſebaceous or perſpirable acrimony, and in this way may often be inflamed. Such a morbid ſecretion, productive of erythematic, and ſometimes of puſtular inflammation, according to conſtitutional temperament, very frequently happens to children behind the ears, where the ſebaceous glands have been diſcovered to be very numerous.

It may further be ſuppoſed, that the ducts from the ſebaceous glands, which paſs through the *cutis vera*, may alſo become affected at their extremities, by the irritating quality of the perſpirable fluid in certain ſtates of the habit, particularly when the inflammatory diatheſis prevails to any conſiderable degree. This may be the reaſon

reaſon why we ſo often meet with inflammatory eruptions as the immediate conſequence of ſweating, eſpecially when the ſweat is in any way confined to the part, or even effuſed in any conſiderable quantity.

The miliary eruption alſo has been obſerved by DR. CULLEN to be the effect of ſweating, and has by him been conſidered as the impetiginous effects of a matter, generated, under particular circumſtances in the ſkin itſelf, and not before prevailing in the maſs of blood. I was glad to find that HE had once admitted, that a cutaneous eruption might be the conſequence of cutaneous action; and therefore the miliary eruption may be, according to his opinion, the produce of an inordinate ſecretion of the ſebaceous exudation, from the increaſed action of the glands themſelves.

It however ſeems to me, from the antecedent ſymptoms of the miliary eruption, to wit, the anxiety, ſighing, and the pricking, "AS OF PIN POINTS," in the ſkin, to be occaſioned ſolely by a morbid action

of the capillary extreme veſſels, as they are moſt likely to be attended, from their anatomical ſtructure, with THAT PARTICULAR SENSATION. Theſe obſervations however would have come with more propriety under our third head or diviſion, in this ſection. In reſpect to the

Second.—*The morbid condition of the bulbs of the hair.*

It muſt be admitted, that the hair has a ſource of nouriſhment as well as the other parts of the human body. The moſt probable one appears to be from the veſſels in contact with the roots or bulbs of the hair, which, by ſome peculiar organization and action, furniſh a moiſture, that becomes neceſſary to their growth. This muſt appear to every one ſufficiently evident, from the ſtate and variety of the hair in different temperaments. It has alſo been obſerved, that it ſhrivels, and changes colour, or falls off, according to peculiar idioſyncracy, and under the different circumſtances of age or conſtitution, when this exudation from the

crinial

crinial veſſels, or whatever other ſource of the moiſture there may be, is dried up.

A diſeaſed condition or action of the veſſels, conſtituting or ſupporting the bulbs of the hair, may therefore afford the irritating effuſion, which ſometimes forms itſelf into the incruſtations covering the cutaneous affection, and ſometimes exactly encircling the hair, particularly when of the herpetic kind. We have a ſufficient proof of a ſpecies of this diſeaſe in the caſe of the TINEA CAPITIS; but we alſo frequently meet with an impetiginous affection of the CAPILLITIUM, accompanying the univerſal herpetic and other eruptions, at all periods of life.

Some of the leprous affections of this country are probably of the ſame nature, but varying in degree, and differing from herpetic eruptions, according to the operation of various external remote cauſes, the manner of dieting, &c. as well as from the nature of the conſtitutional temperament itſelf. In fact, it is no uncommon thing to meet with both leprous and herpetic eruptions

eruptions at the ſame time, in one and the ſame perſon, owing, I think, to a difference in the ſtate of the circulation at the parts ſo differently affected.

What ſhare in the production of *capillary* or crinial diſeaſes the pores, affording the ſuppoſed liniment from the adipoſe membrane, may have, I ſhall not take upon me to conjecture.

Before I proceed to the full conſideration of the third diviſion of the diſeaſed condition of the ſkin, to wit, the ſtate of its veſſels, I muſt beg leave to have it particularly obſerved, that the morbid ſtate both of the crinial bulbs, as well as of the ſebaceous glands, may be very often, and perhaps is in general owing to a deviation from the healthful ſtate, in the ordinary effuſion of the perſpirable fluid, ſo that when the acrimony of it is ſuper-abundant, from ſome peculiar diſeaſed action of the ſyſtem of capillary veſſels in the *cutis vera*, it may then affect the condition of the ſpecific ſecretions, of which I have been ſpeaking.

It

It may be further noticed, as claiming the ſtricteſt attention and obſervation, that, from the cloſe connection of all theſe minute parts with one another, it becomes extremely difficult to diſtinguiſh their ſeparate morbid affections from each other; but I am much inclined to think, that there is an eſſential difference in the diſeaſes, which each is liable to.

I am now led to conſider the condition, organization, and action of the ſuperficial and extreme veſſels of the arterious ſyſtem, ſo immediately concerned in the impetiginous condition of the ſkin: and this would ſeem to demand the moſt cautious enquiry and inveſtigation.

Third,—*The morbid condition of the cutaneous or perſpirable veſſels.*

It will be very proper firſt to take notice, that all effuſions made under the cuticle, or into the cells of the adipoſe membrane connected with the rete mucoſum and *cutis vera*, either by exhalation or rupture of veſſels, are ſuppoſed to originate from the ſe-

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rous or lymphatic part of the blood, as the *pabulum* of the perſpirable fluid: for the two ſources of impetiginous affections already mentioned, to wit, the ſebaceous glands, and the bulbs of the hair, are rather to be conſidered as ſecerning organs with their excretory ducts, acting as conduits through the CUTIS VERA and cuticle, and are not therefore to be looked on as, in an ordinary way, capable of occaſioning effuſions under it.

It has been the opinion of ſome authors and pathologiſts, that the perſpirable matter can of itſelf alone be the cauſe of impetiginous acrimony; and they have confirmed themſelves in this opinion from obſerving, that it has ſo readily produced cutaneous eruptions, when it has been in exceſs, and from its producing them in thoſe parts moſt readily, from whence it could not eſcape, becauſe various applications, as coverings to the ſkin, detained it in theſe parts, ſuch as the ordinary veſtments, plaiſters, &c.

It has been further obſerved by them, as noticed before, that the perſpirable fluid may

may be, on ſome occaſions, a matter capable of converſion into pus, and on other occaſions a matter not convertible into pus. When it is the former, they ſuppoſe inflammation always to attend, either from an inherent, or an outward occaſional, cauſe; and this they have exemplified, as an inſtance from a conſtitutional cauſe, in the caſe of the eruption of the ſmall-pox. If it be of the latter kind, then veſications will be fabricated on the outward ſurface of the CUTIS VERA, as in thoſe ſpecies of cutaneous diſeaſe, the PEMPHIGUS and ERYSIPELAS.

The PEMPHIGUS is a rare diſeaſe, and has been conſidered by DR. CULLEN as a ſymptomatic affection, which he has noſologically arranged in the order of EXANTHEMATA, under his claſs PYREXIÆ. But if we are to give credit to the obſervations of ſome writers on this diſeaſe, it would appear to be ſometimes an idiopathic affection, with which the conſtitution may ſympathize, attended with an eruption of a very uncertain duration, and appearing very irregularly on different parts of the body, for many ſucceſſive days, and fre-

quently with ſo little of a general affection of the ſyſtem, that it might almoſt come under the character of CULLEN's *erythematic* affection of the ſkin, in that particular point of view.

This opinion is ſtrengthened from their having taken notice, that the veſicles of the pemphigus have been obſerved to vary much; no doubt according to the temperament and ſtate of the habit. They have therefore been deſcribed as ſometimes pouring out a bloody, and ſometimes a ſlightly purulent, ICHOR, though they in general only contain a ſerous fluid. Which is properly the ſymptomatic, and which the idiopathic, kind, I am not yet prepared to ſay.*

I have received an impreſſion on my mind, from conſidering the rarity and variegated account of this diſeaſe, that the PEMPHIGUS may be attributed to a *peculiar idiocyncracy* of the CUTIS VERA; as a proof of which, it is ſometimes the *ſequela* of

* Read DICKSON and CHRISTIE on the PEMPHIGUS, in vol. IX. and X. of the LONDON MEDICAL JOURNAL.

of the low fever, a diſeaſe ſo common, that this eruption would be oftener met with, if it did not depend upon ſome cutaneous idiocyncracy. It has however been propoſed by MR. CHRISTIE,* to be divided into the *ſimplex* and *complicatus*.

If I ever ſhould feel noſologically inclined, I ſhould propoſe its being divided into the PEMPHIGUS *febrilis*, and *non-febrilis*, *or ſymptomaticus et idiopathicus*; for I ſhould conſider the eruption attending the firſt ſpecies as ſymptomatic of a general affection, and debility of the circulating ſyſtem, and the ſecond ſpecies as an idiopathic diſeaſe, ariſing from a local derangement, or morbid alteration in the action of the cutaneous veſſels; but I believe the *pemphigus febrilis* is of the two kinds moſt frequently obſerved.

When bliſters are formed on the ſkin without previous inflammation, or evident acrimony, as the veſcicles of ſome caſes of the pemphigus may be looked on to be, I

* See CHRISTIE on the PEMPHIGUS, in vol. x. of the LONDON MEDICAL JOURNAL.

am much diſpoſed to imagine, that ſuch ariſe either from a defect in the cuticle itſelf, or a ſimple atony at the extremities of the cutaneous veſſels, in ſome way or other diſturbing its connection with the rete mucoſum: for ſuch is the connection between theſe veſſels and the cuticle, according to the doctrine of arterious nutrition, that a fault in the office of the former, and in the conſtruction of the latter, may aid, if not entirely occaſion, the formation of PHLYCTÆNÆ or VESICULÆ, which will contain either a ſerous or a lymphatic fluid: but all this I ſhall endeavour to make clear in a future part of my eſſay.

The ERYSIPELAS is much better known, and is attended, according to CULLEN, with an exanthematous eruption joined to a ſynocha, but which affection of the ſkin is characterized, by this accurate noſologiſt, as a PHLOGOSIS *erythema*.* There appears to me ſome inconſiſtency in this claſſification and deſcription, *a ſomething* like a ſeeming contradiction; for he ſets out eſtabliſhing

* See his ſynopſis, G. XXVI. of his order exanthemata.

bliſhing a principle of diſtinction between *erythema* and *eryſipelas*, and yet characterizes the latter thus, " In aliqua cutis parte, " ſæpius in facie, phlogoſis *erythema*." Theſe nice diſtinctions muſt puzzle the moſt reflecting pathologiſt, and expert practitioner.

I have before obſerved, that there are probably two *ſpecies* of the ERYSIPELAS; viz. an idiopathic and a ſymptomatic.

As the VAROLA has been mentioned as an example from a conſtitutional cauſe, with the perſpirable fluid convertible into PUS, it will be worth while here to obſerve, that the greater number of puſtules in the ſmall-pox has been attributed by DR. CULLEN to an inflammatory ſtate of the whole ſyſtem, and more particularly of the ſkin. But this will not explain every caſe of the ſmall-pox: for what is the principle which conſtitutes the difference between the diſtinct, and the confluent ſort?

It certainly is not occaſioned by any ſpecific difference in the virus. This is very clearly

clearly proved by the various conſequences of inoculation, in caſes where the ſame virus has been made uſe of. It muſt therefore depend upon ſome conſtitutional cauſe, and does moſt probably ariſe from the different mode of action, or condition, of the cutaneous capillary veſſels, either from a difference in the conſtitution of the patient, or from a peculiarity in the nature of the fever, occaſioned by ſome unfavourable ſtate of the perſon to whom the variolous matter has been applied.

I believe it will be found, on minute inveſtigation, that the varieties of *exanthematous* affections are more probably owing to the ſpecific difference in the irritability of the ſkin of different people, joined with the mode of action of various occaſional cauſes, than to any ſpecific difference in the nature of the virus, or eſſential idiopathic alteration in the ſtate of the whole circulating fluids.

It has been conjectured by ſome writers on the diſeaſes of the ſkin, that the LYMPH of the blood, or perſpirable fluid, may be detained

tained under the cuticle by the adhæſion or introduction of any foreign matter at the extreme ſuperficies of the ſkin, which foreign matter might occaſion an obſtruction of it, at its paſſage through the extremities of the perſpirable veſſels, or in ſome way or other render it too thick to paſs through the cuticle, and that therefore it muſt neceſſarily become the cauſe of its being effuſed under it.

But when we well conſider the complicated organization connected with the cuticular ſurface of the human body, either for the admiſſion of ſomething from the atmoſphere by the operation of the abſorbent veſſels, or for the emiſſion of what may be excrementitious in the habit, through the function of the exhalent extreme arteries, it will be found very difficult to explain the mode of action of external offenſive matters, when applied to, or admitted by, the ſuperficies of our animal machine.

Among ſuch local remote cauſes may with propriety be mentioned ordinary uncleanlineſs, the negligent uſe of oleaginous matters,

matters, &c. as productive ſometimes of impetiginous eruptions: and they may be reckoned among the common cauſes of obſtructed perſpiration, in the production of that kind of cutaneous eruption, which occurs moſt commonly, when the inflammatory acrimony, or irritation, prevails in the habit; as under ſuch circumſtances the ſyſtem of capillary veſſels are univerſally moſt irritable, and therefore in the ſkin moſt readily affected.

Children become particularly ſubject to eruptions from theſe cauſes, which moſtly affect their hands and feet, and which are further promoted by theſe parts being frequently for a long time wet, and unattended to.

I have generally noticed, that both uncleanlineſs and oily applications have aggravated almoſt all kinds of inflammatory eruptions, and cuticular excoriations, particularly thoſe of the erythematous and erysipelatous nature. On what principle ſuch matters offend the cutaneous circulation and ſecretions may admit of diſpute, but

but I cannot help thinking, that in ſome kinds of impetiginous affections, the ointments, which are ſo commonly made uſe of, tend to relax the diſeaſed veſſels of the part too much, after the fluids, which ſhould have circulated in them, have acquired their local and noxious acrimony. I even ſuſpect that oily applications, from the heat of the inflamed part, may acquire a rancid quality, and thereby give additional irritation to the eruptions and cuticular excoriations. If they ever do good, it is in particular conſtitutions, by their defending the inflamed and tender parts from the action of the atmoſpheric air.

But in moſt caſes of cutaneous affections, no ſuch occaſional cauſes as the preceding can be ſuppoſed to operate in producing an impetiginous effuſion, by an obſtruction in the manner mentioned, occaſioning either a rupture or an eroſion of veſſels. I am hence led, from not being fully ſatisfied with any of theſe explanations, to ſeek for ſome other RATIO SYMPTOMATUM, or SYMPTOMATALOGIA; and I am much

 diſpoſed

diſpoſed to attribute them to a diſeaſed or impaired ſtate of action in the cutaneous veſſels themſelves, which brings me to the conſideration of the PROXIMATE CAUSE, and to the inveſtigation of which I ſhall proceed in the next ſection.

DERMATO-

DERMATO-PATHOLOGIA.

SECTION IX.

THE PROXIMATE CAUSE OF IMPETIGINOUS AND EXANTHEMATOUS AFFECTIONS IS SEATED IN THE CUTANEOUS CAPILLARY VESSELS.

THUS far, in my humble endeavours to arrange and explain the hitherto commonly received pathology of cutaneous diſeaſes, as founded on the doctrines of PLETHORA and CACOCHYMY, together with the few anatomical and phyſiological obſervations on the CUTIS VERA and its appendages, I have been much indebted to the various ſcattered opinions of authors, and others, on the ſubject, the beſt of whom have gone no farther than to have conſidered the PROXIMATE CAUSE as one

or other of the three following conditions of the ſkin, viz.

I. A depraved ſecretion of the ſebaceous glands.

II. A morbid ſtate of the bulbs of the hair.

III. A morbid condition of the cutaneous veſſels.

THEY who have conſidered a SUPERABUNDANT ACIDITY, A PRÆTER-NATURAL SALINE STATE OF THE BLOOD, or ſome ſuch cacochymic virus in the maſs of the circulating fluids, and alſo THE DIMINUTION OF THE VITAL PRINCIPLE, as PROXIMATE CAUSES of cutaneous diſeaſe, have given their attention only to the general ſtate of the habit, and have not at all thought of accounting for the local deſtruction of THE PARTS CONCERNED, and which conſtitutes the proper impetiginous diſeaſe.

To

To make THE LAST the object of our enquiry, would be the true, and only compleat, way of coming at, and accounting for, the whole of the ſymptoms of any diſeaſe, and of eſtabliſhing the immediate or PROXIMATE CAUSE, on the knowledge of which, as I have hinted at before, our indications of cure, particularly in chronic affections, muſt neceſſarily reſt; and ſurely it ought to be conſidered as of the firſt conſequence on thoſe impetiginous occaſions, which ſometimes may admit of being chirurgically treated by external applications, while a proper attention is paid to the general ſtate of the habit, and to the removal of the conſtitutional prædiſpoſition.

Each of the above morbid ſtates of the ſkin have been ſuppoſed by pathologiſts to be dependant on the action of ſome ſpecific acrimony thrown upon the ſurface of the body, from its being general through the whole of the circulating fluids. I muſt however here obſerve, that DR. MILMAN'S *new opinion of the ſource of the ſcurvy* muſt be received as an exception to this general obſervation;

obſervation, and with which I was not acquainted, till I lately read his eſſay on that ſubject; but as it has been confined to that particular diſeaſe, it cannot, and it has not been, received by practitioners, as a general pathology of impetiginous affections.

As theſe doctrines and proximate cauſes do not appear to me to explain the whole of impetiginous pathology, or ſatisfactorily and fully to account for cutaneous affections, either idiopathic or ſymptomatic, I ſhall proceed with ſome degree of confidence, being clearly of opinion, that the aforementioned morbid ſtates of the ſkin are no other than the neceſſary conſtituents of the diſeaſe, and cannot with propriety be conſidered as the proximate cauſes.

I would wiſh my reader to carry his ideas ſomewhat farther, and endeavour to agree with me, and even, by more attentive obſervation and reflection, to exceed me, in my attempts to inveſtigate THE CAUSE of this depravity in the cutaneous ſecretions, and of the ſeveral morbid ſtates connected with the CUTIS VERA, namely, of

of the ſebaceous glands, the bulbs of the hair, and the exhalent or perſpirable veſſels. I think it will be advancing nearer the truth.

I am encouraged in this attempt, and to recommend it to the attention of EVERY PRACTITIONER, from the appoſite tendency of the opinion, which ſo many writers have taken up, namely, that the matter of perſpiration, or in other words, the contained fluid of the moſt extreme cutaneous arteries, and other capillary veſſels, is the chief agent of the ſuppoſed impetiginous acrimony.

This pathological part of the old doctrine ſo opportunely ſupports my idea, that I think if they are right, and I can ſucceed in my endeavours to account for the generally admitted morbid condition of the cutaneous fluids and ſecretions immediately connected with the veſſels, on a fair phyſiological and pathological principle, it will be found the beſt ground, ſtrictly ſpeaking, on which we can eſtabliſh the PROXIMATE CAUSE of moſt, if not all, of theſe external eruptive affections.

I am

I am however fully aware, in undertaking this inveſtigation, and on ſeriouſly conſidering how complicated the ſtructure of the CUTIS VERA is, and how numerous the offices are which it has to perform, by the inviſible action of the various minute organs of which it is compoſed, that it would be found a difficult taſk by any one, whatever advantages he might poſſeſs from the experience of years, and with the beſt opportunities for making obſervations, to convince the ſtill longer experienced, and probably prejudiced, reader, that a diſeaſed action of either of its component parts could of itſelf alone be a ſufficient cauſe to produce the various morbid appearances of the ſkin, which we are every day meeting with; and that he will ſtill be inclined to admit, from the force of habit, and a familiar acquaintance with the old doctrines, the probability of a general acrimony being concerned, as the ancients have always ſuppoſed, in the production of almoſt all cutaneous diſeaſes.

Though prepoſſeſſed with the idea, that the long experienced practitioner will not eaſily

eaſily become a convert to my new opinions on this ſubject, ſtill he is to be admitted as the moſt proper judge of the facts, and of the propriety of the reaſoning made uſe of in its ſupport, and if he but HESITATES between the two, namely, the old doctrine and the preſent one, I ſhould look on IT as ſome kind of victory over his old habits, and his old opinions.

But if THIS ſhould not even be the caſe, let me warmly recommend the young reader to exclaim with me, "NON PROGREDI EST REGREDI," and with POPE, "TIS BUT A PART WE SEE, AND NOT THE WHOLE;" and ſo it will remain, I fear, after at leaſt all my endeavours, and obſervations.

DERMATO-PATHOLOGIA.

SECTION X.

ON THE UNIVERSALITY OF THE CAPILLARY VESSELS, AND ON THE SYMPATHY BETWEEN THE EXTERNAL AND THE INTERNAL.

I think it very neceſſary in this place to obſerve, that, on the preſent occaſion, I content myſelf with offering to the reader the following reaſoning as a ground for a GENERAL HYPOTHESIS OF IMPETIGINOUS DISEAES, hoping at ſome future period of my life, after I have more attentively and experimentally conſidered the ſubject, to make the proper application of it, in a particular, and perhaps *noſological*, manner, to each of the various chronic affections of the ſkin,

ſkin, which will admit of being characterized as a ſpecific GENUS of cutaneous diſeaſe.

This muſt require additional practical obſervations, and occaſion me ſome trouble; but in which I ſhould be very conſiderably aſſiſted, by being obligingly favoured with the remarks and experience of practitioners, in general, on this intereſting branch of medicine.—To proceed with ſome reflections on the univerſality of the veſſels concerned.

It ſeems to be a point univerſally agreed to, that, from various circumſtances in the animal œconomy, a ſingular connection or conſent takes place between the ſtomach and the outward ſurface of the human body, eſpecially, from the ſeveral phænomena obſerved, when there is the diſpoſition to the PYREXIAL STATE of the ſyſtem. It THEN very ſtrikingly appears, that the tone of the organ of digeſtion is found to be dependant on the tone of the cutaneous organ; and on the contrary, that

an atony of the one has a correſponding connection and agreement with the atony of the other : and this eſtabliſhed ſympathy is not unfrequently obſerved, when the conſtitution labours under a cutaneous diſeaſe, ſtrictly of the chronic kind.

This ſtriking ſympathetic operation between parts, ſo apparently diſtinct from one another, claimed much of the late celebrated PROFESSOR CULLEN'S attention, and he uſed to make impreſſions, even to aſtoniſhment, on the minds of his hearers, when he ſcientifically laboured at his lectures to explain, on what principle this conſtitutional connection of external and internal parts took place.

In the pathological view of the doctrine of fever, as made publicly known in his FIRST LINES, he has placed the atony of the former correſponding to the atony of the complicated cutaneous organ, in a ſympathetic action of the muſcular fibres of the ſtomach itſelf, with the muſcular fibres in

in the extreme veſſels on the outward ſurface of the body.*

When I was ſome years ago engaged in inveſtigating this doctrine of febrile ſympathy, I made it a queſtion, at leaſt in my own mind, whether the muſcular fibres of the ſtomach were in an atonic ſtate, at the time this ſympathetic affection was ſuppoſed to take place.

Admitting the conſent between the ſtomach and the ſkin, I then endeavoured to explain it by a probable connection of parts more ſimilar, to wit, between external and internal veſſels of the capillary ſyſtem; finding it difficult to allow, that it could take place between parts ſo evidently differing in their ſtructure and proportion, as minute veſſels, and large muſcular fibres.

If DR. CULLEN has been correct and right in fixing the ſeat of this ſympathy in muſcular

* See DR. CULLEN's particular expreſſion in a letter to the author, page 124, in the ſecond part of his TREATISE ON SYMPATHY.

cular fibres, I ſurely cannot be wrong in ſuppoſing it moſt probable, and moſt natural, that it ſhould take place between muſcular fibres of the ſame ſize, and in organs too with the ſame properties and uſes.

I ſhall here therefore beg leave to extract my opinion, reſpecting the ſuppoſed ſympathetic connection of the internal and external extreme veſſels, from the treatiſe on ſympathy which I publiſhed eleven years ago, and which I THEN wiſhed, when too late, to have had conſidered by every candid reader, as *academic effuſions* on the ſubject, though I STILL feel it, in its application to medical principles, as intereſting to myſelf as ever.

Let me further obſerve, that although I may, for the preſent, ſeem to my reader to have wandered entirely from the object, by having entered upon the doctrine of febrile atony and ſpaſm, and an explanation of the pyrexial affections of the ſtomach, yet I hope it will hereafter be ſatisfactorily made to appear to him, that they are connected with the ſubject of the preſent eſſay, in

in as far as they do mutually concern the cutaneous veſſels, in the production of eruptive diſeaſes.

I have there ſaid,

Firſt,—" That if a debility of the " nervous ſyſtem, from whatever cauſe " induced, occaſions a weakened action of " the heart and arteries, this muſt neceſ- " ſarily and principally be felt in the ter- " minations of the arterious ſyſtem, " namely, the ſyſtems of capillary arteries, " and ſecretory veſſels. I have therefore " conſidered the ANOREXIA, which ſo " generally attends the beginning of fever, " as depending on an ATONY of the ex- " treme veſſels, and a diminiſhed action of " the villous glands, of the ſtomach."

Secondly,—" That if it can be reaſonably " ſuppoſed, that the continuance and in- " creaſe of the general debility are attended " with a proportionate atony in the ex- " treme veſſels; and that the ſpaſm of the

" extreme

" extreme veſſels takes place, more or leſs,
" according to the extent of the atony in
" them, then I have concluded, that the
" NAUSEA depends upon a CONSTRICTION
" formed, in conſequence of the increaſe
" of atony in the veſſels of the ſtomach."

Thirdly,—" That if the continuance
" and increaſe of the general conſtriction
" of veſſels, together with the total ceſſa-
" tion of the *proper* function of the ſtomach,
" can be juſtly conſidered as a ſufficient
" cauſe to rouze the VIS MEDICATRIX
" SYMPATHIÆ to her ſalutary exertions,
" then I ſhould conſider the VOMITING
" as the RE-ACTION of the ſtomach and
" muſcular ſyſtem, completely ſuited, in
" moſt caſes, to reſtore to its due action that
" important organ, THE ORGAN OF DI-
" GESTION."*

From the frequent inſtances of the ſto-
mach being not only affected by, but con-
nected with, cutaneous diſeaſes, and which
diſordered

* Corollaries from pages 222 and 223 of the TREATISE ON SYMPATHY, 1781.

diſordered ſtate of it would ſeem equally, on ſuch occaſions, to depend upon the ſuppoſed vaſcular connection, as well as the condition of the cutaneous veſſels, I have thought the preceding corollaries were pertinent to the ſubject, and would ſerve to elucidate my ſuppoſed vaſcular conſent of parts.

For the arguments at large in ſupport of this opinion, I muſt beg leave to refer the reader to the aforementioned treatiſe; obſerving, however, that, on the preſent occaſion, we are to conſider the general debility of the muſcular ſyſtem, when connected with a chronic cutaneous affection, as ariſing from a derangement of the inherent principle of the muſcular fibre, independent of the *ſenſorium* and nervous ſyſtem.

This ſuppoſed connection of extreme, or capillary, veſſels ſeems to me to be quite conſiſtent with the laws of the animal œconomy, and the univerſality of the ſenſitive principle, and is ſupported by the organization of the parts concerned: therefore, whether it be under a proper febrile,

or only a cutaneous, affection, that the ſympathetic irritation takes place, I am led to conſider the occurrence of the inordinate action of the ſtomach in exciting vomiting in the firſt caſe, *the febrile*, or of its impaired function, and morbid condition in the other, *the cutaneous*, as ariſing from a deranged balance and connection in the ſyſtem of extreme veſſels: in the firſt *inſtance* attended with fever and vomitings, becauſe the affection of veſſels is general: in the *other* without fever, but with impaired appetite, or the ſtomach otherwiſe diſordered, becauſe they are but partially affected, and do not call up, or require, the increaſed action of the heart and arterious ſyſtem, or the exertion of vomiting, to remove a general atony and ſpaſm on the ſurface of the body.

We very frequently become witneſſes to partial affections of the nervous ſyſtem, in all parts of the human body, varying either from the degree of excitement or collapſe, and accordingly putting on the appearance either of inordinate and ſpaſmodic actions, or of a paralytic ſtate of the part affected, as the

the one or the other prevails, without the SENSORIUM being in any way concerned, or even apparently disturbed.

Why should it not be as natural, and therefore as probable, that a part only of the system of capillary vessels might be liable to its specific local diseases, arising from their own organization, and marked irritability, independently either of morbific matter, or the function of the heart and larger arteries, and yet not unconnected with the general laws of the circulating system, or the spirit of the animal œconomy?

This doctrine appears, in my humble opinion, to hang very well together, and I shall accordingly attempt some further proof and illustration of it, by some additional observations on the organization and action of the small vessels.

In as far as I have considered the production of eruptive diseases, attended with fever, as depending on a connection be-

tween external and internal extreme veſſels, it is proper to obſerve, that the preſence of ſuch a ſyſtem of veſſels in the ſtomach and inteſtinal canal may very confidently be inferred, and I am ſure cannot even be doubted, from the frequent inſtances of large ſerous ſecretions, or, more properly ſpeaking, effuſions, taking place in them, and of their being very quickly evacuated, either by a vomiting or a *diarrhœa*, according to the ſeat of the affection, or the action of the remote and occaſional cauſes. In fact, they are the common effects of emetics, and purgative medicines, by their *ſtimulus* on the extreme veſſels, particularly when the latter are of the draſtic kind.

That an eſtabliſhed balance, a *formula pacti inſita inter vaſa minima*, takes place between the internal and external capillary veſſels is made further evident by ſeveral morbid changes, which occaſionally occur in the ſyſtem, after the detrimental effects of ſome occaſional remote cauſe. Thus, to mention a common inſtance; a ſuppreſſed perſpiration, from the undue operation of atmoſpheric cold, is very frequently followed

lowed by a laxity of the inteſtinal canal, which commonly prevents a pyrexial ſtate of the ſyſtem; on which occaſion it is curious to obſerve, that the ſtomach does not ſympathiſe with the general ſpaſm on the ſurface of the body.

Again; when a diarrhœa from ſuch a cauſe is imprudently checked, we either find the pyrexial ſtate brought on, or if that ſhould not take place, ſo as to overcome, by the operation of the VIRES MEDICATRICES NATURÆ, the vaſcular conſtriction on the outward ſurface of the body, the redundant ſeroſity is thrown upon ſome cavity, by the increaſed effuſion from the exhalent arteries.

On theſe principles we may clearly account for the occurrence of a puerperal ASCITES, after the ſuppreſſion of a diarrhœa; and for many other diſeaſes, as the ſequelæ of ſome other affection.

I ſhall in the next place take the liberty to ſay, that ſerious attention is due to what I am next going to obſerve, namely, that the

the idea which is here taken up, of an eſtabliſhed connection, and occaſional derangement, in the circulation of the capillary veſſels in general, is of more importance to the HEALING ART, than may at a firſt acquaintance ſtrike the reader, and will, I think, on more ſerious and minute inveſtigation, account for the PROXIMATE CAUSE of many other, hitherto inexplicable, diſeaſed ſtates of the human body.

But the full conſideration of this opinion I ſhall reſerve for the ſubject of a future eſſay, in which I mean to make the following queſtion the ground of ſome general pathological reflections.

> " May not certain phœnomena of diſ-
> " eaſe be aſcribed to a loſs of balance
> " in the circulation of the capillary
> " ſyſtem IN GENERAL ?"

I ſhall however make one obſervation at preſent, connected with thoſe reflections, to wit, that I ſhall, on that occaſion, conſider the human body as having properly two ſurfaces, namely, an outer ſurface and

and an inner ſurface. The former will be divided into the cutaneous :—The oral, naſal, and faucial :—and the pulmonary. The latter into the ventricular and inteſtinal: —The vaginal and uterine :—and the urethral, veſicular, and nephritic.

This diviſion will be made to appear properly connected with the ſuppoſed balance in the circulation of the capillary, or extreme, veſſels, as neceſſary to the healthful ſtate of the ſyſtem; and as one of our firſt anatomiſts* has been of opinion, that ſeveral of, if not all, theſe parts are endowed with an EPITHELION, a membrane, or membranoſe ſurface, analogous to the cuticle, it renders the ſuppoſition of a connection, or relation of their diſeaſes, with the balance of the capillary circulation, the more probable, and the more important.

I ſhall briefly mention the principles, on which DR. MONRO has ſupported this opinion.

He has compared the villous coat of the human inteſtines to the *cuticula* of the external

* The late DR. ALEXANDER MONRO.

ternal ſurface of the body, and properly therefore conſiders it as a continuation of the *latter* from the lips, over the mouth, tongue, and *fauces*, and through the *œſophagus*, ſtomach and inteſtinal canal.

He defends this analogy by the following circumſtances:

I. They are both pervious to fluids, and admit of other paſſages through them.

II. They are both liable to be thickened from mechanical cauſes acting on them.

III. They are both aſſiſted in defending the parts they cover, from the action of ſtimulant matters, by a mucous or ſebaceous fluid.

IV. They are liable to be diſeaſed on the ſame principle, from abraſion and inflammation.

V. They are both equally incorruptible, and are principally intended to defend the tender ſurfaces they cover.

Laſtly,

Lastly,—They are both easily and quickly regenerated.*

I next proceed to the irritability of capillary vessels.

* See MISCELLANEOUS REMARKS ON THE INTESTINES, by the late professor MONRO, in the fourth volume of MEDICAL ESSAYS AND OBSERVATIONS revised and published by a society in EDINBURGH.

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SECTION XI.

ON THE IRRITABILITY OF THE CAPILLARY VESSELS, AND ON THEIR BEING LIABLE FROM THEIR ORGANIZATION TO ATONY, AND EVEN PARALYSIS.

A morbid or atonic ſtate of the *epidermitical* veſſels, by which *term* I mean to include thoſe, which are equally connected with the rete mucoſum as well as the cuticle, may either depend upon a general debility of the muſcular ſyſtem, or a partial one of the veſſels of the parts affected; and ſuch an atony of the extreme capillary veſſels is, I think, the immediate and leading cauſe of the derangement in their circulation.

This

This atonic condition of the veſſels lays the foundation of the future cutaneous diſeaſe, which is either impetiginous or exanthematous, *i. e.* either ſquammous or puſtular, according to the degree and extent of the vaſcular debility, and the nature of the conſtitutional temperament.

The perſpirable exudation is materially concerned in this ſuppoſed vaſcular debility of the ſkin; for it appears reaſonable to conclude, that a healthful action of the capillary veſſels is neceſſary for the duly promoting, or carrying on, this exudation, and, as it may equally be called, inſenſible perſpiration. The ſame vaſcular action muſt in like manner be requiſite to the duly ſupporting the ſeveral ſecretions going on in the ſkin.

The ſtructure and organization of the extreme veſſels corroborate this opinion; for that they are living parts of the animal machine, and not ſimple tubes or hollow veſſels mechanically acted upon by a diſtant organ, the heart, is now clearly demonſtrated by the attentive obſervations of

anatomiſts; and their irritability is alſo ſo well eſtabliſhed by various experiments, and judicious reflections, that no phyſiologiſt can for a moment heſitate to pronounce them, as ſubject to excitement and collapſe, or in other words, to atony, ſpaſm, and paralyſis, as any other organized and living part of the human body.

That RATIONAL PRINCIPLE implanted in the conſtitution of man for his earthly preſervation, which has been called by phyſicians NATURE, and the AUTOCRATEIA, ſeems to have conſidered this vaſcular irritability as ſo important to the well-being of the animal œconomy, that SHE has every where furniſhed the extreme parts of the circulating ſyſtem, with a greater proportion of muſcular fibre, and of courſe with a greater proportion of HALLER'S *natura irritabilis muſculi*, ſeu *irritabilitas muſculi*, than belongs to any other arterious veſſels.

It appears to me moſt probable, that the healthful ſtate of all the minute parts of the ſkin, and their ſecretions, and alſo the proper

proper circulation of the ſanguineous and ſerous fluids through them, depend entirely upon the ordinate action of this muſcular irritability of veſſels, with but little, if any, aid from the conjoined, and in them inviſible, operation of elaſticity.

This muſcular organization, and ſenſibility in the extreme veſſels, is, I believe, the ſpring and occaſion of the well known ſympathy of the ſtomach with moſt cutaneous diſeaſes. We moſtly find, that either *anorexia*, *nauſea*, or *vomitio*, attends them, when there is even no proper pyrexial ſtate obſervable; the *one* or the *other* according to the degree of the general atony preſent, the extent of the cutaneous affection, or the peculiar irritability of the temperament; I have ſometimes thought the ſlight pyrexial ſtate has been a *vis medicatrix* ſtriving to remove the affection, and loſs of balance.

Theſe ventricular affections, when combined with cutaneous eruptions, would appear to me, to immediately depend, in the exanthematous, as well as the impetiginous diſeaſes, on the muſcular ſenſibility

and

and conſent of capillary veſſels, varying in degree according to the peculiar ſtate and diſpoſition of the ſyſtem, under the different temperaments, the ſanguineous being more likely to be attended with a high vaſcular excitement, or irritability, than the melancholic, or atrabilious as the humoriſts and galeniſts would term it, while each ſpecific conſtitution is liable to its particular *ſpecies* of eruptive, and other affections of the ſkin.

That a debility of the epidermitical capillary veſſels may lay the foundation of cutaneous eruption, will appear, I truſt, to my reader ſtill more probable, from what has occaſionally been obſerved to happen in fevers of the intermittent kind.

It has been taken notice of by ſome pathologiſts, that ſuch an eruption has ſometimes accompanied the parcxyſm of an intermittent; of which phœnomenon I ſhall beg leave to offer the following explanation, as conſonant to the CULLENIAN DOCTRINE of fever, namely, that the re-action of the ſyſtem had not been ſufficient for the entire

tire removal of the ſpaſm or conſtriction of all the cutaneous extreme veſſels, and that ſuch a failure in the operation of the *vires medicatrices* would be neceſſarily followed by a detention of the perſpiratory matter in certain veſſels, which would act with its uſual ſtimulus on ſome one part or other of that complicated organ, the ſkin.

Though ſuch eruptions, when occuring with the paroxyſm of an intermittent fever, are to be looked on as no more than *ſymptomata ſymptomatum*, yet they have given riſe to ſome *ſpecies* of that fever, which noſologiſts have diſtinguiſhed by the names of TERTIANA URTICATA, and TERTIANA MILIARIS.

When we come to give full latitude to the importance of the ſyſtem of capillary veſſels, in the production of all pyrexial diſeaſes, we ſhall have good reaſon to ſuſpect, that the pleuritic, arthritic, and other affections, occaſionally occuring with intermittents, are owing to a continuance of the ſpaſm in the internal extreme veſſels

of

of the parts ſo affected, and occaſioned by a loſs of balance in the ſyſtem of capillary veſſels in general.

In very univerſal cutaneous affections, even of the chronic kind, when the irritability of the conſtitution is very great, the excited action of the ſtomach producing vomiting may be reaſonably conſidered as the operation of HALLER'S *vis inſita muſculi*, and as a *vis medicatrix* to reſtore to its due balance, in the parts where it is morbidly deranged, or deſtroyed, the circulation of the ſyſtem of capillary veſſels, in as far as the action of vomiting, or the effect even of a nauſea, has very evidently a tendency to rouze and increaſe the action of the heart and the arterious ſyſtem, and thereby remove the debility of the cutaneous circulation, which ſupports, as well as, *a priori*, occaſions, ſo many of the impetiginous affections. By adminiſtering medicines in the confluent ſmall-pox on this principle, about the ſeventh day of the eruption, I have ſeen in twenty-four hours a very

a very favourable alteration in the appearance of the diſeaſe, by the evident ſymptoms of an increaſed cutaneous action.

I ſhall next proceed to conſider, more fully, the ſuppoſed impetiginous atony of the extreme cutaneous veſſels, by taking a view of the ſeveral remote cauſes, which may produce it.

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SECTION XII.

THE REMOTE CAUSES ACT WITH A SEDATIVE EFFECT IN THE PRODUCTION OF IMPETIGINOUS DISEASES.

IT has been ingeniouſly advanced by PROFESSOR CULLEN, that this muſcular atony of the extreme cutaneous veſſels laid the foundation of fever, and depended on a general debility of the nervous ſyſtem; and this opinion forms the baſis of all his *pyrexial* doctrines. But from the oppoſite nature of ſome of the commonly admitted remote cauſes of fever, the operation of them, in bringing it on, would appear, in ſome reſpects, to be different. I cannot, therefore, readily admit, that the ſame regular connection, between cauſe and effect,

effect, takes place in every caſe of fever, to wit, in the production both of the putrid, and inflammatory fever.

It muſt however have appeared to others, as well as to me, that the atony of the capillary veſſels is incapable, of itſelf alone, to produce this general febrile effect, and therefore, upon DR. CULLEN's pathological principle, it has been admitted, that a conſtriction or ſpaſm of the atonic veſſels is eſſentially neceſſary to conſtitute the proximate cauſe of PYREXIA, and from the manner in which it has been ſuppoſed to take place by DR. CULLEN, it muſt *a priori* be concluded, that the very terminations of the extreme cutaneous veſſels are, at its commencement, the ſeat of the conſtriction.

But the vaſcular atony, in the pathology of impetiginous affections, which I am attempting to eſtabliſh, being unconnected with fever, and only partially impairing the healthful ſtate of the ſkin, is, ſtrictly ſpeaking, of the chronic kind, or attendant

on a chronic diſeaſe, and is not to be conſidered as accompanied with the ſuppoſed conſtriction.

The atony on this occaſion is to be viewed in the light of a proximate cauſe of ſuch diſeaſes, by its being the immediate agent of a languid circulation of the ſerum or lymph, and as only producing either a plethora of the minute cutaneous veſſels, which may endanger a rupture of them, or when it extends to paralyſis, a local acrimony of their contents, as the natural conſequence of ſtagnation, under the ceſſation of their proper circulation.

This *chronic debility* of the extreme cutaneous veſſels, on which I have ſuppoſed impetiginous diſeaſes principally to depend, may be a local indiſpoſition of the moving powers, independent of the general circulation, and then *it* is a proper idiopathic affection; but *it* may equally ariſe from a general debility of the muſcular ſyſtem, and then *it* ſhould be conſidered as a ſymptomatic affection.

That

That this may alſo appear to my reader probable, and more evident, I ſhall in this and the following ſections attempt to ſhew, that the remote cauſes, in moſt caſes of cutaneous affections, ſeem to operate, by inducing more or leſs of a debility, in the whole ſyſtem of the MOVING FIBRES.

Before I proceed to the ſeparate enquiry into the nature of the ſeveral remote cauſes, I ſhall conſider it as generally admitted, that debility primarily depends upon the weakened energy of the brain and nervous ſyſtem, immediately connected with the ſyſtem of muſcular or moving fibres, and that this is neceſſarily attended with a proportionable debility in the heart and arterious ſyſtem, whoſe functions ſo much depend on muſcular energy:—that this dependence is kept up by the mutual intereſt, which the nervous and muſcular ſyſtems have in one another, and with all the functions of the animal œconomy:—and that in conſequence of the atonic affection of the heart, and, in a ſlight degree only,

only, the larger arteries, under a general muſcular debility, the extreme arterious veſſels, from their far greater proportion of muſcular fibre, are neceſſarily and principally affected.

We cannot enough admire the beautiful and life-ſecuring diſpenſations of PROVIDENCE, in the ſtructure and organization of the arterious ſyſtem of an animal machine, the extremes of which have been evidently intended to depend entirely for their action on muſcular energy.

All know what a powerful muſcular organ the human heart is, acting *independently* of the SENSORIUM and nervous ſyſtem, and proportioned always to the bulk of the animal. By it begins the important function of the circulation of the blood.

It was alſo equally important, that the blood ſhould be ſecured from ſtagnating at the extremities of the arterious ſyſtem, and therefore

therefore NATURE has admirably provided it with a ſufficient quantity of muſcular action, in the ſtructure of the capillary arteries, in order to propel the vital fluid into the venous ſyſtem, and to promote the neceſſary ſecretions and evacuations.

But obſerve, that the intermediate or central courſe of the arterious part of the circulation ſeems to have been conſtructed nearly without muſcular fibre, and appears to me, for a very wiſe reaſon, entruſted almoſt ſolely to the power of elaſticity in the veſſels.

WHY HAS IT BEEN SO ORDAINED?

I am ſtrongly impreſſed with the idea, that, from the nature of an animal body, and the neceſſity of having it endowed with high ſenſibility and irritability, it would have been impoſſible to have long preſerved it from accidents and diſeaſe, as the conſequences of the natural and neceſſary excitement in the ſyſtem of muſcular fibres, if the larger arteries had been proportionably muſcular in their ſtructure with the extremities,

tremities, or capillary veſſels, of the arterious ſyſtem: for then either atony or ſpaſm, occuring in any large artery of the human body, muſt have ſoon proved fatal to the exiſtence of man, or at leaſt have ſubjected him to many other lingering diſeaſes, according to the importance and ſize of the artery, which might then have been ſo affected.

It has therefore been wiſely, and to me clearly, ſo ordained, that ſuch ſerious and dangerous interruptions to the circulation of the blood, the SINE QUA NON of life, either from atony or ſpaſm, might not happen.

This ſingular conſtruction, and organization of the arterious ſyſtem, offer to me a very juſt ground to conclude, that there is a natural and eſtabliſhed principle of ſympathy between the heart and the capillary arteries, which very probably lays the foundation of ALL PYREXIAL DISEASES.

The

The above pathological reaſoning on muſcular debility will accord well with the principle of ſome exanthematous affections, and with alſo many of the impetiginous kind, when the remote cauſes act by firſt inducing an internal debility of the ſyſtem.

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SECTION XIII.

ATMOSPHERIC COLD OCCASIONS IMPETIGINOUS AFFECTIONS.

I ſhall begin with ATMOSPHERIC COLD, externally applied to the human body, as the moſt frequent remote cauſe.

I ſhall firſt obſerve, that COLD has been eſteemed as one of the remote cauſes of PYREXIA, but it has been doubted, whether it ever produces idiopathic febrile affections of itſelf alone. Either contagion or *miaſmata* have been ſuppoſed neceſſary concomitants, to occaſion the various kinds of pyrexial complaints, which we meet with.

But

But as fever does not accompany moſt of the idiopathic affections of the ſkin, either eryſipelatous or impetiginous, and when any ſlight degree of it is occaſionally obſervable, it is to be conſidered as ariſing from the general ſympathetic ſtate of the habit, from an irritable idioſyncracy, it then would appear, that atmoſpheric cold could be alone a ſufficient cauſe, in moſt caſes, to produce cutaneous eruptions.

This it may do by either its ſedative, or its aſtringent power, locally affecting the ſkin. We ought therefore in all caſes, where much of a pyrexia attends exanthematous affections, to ſuſpect, that both cold and *miaſma* have acted in conjunction, on which occaſions I believe it will be found, that ſome degree of fever precedes the appearance of a cutaneous affection.

When *miaſma* has not been concerned in the production of the eryſipelatous or impetiginous complaints, much fever would then appear unneceſſary, as cold alone will only produce a topical and temporary depravity of the cutaneous exhalations and

ſecretions, which the ſkin's own inherent powers may in due time be capable of removing, without any PYREXIA.

Though external cold will readily be admitted as a principal remote cauſe of impetiginous diſeaſes, from having been conſidered ſo by moſt authors, ſtill it may be made a queſtion how it locally acts? *i. e.* whether, in the production of them, it acts topically, with a ſedative effect? I am of opinion it may, without its local operation diſturbing the whole of the functions of the ſyſtem.

But admitting, that a ſimple atony of the epidermitical and cutaneous veſſels is too hypothetical, may not atmoſpheric cold occaſion a CONSTRICTION in ſome one part of them, which will, by impeding the inſenſible perſpiration, detain, or render ſtagnant, the LYMPH of the blood, and thus give riſe to cutaneous eruptions? for when produced by ſuch an external cauſe, IT may be explained on a different principle, than when it ariſes from any remote or occaſional cauſe, inwardly

inwardly affecting the action of the heart and arterious ſyſtem, and ſo producing fever.

The *univerſal* operation of external cold on the human body, by an aſtringent effect on the extreme cutaneous veſſels, would moſt probably occaſion the true SYNOCHA or inflammatory fever, without the admiſſion, into the ſyſtem, of any atmoſpheric MIASMA. But the *partial* operation of it, on the outer ſurface of the body, would only cauſe a temporary interruption to a part of the cutaneous circulation, and would thus account for many different kinds of exanthematic affections; particularly would explain the impetiginous veſicles of the PEMPHIGUS, in which caſe the habit is but little diſpoſed to fever; and alſo the eryſipelatous eruption and inflammation, as occurring from a ſimilar remote cauſe, operating locally, when the conſtitution had been heated by any violent exerciſe, under a more inflammatory ſtate of the ſyſtem; and therefore it is, that we moſt frequently meet with eryſipelatous affections in the ſanguineous temperament.

Thus,

Thus, every man's obſervation confirms this pathological explanation; and we all therefore find, that, agreeable to this hypotheſis, the extreme parts of the human body, which are naturally moſt expoſed at all ages, and in both ſexes, either to the ſedative or the aſtringent operation of atmoſpheric cold, are moſt frequently ſeized with theſe diſeaſes, and are alſo moſt liable to the ordinary impetiginous affections; to wit, the hands and arms;—the ancles and legs;—and the face and cheſt. There muſt be ſome fixed principle for this. The fact with me, at all events, militates ſtrongly againſt the doctrine of a cacochymic ſtate of the whole maſs of blood.

The debilitating and other morbid effects of extreme cold on the animal fibre, and particularly from its immediately acting on the cutaneous emunctory, and its irritable ſecretions, may be further aided, and rendered more evidently noxious, by the addition of HUMIDITY in the atmoſphere; and from their ſo frequently occurring together, they have been conſidered by moſt writers as forming the moſt common, and the

the moſt powerful union of remote and occaſional cauſes, in the production of ſcorbutic and leprous affections. But when the prædiſpoſition from inherent temperament favours their operation, they cannot fail of acting with the moſt ſerious conſequences, to the moving fibres of our animal machine.

It may alſo be further obſerved, that the light and dry air of the atmoſphere is rendered conſiderably colder, in its effects on the outward ſurface of the human body, by the addition of MOISTURE to the ſkin, from any accidental application of it, or from wet apparel imprudently kept on. This effect is moſt certainly founded on that principle in phyſics, that evaporation increaſes the power of atmoſpheric cold.

But putting the humidity of the atmoſpheric air, in contact with the ſuperficies of the human body, out of the queſtion, on the preſent occaſion of conſidering the remote cauſes of, ſtrictly ſpeaking, impetiginous diſeaſes, I am ſtill of opinion, that EXTREME COLD will certainly, of itſelf, produce

produce atonic effects on the circulation of the extreme capillary veſſels, which have been deſcribed as forming the *papillæ* of the *cutis vera*, and probably the net-work ſurface alſo, which immediately lies under the *epidermis* of the human ſkin: and when IT has been ſo long applied as to occaſion death, I believe its morbid operation takes place by an action on all the capillary veſſels of the pulmonary and cutaneous organs, producing an univerſal ſpaſm of them.

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SECTION XIV.

FEAR IS FREQUENTLY AN IMPETIGINOUS REMOTE CAUSE.

FEAR has been mentioned as another occaſional cauſe, acting by a debilitating power in the production of ſome eruptive diſeaſes of the ſkin. It has been ſuppoſed to act inſtantaneouſly, by effecting a ſudden collapſe of the nervous or vital principle, and thereby weakening the circulation and muſcular ſyſtem, from their connection with the ſenſorium and nervous ſyſtem; for it evidently deprives the ſkin, for a time, of its uſual colour. In inſtances of its violent operation it has been

ſucceeded by vomitings, and by eruptions and efflorefcencies on the ſkin.

Thefe ſtriking effects, ſtill moſt probably occurring from peculiar cutaneous idiofyncracy, ſome way connected with the conſtitution at large, may be accounted for on the ſuppoſition, that, by the diminiſhed action of the heart and arterious ſyſtem, cauſing a temporary ſpaſm, or obſtruction, in the ſyſtem of capillary arteries and veins, on the outer ſurface of the body, a ſudden check may have been given to the various ſecretions which are promoted in the ſkin by the healthful ſtate of the capillary ſyſtem, which interruption the action of vomiting, and the re-action of the heart and arterious ſyſtem, by inducing ſome degree of a temporary pyrexial paroxyſm, are intended to remove, in effecting of which ſudden efflorefcencies and eruptions have appeared on the ſkin.

Such cutaneous affections being ſuddenly produced, from an inſtantaneous and violent operation on the nervous and muſcular

ſyſtems

ſyſtems, are commonly of ſhort duration, unleſs the debility, induced by the ſedative effects of fear, from the high degree of the primary collapſe, becomes conſiderable, in conſequence of which more or leſs of a febrile ſtate of the ſyſtem muſt unavoidably ſupervene.

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SECTION XV.

HOW VIOLENT PASSIONS MAY CAUSE IMPETIGINOUS APPEARANCES.

SINCE violent paſſions of the mind have been mentioned by pathologiſts, as occaſionally producing eruptive and other cutaneous affections, it is proper I ſhould take ſome little notice of them.

Such mental paroxyſms have the immediate effect of cauſing a very rapid circulation of the blood, of hurrying the ſecretions, and of increaſing cutaneous irritability, which is rendered very evident by the ſudden reddening of the ſkin. Theſe effects have been generally allowed to be followed

followed by a collapſe of the whole ſyſtem, as the natural conſequence of the previous inordinate excitement of the ſenſorium and nervous ſyſtem, which neceſſarily leaves the muſcular ſyſtem, and of courſe the muſcular action of the capillary veſſels, incapable of immediately recovering their proper and healthful tone.

From a total debility thus produced, the proper balance in the circulation of the capillary veſſels would appear to me, on the ſame general principle, to be deranged, which morbid condition may give riſe to impetiginous appearances, either from the occurrence of an immediate and inordinate effuſion of lymph into the interſtices of the *membrana celluloſa* of the *cutis vera*; or, as the *ſequela* of the cutaneous excitement, an enſuing local acrimony of the *ſerum* takes place, occaſioned principally by its ſtagnation in the perſpirable veſſels, from ſome obſtruction or loſs of action in them, if not from a perfect *paralyſis* of them.

Violent corporeal paſſions, great muſcular exertions, inordinate indulgence of the appetite,

appetite, &c. have all been known at times to produce ſuch a temporary languor and debility of the conſtitution, as to be followed by thoſe impetiginous appearances, which in the natural and quiet ſtate of the ſyſtem were not in general, to be obſerved.

The effects however of a full meal, in inducing a temporary fever, may, I think, be explained in a way, different from what DR. CULLEN was accuſtomed to deliver from the practical chair at EDINBURGH.

Before I take leave of the ſubject of the occaſional cauſes, I ſhall offer one general obſervation, as applicable to all the various degrees of ſenſibility and irritability.

The more violent the action of the exciting cauſe has been, the greater will be obſerved to be the ſtate of collapſe which follows, and the local effects will be in proportion to the irritability of the part affected, *i. e.* the more irritable parts will

to

be ſooneſt affected. Therefore, agreeable to this law in the animal œconomy, we can readily account, why the capillary veſſels, on ſuch occaſions, ſhould be moſt immediately, as well as perhaps permanently, affected; for, according to DR. CULLEN, "it is probable, that the muſ-"cular fibres of the arteries become more "irritable, as the arteries are more diſtant "from the heart."*

* FIRST LINES OF PHYSIOLOGY.

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SECTION XVI.

CERTAIN STATES OF THE BODY AND MIND PRÆDISPOSE THE SYSTEM TO THE OPERATION OF THE VARIOUS REMOTE CAUSES.

I THINK it may juſtly be ſaid, that thoſe ſtates of the habit, which favour the operation of occaſional cauſes, in the production of ſcurvy, equally form the prædiſpoſition of the ſyſtem to the occurrence of the various other impetiginous affections, which are ordinarily met with unattended with fever.

Among the circumſtances enumerated by authors,* and taken notice of by teachers, as

* DR. MILMAN, THOMPSON, and others.

as prædiſpoſing the conſtitution to the operation of thoſe many remote and occaſional cauſes, which more immediately bring on ſcorbutic and leprous affections of the ſkin, are the following, viz. a convaleſcent ſtate from preceding illneſs, particularly on recovering from fevers :—a ſedentary manner of living, and the want of proper exerciſe : —and a deſpondency, or gloomy ſorrowful ſtate of mind, united to ſlothfulneſs and its train of hypochondriacal affections.

Intermittent complaints, and the too free uſe of mercurial medicines, have alſo been named as giving the prædiſpoſition to different kinds of impetiginous diſeaſes.

Under all theſe ſeveral circumſtances the conſtitution acquires an habitual or permanent debility, from a diminution of the vital power, which ſecondarily cauſes, in the language of DR. MILMAN, a general debility of the muſcular ſyſtem.

When ſuch is the prædiſpoſing condition of the ſyſtem to the acquiring of any particular diſeaſe, the following circumſtances,

in addition to thoſe which have already been pointed out as remote cauſes, may very properly be mentioned, as frequent exciting and occaſional cauſes of ſcorbutic and other impetiginous affections of the ſkin, viz. great fatigue of mind or body, from exceſs of thought or exerciſe :—food containing very little nouriſhment :—any cauſe ſuddenly occaſioning a depreſſion of ſpirits, or great grief :—and I may add, anxiety of mind alone, gradually brought on, by being long employed in any hazardous, or very intereſting undertaking.

I have known this mental condition bring on ſcorbutic or leprous blotches upon the hands and arms, without there having been any particular prædiſpoſition gradually acquired by any of the above named cauſes of that deſcription and tendency ; at leaſt ſuch a ſtate of mind has greatly contributed to keep up this particular kind of impetiginous affection.

When the ſcorbutic affection has prevailed to a very great degree in our fleets and armies, BAD REPORTS have had ſuch a ſudden

a ſudden ill effect upon the ſenſitive principle of thoſe who have had the complaint but ſlightly, that it has been very rapidly increaſed, from THEIR ſedative and atonic effects on the muſcular ſyſtem, through the depreſſion of the ſenſorium; and on the contrary, GOOD REPORTS, on the ſame occaſions, have very conſiderably benefited thoſe, who were labouring under the diſorder to a very great degree.*

I have heard it mentioned, that it always forms a part of the ſyſtem of good management in thoſe ſcenes of danger and mortality, which attend on war, with the view of preventing the virulence and fatality of the ſcurvy, to guard as much as poſſible, both landmen and ſeamen, from every cauſe depreſſing their ſpirits: with this view they have been often indulged with extraordinary draughts of grog and other liquors, when on the eve of an engagement, not with the intent of their acting directly as antiſeptics, but as cordials and

* Read MILMAN on the prædiſponent and remote cauſes of the ſcurvy.

tonics, to raiſe the ſpirits, as well as to invigorate the body, and thereby to prevent the increaſe of the prædiſpoſition to ſcurvy.

When all theſe circumſtances are attentively weighed in the mind, they ſo convincingly ſupport the opinion, that impetiginous affections in general are not diſeaſes of the fluids, but of the ſolids, that I am led to fix their PROXIMATE CAUSE in an impaired condition or action of the motions and moving powers in the ſyſtem of capillary veſſels.

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SECTION XVII.

UNCLEANLINESS AND THE USE OF ARDENT SPIRITS ARE EXCITING CAUSES OF IMPETIGINOUS DISEASE.

BEFORE I entirely dismiss the subject of the remote and occasional causes, I must take some notice of two others, particularly affecting the lower classes of mankind.

Though these may be considered as of less acknowledged notoriety in the production of cutaneous affections in general, yet they are justly entitled to be looked on as provocatives of that virulence of disease, as well as obstinacy of CURE, by which our best endeavours are often, for a length of time, frustrated, when we undertake to effect

effect IT: I mean uncleanlineſs, and the free uſe of ſpirituous liquors. When theſe cauſes are daily operating, we ſeldom can do more than palliate, particularly if they ſhould occur together.

Theſe marks of inattention in ſo great a part of mankind, to the preſervation of the health both of themſelves and their offspring, are even in general of ſuch duration, and have probably become ſo habitual with thoſe who are given, or expoſed, to them, that they might with propriety be viewed in the light of *external prædiſpoſing*, rather than as occaſional, cauſes.

When however uncleanlineſs diſpoſes much to the production of cutaneous eruptions, it is commonly joined with ſome other of the aforementioned occaſional cauſes, or an hereditary evil diſpoſition of the habit. It is indeed ſeldom that it acts alone, as ſome inattention in the perſon afflicted, to one or other of the NON NATURALS, commonly accompanies it. In this way we can account for the prevalence of ſcorbutic and impetigi-

nous

nous affections in infirmaries, and crowded places of confinement, of every kind.

When uncleanlineſs can be ſuppoſed to be the principal exciting cauſe of impetiginous affections, I can only account for its *modus operandi* by ſuppoſing, that it may occaſion a local interruption to the healthy action and condition of the cutaneous capillary veſſels at their terminations, probably by hindering a perfect formation of the epidermis and rete mucoſum.

The fact has been obſerved by all. The PHILANTHROPIC HOWARD, in his account of the orphan houſes at AMSTERDAM and ROTTERDAM, after having deſcribed the holes in the wall, in which two or three of our fellow creatures lay together, and after having noticed the want of air in all the rooms, ſpeaks thus:

" Many of the ſervants in theſe houſes
" are old and indolent; the children
" miſerably naſty, and many of them
" troubled with ſcorbutic and cuta-
" neous diſorders to a very great de-
" gree.

" grec. On my obſerving this to
" ſome of the directors, they replied
" in words which gave me pain, and
" excited my indignation :"

IT IS THE HOUSE DISORDER; ALL OUR CHILDREN MUST HAVE A SEASONING.

" Thus do the phyſicians and governors
" excuſe the abuſe of their truſt. The
" conſequence muſt be, that few of
" the children reach manhood, and
" that ſuch as do are a feeble and
" ſickly race."

When I minutely conſider the uſes and importance of the CUTIS VERA, and all its appendages, in the animal œconomy, and their connection, directly or indirectly, with all the principal functions of animal life, or the ſenſitive principle, I am very much inclined to think with MR. HOWARD, that the want of neceſſary attention in parents, and others, who have the care of young children, to the outer ſurface of their tender and growing frames, by conſtant cleanlineſs and ſufficient ablution, too certainly

certainly dries up, weakens, or impoveriſhes, while they are in their infancy, that SPRING OF HEALTH, A SOUND AND PERFECT SKIN, and which eventually deprives them of the full ſtrength of manhood, when they reach that period of life, and to which they may have been hereditarily entitled.

I believe, that if ſuch prophylactic means, as COLD WASHING, and COLD BATHING, were from birth univerſally attended to, in their full extent, we ſhould ſoon leſſen the number of the diſeaſes IN PANDORA'S BOX, or at leaſt weaken their power, and check their ſpreading contagion from generation to generation, when they eſcape from IT, ripe for deſtruction, and are ſcattered among the children of men.

The claſs of diſeaſes, which THEN would loſe its conſequence in the magnitude of noſological ſyſtem, would be that very tremendous one, founded on the CACHECTIC CONSTITUTION AND DEBILE TEMPERAMENT.

THEN ſcrophulous and impetiginous affections would prevail leſs and leſs, until their prædiſpoſition, clearly founded on THE DIMINUTION OF THE VITAL POWER, and the DEBILITY OF THE MUSCULAR SYSTEM, would altogether ceaſe.

THEN ANIMAL LIFE would feel itſelf unchecked, and undiſturbed in ITS MOTIONS, and MOVING POWERS, and in the functions and operations of its glandular and cutaneous organs, ſo that SHE could proſecute their healthful actions and ſecretions, when freed from chronic and conſtitutional cauſes and defects, to the attainment of a long exiſtence, and, perhaps, uninterrupted health.

ALL THIS might be the conſequence of preventing debilitating cauſes from ſupporting the congenial weakneſs of conſtitution in that large proportion, THE INFANTILE PART, of mankind;—the period of life ſo fatal to the human ſpecies. THEIR WEAKNESS is not altogether to be attributed to the feebleneſs of their generation, but is to be looked on as natural to them,

them, at that tender age, from the fineneſs of their ſolids, and the neceſſary redundancy of their fluids.

Much more might be ſaid in ſupport of this digreſſion; but I muſt proceed.

In reſpect to the free uſe of SPIRITUOUS LIQUORS, I have but a few words to ſay.

Some authors have remarked, that thoſe who have accuſtomed themſelves to an indulgence in them, are not unfrequently liable to eruptions on the ſkin. The aged and infirm have them general over the body, but in the prime of life they more particularly affect the face.

I have obſerved, that theſe effects are more likely to be the conſequence of their free uſe, when ſuch people avoid taking with them a proper quantity of wholeſome diet. Independent of their morbid effects on the action of the ſtomach, which have been allowed to be ultimately of a ſedative

nature, there is no doubt but that they produce a general atony of the ſyſtem.

The free uſe of ardent ſpirits may therefore be fairly reckoned on, as another remote or exciting cauſe, evidently occaſioning epidermitical and cutaneous eruptions by their debilitating effects, and by their gradually deſtroying the call of the appetite, and the power of digeſtion.

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SECTION XVIII.

SOME DETACHED OBSERVATIONS CONNECTED WITH THE LOSS OF BALANCE IN THE CAPILLARY VESSELS.

IT may with great truth be taken notice of, that in moſt of the ordinary caſes of impetiginous affections, the marks of a general debility of the ſyſtem are not readily obſervable, and when they occaſionally are, they cannot be eaſily accounted for.

The ſigns of ſuch a ſtate are oftener paſſed over unnoticed, and the remote cauſe for ſuch conſtitutional ſymptoms is not enquired after.

Yet

Yet even, on enquiry, ſo little information, on ſome account or other, is gained, that they would ſeem to depend upon ſome unknown, or unobſerved, cauſe, producing a læſion of ſome one, or more, of the functions of the conſtitution, through moſt probably the *medium* of ſome debilitating affection of the PRIMÆ VIÆ.

It is not therefore to be concluded, becauſe an evident cauſe of the general debility cannot be either clearly aſcertained by the phyſician, or readily acknowledged by the patient, that ſuch impetiginous diſorders do not depend upon ſome remote operation, tending to the induction of ſuch a ſtate of the ſyſtem.

Patients are not always very willing to explain, or lay open, either the imperfections of their conſtitution, or their habits of living; neither are medical men very much diſpoſed to ſcrutinize narrowly into the conduct of their patients; particularly when the connection between cauſe and effect is not very eaſily explained, and often not even thought about.

Theſe

Theſe difficulties in the way of the practitioner may, in ſome degree, account for the little knowledge, which has hitherto been gained, on this particular part of our ſubject.

Agreeable to the aforementioned obſervations, it has been remarked by ſome authors, that thoſe women who are liable to an irregularity of the menſtrual flux, which has always been looked upon as, in ſome way or other, connected with a derangement in the healthful ſtate of the ſyſtem, are alſo very liable to be affected with cutaneous eruptions. They are generally, from what I have obſerved, of the inflammatory or puſtular kind, occaſioned by the irritable ſtate of the true ſkin.

Some have been of opinion, that ſuch affections have commenced from either *morbific matter*, or *plethora*, in the ſyſtem, as the ſimple conſequence of the ſuppreſſed *catamenia*. But then it muſt be admitted, that the *menſes* carry off ſomething more than the ſimple redundancy of the habit,

a *ſomething* noxious in the blood, which is an opinion I cannot at all coincide with.

It is more rational to conſider menſtruation, as an eſtabliſhed function of the uterus, for a limited period of life, ariſing from its being a ſpecifically organized part of the body, and not always to be under the guidance of the general habit, though occaſionally connected in the following manner with the ſkin.

I am therefore diſpoſed to think, that both the uterine ſuppreſſion, and the cutaneous eruption, may be owing to one and the ſame general pathological principle, to wit, the want of due action, and its conſequence, the unavoidable loſs of balance in the capillary veſſels, forming every where the extreme parts of the circulating ſyſtem, and not entirely dependent on either a plethora or inanition of the conſtitution.

This pathology, as applicable to the preſent ſubject, permits me to ſay, that it is probable, that at one time, or under one ſtate of the ſyſtem, uterine veſſels contain

tain a ſerous, and in another ſtate of the ſyſtem, a ſanguineous, fluid. This fluctuating condition of the uterine veſſels holds out an apparent connection between the leuchorrhæal and hæmorrhagial ſtates of the *uterus*, as depending on the general habit of the capillary ſyſtem.

I cannot reſiſt here obſerving, that my mind inclines me much to look on all thoſe internal ſurfaces, immediately leading, by their external orifices, or more properly ſpeaking paſſages, to, or through, the CUTIS VERA, (independent of their being furniſhed with any thing like to the cuticular membrane, or *epithelion*, as taken notice of before,) as analogous in their connection with the circulating ſyſtem, to the outer ſurface of the body, and therefore ſubject to the ſame general law in the animal œconomy, which ſeems to me to have eſtabliſhed a neceſſary balance in the ſyſtem of capillary veſſels, as important to all the healthful functions of the natural, though variable, conſtitutions of mankind.

TIME muſt prove, whether I am right in giving ſo great a latitude to this phyſiological doctrine; and it can only be done by the minds of men firſt admitting the poſſibility by analogous reaſoning, and then proving, by facts and cautious induction, the probability of many other phœnomena of diſeaſe in the human body, being dependent on ſuch a pathological principle.

I ſhall make one other obſervation connected with this capillary balance of the ſyſtem.

The air cells, or cellular ſurface, of the lungs, are very likely to be connected with, and affected by, any derangement in the cutaneous capillary circulation. In proof of this it may be mentioned, that eruptive diſeaſes of the ſkin ſometimes occur, which appear to alternate with pulmonary affections.

Such caſes have been brought forward in ſupport of the opinion, that a morbific matter

matter has prevailed in the ſyſtem, and has alternately affected theſe parts. But this doctrine will not, in my opinion, laſt long *any where*, and has no juſt foundation.

Until, therefore, morbific matter is better explained, and better defended, than it is at the preſent day, I can give no credit to it, or the explanations founded on it; and am much inclined to an opinion, that the above alternate changes in a diſeaſed conſtitution depend upon the morbid ſtate alone of the capillary veſſels of the parts affected, ariſing probably from the alternate operation of ſome debilitating cauſe, which may have diſturbed the healthful balance of the ſyſtem, in the volume of the circulating fluids.

What I think tends to ſupport my opinion, in this explanation, is, that ſuch a combination of affections is moſt commonly met with in young people, about the time of the *acme*, when the balance of the fluids is moſt readily affected, and certain natural changes ſhould take place in the ſyſtem.

When I come to obſerve more particularly on the diſeaſes which are moſt prevalent in infancy, and to which man was expoſed, and, indeed, with which ALL MANKIND, moſt probably, were afflicted, immediately upon, or let me rather ſay, very ſoon after, their birth into the world, it will appear natural, and, in fact, inherent in our conſtitution, to be daily expoſed through life to the viciſſitudes of external and internal diſeaſes, and particularly to alternate changes between the cutaneous emunctory, and the condition of the alimentary canal.

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SECTION XIX.

ON IMPETIGINOUS AFFECTIONS FROM IDIOSYNCRACY OF THE STOMACH, WITH THEIR EXPLANATION.

IT cannot be a matter of ſurprize to any one, who properly reflects on the multiplicity of impetiginous diſeaſes, joined to the variegated form and conſtitutional temperament of mankind, that there ſhould be ſome cutaneous affections, of whoſe nature and origin it is not eaſy to offer any explanation, and which would ſeem to proceed from a peculiar idioſyncracy in the habit, and particularly of the ſtomach.

There are many practitioners, who have, at all times, obſerved, that ſome people will

will very ſoon become affected with efflo-reſcencies of the ſkin, after having eaten of ſalmon, herring, &c. or after having taken down certain matters offenſive to their ſtomach, or digeſtion.

On this principle are antipathies formed *in ſome conſtitutions* to many kinds of aliments, which, with moſt other people, are in common uſe. If *ſuch* of mankind were not conſtantly on their guard, we ſhould more frequently meet with theſe particular caſes of impetiginous affections, and efflo-reſcencies of the cutaneous papillæ.

There is no article of the *materia medica*, or the *materia alimentaria*, but which may, at ſome time or other, in ſome particular habits, prove offenſive to the ſtomach. As a proof of this, it has lately been mentioned to me, by a very near relation, that he knew a remarkable inſtance of this idioſyncracy, in which honey, even in a ſmall quantity, always occaſioned a conſiderable nauſea, ſoon after which, efflorescencies would appear in many different parts of the ſkin.

When

When theſe efflorescencies occur on ſuch occaſions, they take place without the tranſmiſſion of any fluid through, or under, the cuticle: the ſeat of the affection appears, therefore, to be in the veſſels probably connected with the *papillæ* on the outer ſurface of the *cutis vera*, in contact with the *rete mucoſum*.

I ſhould ſuppoſe, that ſuch cutaneous appearances muſt depend upon ſomething more than the indigeſtible nature of any aliment, or matter received into the ſtomach; and, therefore, have been very properly attributed to a peculiar idioſyncracy of that organ, ſhewing itſelf by the eſtabliſhed balance between the external and internal capillary veſſels.

VAN SWIETEN, notwithſtanding he laid great ſtreſs on the exciting effects of indigeſtible matters in the ſtomach, as aggravating the ſymptoms of the ſcurvy, by their irritating and weakening effects on the ſtomach, has ſtill furniſhed us with a caſe of this kind, to prove that the idioſyncracy ſometimes takes place. He has mentioned

a caſe,

a caſe, in which he knew crabs claws immediately produce efflorescencies on the ſkin, on being received into the ſtomach.

Theſe impetiginous effects, from ventricular idioſyncracy, are commonly ſudden: but there is good reaſon to ſuppoſe, that noxious *ingeſta* of the ſtomach and inteſtinal canal may, on ſome occaſions, operate *ſlowly*, in producing cutaneous affections, by the ſympathetic connection of veſſels. When *that* is the caſe, there is probably ſome difference in the ſeat of the cutaneous irritation, which I ſhall beg leave to explain in the following manner.

I ſhall, *in the firſt place*, obſerve, that when a foreign matter of the offenſive kind is received into the ſtomach, and, from its apathy to it, or its peculiar idioſyncracy, it deranges the ſympathetic balance between the external and internal capillary veſſels in a ſudden manner, I am inclined to think, that the inordinate action takes place in the capillary veſſels on the outer ſurface of the CUTIS VERA, carrying red blood, and connected

her, eat of pea ſoup, boiled in a tin ſauce-pan, or veſſel, but diſtributed to them with a braſs ladle, which had not been uſed for ſome time, and which, when taken down, was coloured quite green with verdigris. They had imprudently uſed it without cleaning, or even wiping it. Two days after they were all affected with a cutaneous eruption of the leprous kind, more or leſs over the whole body, and very much amongſt the hair of the head. Their ſtomachs were not obſerved to be affected: but the eruption was in exact proportion on each, to the quantity of the ſoup which each had ſwallowed. The eruptions continued coming out for five days; after that period they became browner and browner, and gradually diſappeared, without leaving any mark on the ſkin: with, however, this exception, that the girl, who had eaten moſt heartily of the ſoup, continued to have more or leſs of the complaint two months.

This laſt curious circumſtance, though an exception to the reſt, very much ſupports the opinion I lately threw out, and

which, by more attention in future to impetiginous practice, will, I think, be frequently obſerved, namely, that many of the impetiginous affections of the leprous, and *lepro-herpetic*, kind, which we are ſo frequently called upon to treat medicinally, in the young, and otherwiſe apparently healthy, habits, may have ariſen from ſome offenſive *ingeſta*, or foreign deleterious matters, topically noxious to the vaſcularity of the ſtomach, and inteſtinal canal, and, therefore, rouzing the operation of the ſympathetic irritability between the muſcular fibres of the external and internal extreme veſſels, either from a ſtimulant or ſedative effect in the *primæ viæ*, which probably operates *too ſlow*, in moſt caſes, to raiſe any ſuſpicion in the mind of the practitioner, that ſuch accidental, and perhaps trivial, cauſes ſhould be in any way capable of deranging the balance of circulation, in the ſyſtem of capillary veſſels.

The reaſon of ſuch a derangement may be attempted to be explained, at ſome future period, on the principle of a VIS CONSERVATRIX SALUTIS.

Before

nected with the PAPILLÆ PYRAMIDALES, whose action for a time is increased, or whose circulation is impeded, without a supposed effusion into the cellular membrane, from rupture of vessels: and this I have known to have sometimes happened suddenly, in a particular state of the system, from the morbid effects of cold liquids, &c. received into the stomach.

But, *in the second place*, if any length of time elapses between the receiving a noxious matter into the stomach, and the appearance of a cutaneous affection in consequence of it, I am then disposed to believe, that, from its sedative, or other morbid, effect on the established connection between the aforesaid capillary vessels, the RETE MUCOSUM with its *epidermis* are most likely to be disordered, and afford the impetiginous SQUAMULÆ.

In the manner last described may be produced those leprous affections, which we are so frequently meeting with, in otherwise tolerably healthy habits, and which are most commonly of much longer duration, than

the ſudden cutaneous efflorescencies, from the peculiar idioſyncracy of the ſtomach.

Perhaps it oftener happens than is ſuſpected, that ordinary food, when it diſorders by indigeſtion, under particular circumſtances of the conſtitution or temperament, may be an occaſional cauſe, ſlowly exciting ſome kinds of impetiginous diſeaſes.

Of the nature of this laſt deſcribed ſpecies of impetiginous affection I conſider thoſe caſes, ariſing from ſome deleterious effects of copper, of which a full hiſtory will be given in the next, (or ſome future) volume of the *medical facts and obſervations*, publiſhed by my learned friend, DR. SIMMONS, and which I lately communicated to him. I received them from MR. W. DAVIDSON, apothecary, in *Queen Ann-ſtreet eaſt*, by whom they were drawn up, and under whoſe ſkill and attention they had fallen. The facts were ſhortly the following.

A mother, with her four young children, and three young women who had viſited her,

I think this explanation will be made to appear more probable, by drawing an analogy between the operation of theſe offending *ingeſta*, and the well known effects of nauſeating doſes of emetic medicines; for when ſuch have been taken into the ſtomach, and are afterwards paſſing through the inteſtinal canal, they, of themſelves alone, *i. e.* without the immediate aſſiſtance of diluents, will produce ſweat, which alteration in the ſtate of the ſkin we may venture to explain, by ſuppoſing, that either their ſedative, or their irritating, effects on the internal extreme veſſels, cauſe, by ſympathy, either a relaxation, or an increaſed action, of the veſſels on the cutaneous ſurface of the body.

If this analogical reaſoning be fair, may it not be likewiſe ſuppoſed, that many certainly ſedative matters,* when applied to the ſtomach, may check the vaſcular ſecretions

* I have, on ſome occaſions, ſuſpected, that opiates, when adminiſtered in various complaints, have unexpectedly diſordered the ſyſtem, and failed of their intended effect, on this principle. This point is worth attentive conſideration in ſome conſtitutions.

cretions going on in it, and though it may be queſtioned, whether there is more than one, yet it muſt be admitted, that they may particularly affect or weaken that one, namely, the ſecretion of the SUCCUS GASTRICUS. And that, in conſequence of a ſimilar occurrence, from ſympathetic irritability in the moving powers on the cutaneous ſurface of the body, by the natural conſent of parts, the perſpirable matter may be retained, and, by an after-acquired acrimony from ſtagnation, that it may produce this or that kind of cuticular eruption, according to the ſtate of the cutaneous ſecretion, and the condition of the adjoining minute parts.

I think there is a probability of this being the manner in which ſome diſeaſes of the ſkin are brought about. But till we are better informed by the experiments and obſervations of phyſiologiſts on the doctrine of digeſtion itſelf, all our reaſoning by analogy on this ſubject may fall to the ground.

I am

Before I conclude the preſent ſection, I ſhall venture to account more fully for thoſe very ſudden efflorescencies on the ſkin, which have been before taken notice of, as the effects of the peculiar idioſyncracy of the ſtomach; and I am encouraged to this attempt, from finding, that no better pathological explanation of ſuch affections has been offered, which I know of, and which might be deemed in the full ſenſe ſatisfactory.

Let the following, therefore, be received as a general one for ſuch cutaneous appearances, founded on the foregoing obſervations and doctrine, and as more particularly expreſſing, than I have done before, the *modus operandi*, either from apathy or idioſyncracy, of ſuch offenſive *ingeſta*.

May it not be ſuppoſed, immediately after ſuch offending matters have been taken into the ſtomach, that they act, in ſome particular manner, as irritating particles to the ſuperficial veſſels of that organ, which veſſels, at all times, penetrate through the *villous coat*, and probably afford the gaſtric fluid:

fluid:—that they may even injure this *ventricular epithelion*, and perhaps occaſion a temporary abraſion or deſtruction of it, and thereby expoſe the extreme gaſtric veſſels to be too readily acted upon by the offending matter:—and that, from the ſympathy and conſent between the ſtomach and the exterior ſurface of the body, this ſingular idioſyncracy cauſes, or, at leaſt, materially aſſiſts in occaſioning, a partial increaſed action of ſome of the capillary veſſels of the cutis vera?

It is not impoſſible, but ſome medical men would rather incline to the opinion, that a ſympathetic influence, exerted in the nervous *fibrillæ*, would better explain it; but then they cannot do this without the intervention of the brain. (Perhaps it would better explain ventricular affections from apathy only:) but I am moſt diſpoſed to think the irritability of the extreme veſſels ſo ſuperior on ſuch occaſions, owing to the great proportion of muſcular fibre in their ſtructure, as to take the lead in the production of theſe kinds of cutaneous affections.

I think

I am ſtill, however, moſt diſpoſed to think, that the vaſcularity of the ſubſtance of the ſtomach, connected with the villous coat, is the true ſource of the ſecretion of that menſtruum, which is ſuppoſed to promote digeſtion, and to be capable, after death, of deſtroying or diſſolving the ſtomach itſelf; and that it is not, as ſome writers have imagined,* the office and the province of the *villous coat*, which, if PROFESSOR MONRO is right, (and I believe him to be ſo,) can only be looked on by the phyſiologiſt, and the phyſician, as a membranoſe ſurface, analogous to the *epidermis* of the CUTIS VERA, with, probably, a different appearance and condition, as belonging to a very variable organ, from the effects of its diurnal dilatation and contraction, as well as from its not being expoſed to the effects and action of the atmoſpheric air.

It would be juſt as correct and proper, to ſay, that the perſpirable fluid is the ſe-

 cretion

* MOORE, in his ESSAY ON THE MATERIA MEDICA, 1792.

cretion of the cuticle itſelf. The terminations of ALL the extreme veſſels require a *nidus*, as ſome ſupport, as well as defence, to them, and *ſuch*, I think, is the *villous coat*.

Nevertheleſs, examples of ſuch ſudden and ſingular impetiginous effects, from a peculiar idioſyncracy of the ſtomach, on offenſive matters being received into it, are rare: yet they afford a preſumptive proof at leaſt, that the eſtabliſhed connection, between the ſtomach and the ſkin, takes place between the CAPILLARY VESSELS only, they being certainly the parts more immediately in contact with the offending ingeſta, whether belonging to the *materia medica*, or the *materia alimentaria*, particularly as THEY muſt penetrate the *inſenſible* villous membrane, or, as it may now be called, VENTRICULAR EPITHELION, agreeable to DR. MONRO's anatomical opinion. Such veſſels muſt, therefore, be the moſt readily affected.

The fact (for I will ſo call it) militates ſtrongly againſt DR. CULLEN's opinion, and

and explanation of the ſympathy, as being occaſioned by an atony, produced in the PARIETAL* muſcular fibres of the ſtomach.

* For DR. CULLEN's particular obſervations on this POINT, ſee the DOCTOR's letter to the author, page 124 of the TREATISE ON SYMPATHY.

DERMATO-PATHOLOGIA.

SECTION XX.

THE SUMMARY OF THE NEW PATHOLOGY OF IMPETIGINOUS DISEASES.

I NOW feel myſelf in the ſituation of a ſick man, anxiouſly arriving at the criſis of his diſorder, the event of which is both to him and to his phyſician uncertain. So it will remain at preſent, I hope, between me and my LEARNED READER, until he has read through the preſent ſection, unleſs HE has already received ſuch unfavourable impreſſions, as prognoſticate to his own mind, that the theory cannot be upheld, and that the criſis of my addreſs, and all the *preceding obſervations*, to him, do not deſerve a SUMMARY, and ſhould, therefore, fall to the ground.

I ſhall

I ſhall ſtill look upon theſe *reflections*,

" Nuper ſollicitum *quæ* mihi tædium,
" Nunc deſiderium, curaque non levis."
HOR. CARM. Lib. I. Od. 14.

as promiſing ſome ſatisfaction to me, if they but merit, in their preſent imperfect form, the reader's thoughtful inveſtigation and enquiry.

But, to the point.

From all that I have been able thus briefly, and with attention, to collect, as important and intereſting to the ſubject, from my own, as well as the obſervations and reflections of others, (and which I wiſh I could have had time to have better arranged, before I had ſent any of it to the preſs,) I am led to conclude, that an obſtruction to the circulation of the cutaneous and epidermitical extreme veſſels, in ſome way or other occaſioned, or ſupported, by an atony, perhaps even a paralyſis, of them, conſtitutes the whole, or principal part, of the pathology of almoſt all impetiginous affections,

affections, or the eruptive diſeaſes, SINE PYREXIA PRIMARIA, which may afflict the human ſkin: and which vaſcular atonic ſtate I conſider as their PROXIMATE CAUSE, and that IT has its foundation either on a general debility of the *muſcular ſyſtem*, or in a partially impaired or diſturbed action of *the extreme veſſels of the ſtomach* itſelf, and on ſome occaſions, perhaps, of *thoſe of the inteſtinal canal*, from a ſympathetic connection of all *theſe veſſels* with *thoſe* of the TRUE SKIN, and its EMANATIONS.

To ſum up the whole in a general way, I ſhall therefore venture to deliver it as my opinion, that the PATHOLOGY of CUTANEOUS DISEASES is as follows, whether they are to be conſidered as partial, or topical, affections of the TRUE SKIN, with ITS ſeveral internal as well as external appendages, and as ſuch, IDIOPATHIC;—or as diſeaſes properly SYMPTOMATIC of an internal indiſpoſition of the ſyſtem: for they ſhould ALL be looked on as derangements of, or deviations from, the healthful condition of the CUTIS VERA, as affecting one or other, if not

not all, of its appendages, and itſelf to be viewed, either as AN EMUNCTORY for the relief of the ſyſtem at large, or as liable to its ſpecific organic affections, independent of a præternaturally ſaline, or any other morbid, ſtate of the blood, commonly denominated a cachectic habit; the whole brought about by the interrupted, or deranged, motions, and moving powers, properly inherent in the TRUE SKIN, on the principle of its muſcular ſtructure.

The SKIN, when viewed in this, its proper and important, light, ought no longer to be called a *common integument*, but ſhould be looked on as an ORGAN of the firſt conſequence to all the functions of HUMAN LIFE, and connected with ALL ITS DISEASES.

If I ſhould ſeem to my reader to have gone too far at preſent, in applying THE DOCTRINE *to eruptive diſeaſes, properly ſymptomatic of an internal indiſpoſition of the ſyſtem*, it ariſes from my mind being ſtrongly impreſſed with the idea; AN IDEA I do not at

preſent

preſent fully defend, but which ALL MEN in time may find arguments to ſupport.

THE SUMMARY OF THE NEW PATHOLOGY.

THE REMOTE AND OCCASIONAL CAUSES of impetiginous affections operate with a ſedative effect, and induce A DEBILITY of the nervous and muſcular ſyſtems, whereby the VITAL FUNCTION OF THE HEART and arterious ſyſtem, and the IRRITABILITY of the former, are conſiderably and particularly affected:——That this DEBILITY and IRRITABILITY, will be moſt readily felt at the EXTREME VESSELS every where terminating, but more eſpecially in the CAPILLARY VESSELS of the PRIMÆ VIÆ and TRUE SKIN:——That, from their partial operation, a ſerous or lymphatic PLETHORA will be formed, and a STAGNATION or OBSTRUCTION of the PERSPIRABLE FLUID will take place:——That the DETENTION of this MATTER will in a given, though uncertain, time prove a STIMULUS to the TRUE SKIN, increaſe the

the action of the CAPILLARY VESSELS, and produce the DIFFERENT AFFECTIONS there occurring, according to the STATE of the effused and secreted matter, the PECULIARITY of the temperament, and the CONDITION of the neighbouring minute parts:——and that the ERUPTIONS, and other CUTANEOUS APPEARANCES, become general, or take place in only this or that part of the body, according to the STATE of the whole CIRCULATING SYSTEM, and the extent of the VASCULAR DEBILITY and IRRITABILITY, which may be supposed partial for the time, and arising from a DIMINUTION of the NERVOUS and MUSCULAR ENERGIES at the part impetiginously affected; which DIMINISHED ENERGIES, in a greater or lesser degree, have deranged, or entirely destroyed, the CIRCULATION in the EXTREME VESSELS of the ARTERIOUS SYSTEM so affected, most probably by having caused a WEAKNESS in their ACTION, or a PARALYTIC AFFECTION of these CAPILLARY VESSELS.

It is material, that I here introduce the following observations:

When we are ſo clearly made eye-witneſſes of the ſteady exiſtence of a brain, and of the regular diſtribution of nerves to all parts of an animal body, notwithſtanding we ſtill remain unacquainted with their ſpecific function, and modus operandi, in our machine, I cannot altogether ſet aſide the probable connection, that there muſt be, between nervous and muſcular excitement, and therefore, in the above ſummary, I have equally ſuppoſed the co-operation to take place, in the origin of impetiginous affections.

But though I have done this, I very much think, that the ſenſorium and nervous ſyſtem often do no more, than ſympathiſe with the debility and irritability of the ſyſtem of muſcular or moving fibres, and with the loſt balance, and impaired connection, between the extremes of the circulating ſyſtem, to wit, the heart, and the arterious capillary veſſels.

Let it be remembered, that a human creature is often born without a brain, but I believe never without a heart: without the

the latter, and an arterious ſyſtem, its growth, and anti-parturient exiſtence, could not have taken place. Their importance to the life of the animal ought, therefore, to be conſidered as præ-eminent, and as moſt concerned in cutaneous diſeaſe.

In what manner the atmoſpheric air may influence, or in what degree it may promote, the riſe and progreſs of impetiginous diſeaſes, from its connection with the abſorbent veſſels, independent of its ſuppoſed action on the cutaneous extreme arteries, I am not at preſent prepared to diſcuſs, and I am afraid it will never be poſſible to eſtabliſh theſe nice diſtinctions. I ſhall only now take the liberty to ſay, that, from what I have curſorily obſerved, I think moſt of them are in ſome way aggravated by contact with the air, varying in its effects according to the temperament of the conſtitution, and the peculiar irritability of the ſkin.

I very ſtrongly indulge in the hope, that ſome one part, or other, of the preceding

pathological doctrine, will apply to almoſt all exanthematous, and impetiginous, affections of the TRUE SKIN, AND ITS EMANATIONS, whether attendant on the inflammatory, or what has been commonly called the cachectic, temperament.

And here let me recommend the candid reader to reflect, that our late illuſtrious MODERN SYSTEMATIC, whom I have with pleaſure ſo frequently mentioned in the courſe of this treatiſe, felt the ſame impreſſions on his mind, and made the ſame obſervation, when he addreſſed himſelf to his hearers, from the PRACTICAL CHAIR of THE UNIVERSITY of EDINBURGH, on the SUMMARY of his febrile doctrines of ATONY, SPASM, and RE-ACTION.

As a general pathology of fever, it labours under the ſame difficulties, and diſadvantages, as the object of this eſſay, A NEW IMPETIGINOUS DOCTRINE, in as far as it cannot apply but in part to every *ſpecies*, or even GENUS of pyrexial diſeaſe.

It

It has, nevertheleſs, been admitted, for ſome conſiderable time, in this country, as the beſt which has been offered, as a guide to the medical practitioner, in febrile diſorders. Yet I have always conſidered it as defective in ſome part of the theory, though ſafe on moſt occaſions in practice, when I have minutely compared it to the whole of the principles of the animal œconomy: and, therefore, in the ſecond part of my treatiſe on ſympathy, which I compiled AT THE TIME, when I attentively engaged in ſtudying, with the view of becoming fully acquainted with, DR. CULLEN'S DOCTRINE, I have ventured to offer one, more conſonant with my ideas of the anatomy and phyſiology of the human body, though I knew well, that the firm adherents of the profeſſor would not liſten to me AT THAT TIME.

I ſhall, therefore, think it an honour done my early labours and reflections, in the wide field of medicine, whenever the medical ſtudent thinks it worth his while to compare my ſummary of PYREXIAL DISEASE with DR. CULLEN'S, by referring, when

when he intends ſeriouſly to be informed on the ſubject, to the paragraphs, CCLVI. and CCCLXIV. of the ſecond part of that treatiſe, particularly if he has any view to improve our knowledge of this part of medical ſcience, from having himſelf paid very great attention to the ſubject.

But, to return to the ſpecial object of this ſection.

Let it be obſerved, as drawing my pathology of cutaneous diſeaſes to a concluſion, that it ought not, and I think it will not, occaſion ſurprize in the reader, that the impetiginous doctrine, here laid down, has been offered to him ſo complicated, after he has attentively conſidered, and well digeſted, the importance, as well as the number, of the minute parts, entering into the ſtructure of the CUTIS VERA, independent of the EPIDERMIS and RETE MUCOSUM, and their immediate connection with all the functions, as well as the diſeaſes, of the animal ſyſtem.

FEVER,

FEVER, ſingly, from there being but little variety in its ſeveral genera and ſpecies, will admit of a more contracted, and apparently a more connected, doctrine; for it is one uniform derangement of, or interruption to, the functions of all the VISCERAL ORGANS, as well as a check to the excretions from the capillary veſſels of the SKIN and INTESTINAL CANAL; THE WHOLE OF IT denoted by the altered ſtates of the CIRCULATION and RESPIRATION;—by THIRST and the LOSS OF APPETITE;—by the condition of the URINE, and the OBSTIPATED HABIT of the body;—by the change in TUMOURS and ULCERS on the outer ſurface of the body;—and by the diminution of the GENERAL SENSIBILITY, as well as the affections of THE SENSORIUM.

Such PHŒNOMENA are always obſervable at the regular commencement of a febrile paroxyſm, and are deviations from thoſe neceſſary organic operations, which are conſtantly going on in a perfect ſtate of health. Still FEVER, from the difference in the remote cauſes, as well as the differ-

ence

ence of the temperaments, is certainly variable in ſome of its PHŒNOMENA.

On the other hand, the various chronic diſorders of the TRUE SKIN, and its EMANATIONS, have their ſpecific and immediate cauſes locally produced, from an indirect partial operation of the remote cauſes, and yet are ſeldom, though they are only local diſeaſes, without being accompanied with more or leſs of a febrile irritability, even when the temperament, from either the conſtitution, or the mode of living, is not ſanguineous or plethoric.

When all theſe circumſtances are fully taken into the account, and added to the difficulty, which ALL have acknowledged, and experienced, in endeavouring theoretically to inveſtigate, as well as practically to treat, CUTANEOUS DISEASES, I feel prepared to expect, and not to be myſelf ſurprized, that my reader ſhould heſitate to enter very readily with me into all the reaſoning I have made uſe of. I fear, that I ſhall puzzle much oftener than convince him: particularly if he is not prepoſſeſſed in favour

vour of medical doctrines in general: for I well remember how cautiouſly DR. CULLEN's theory of fever, and all his opinions, uſed to be received at EDINBURGH, even by the young mind of the curious enquirer, the indefatigable and reflecting ſtudent.

Yet I have to hope, that every claſs of readers, from THE STUDENT to the TEACHER, will be ſo impreſſed with the importance, as well as the difficulty, of the ſubject, as to ſhew ſome charity towards this humble and hazardous, though, I flatter myſelf, not wholly unſucceſsful, attempt.

THEIR future conſideration of it may clear up many of its obſcure, and make perfect many of its deficient, parts, and will then amply repay me for having ventured, thus publicly, to draw their attention to this important claſs of diſeaſes, and yet HITHERTO INSUFFICIENTLY EXPLORED BRANCH OF MEDICINE.

DERMATO-PATHOLOGIA.

SECTION XXI.

GENERAL OBSERVATIONS ON CULLEN'S CLASS CACHEXIÆ, WITH HIS DEFINITIONS OF SCROPHULA, SYPHILIS, AND ICTERUS, TO SHEW MORE FULLY THE IMPROPRIETY OF HIS NOSOLOGICAL ARRANGEMENT OF THEM; WITH ALSO THE DEFINITIONS OF HIS OTHER IMPETIGINOUS DISEASES.

HAVING, in the firſt ſection of this part of the work, *only briefly* endeavoured to make it appear, that SCROPHULA, SYPHILIS, and ICTERUS, are not impetiginous affections, and that they are, therefore, improperly claſſed in DR. CULLEN'S

SYNOPSIS

SYNOPSIS NOSOLOGIÆ METHODICÆ, I feel it *on that ground* incumbent on me, to conclude with ſome further obſervations on thoſe diſeaſes, in a noſological point of view, and with their three ſeveral generic characters as cutaneous affections, they having been arranged by the NOSOLOGIST as impetiginous diſeaſes, from a ſuppoſed cachectic or cacochymic ſtate of the conſtitution.

The fourth ſection of my work has, alſo, been particularly intended to ſhew, that *impetiginous affections do not properly belong to the claſs* CACHEXIÆ, on the principle, that they are in general local diſeaſes, and not always dependent on a cachectic habit, or a cacochymic ſtate of the blood, or circulating fluids.

It would have been better, if I had introduced the definitions of the above diſeaſes before, but I did not, at that time, think, that they were to be conſidered, as ſo eſſentially connected with the ſubject of a DERMATO-PATHOLOGIA, as I now do. It has been commonly the unavoidable lot of all firſt editions of works, on general

ſubjects, to be, in ſome reſpects, incorrectly put together. The reader, I truſt, will excuſe it.

I ſhall premiſe ſome general obſervations on this claſs of diſeaſe in CULLEN's ſynopſis.

If I was to venture a general opinion on the diviſion, and the affections, which form the object, of DR. CULLEN's claſs CACHEXIÆ, agreeable to the firſt principle of diſeaſe, which I have laid down for myſelf, as the rule of my own conduct in practice, I ſhould ſay, that it abounds with inconſiſtencies, and contradictions.

IT has been characterized, as intended to include all thoſe diſeaſes, which are ſuppoſed to depend upon "a depraved "condition of the whole, or greateſt part, "of the body, without being accompanied "with a primary fever, or a nervous af-"fection." Yet it has been admitted by the NOSOLOGIST, that the *pyrexia hectica* characterizes ſome *ſpecies* of diſeaſe in this claſs.

With

With respect to his *habitus depravatus*, I think I have just reason to conclude, from the professor's not having given up the whole of the doctrine of the humoral pathology, but, on the contrary, had continued to be of opinion, that it was the chief foundation of impetiginous diseases, that *that particular expression* refers principally to a supposed diseased state of the fluids of the human body.

MARCORES, the first order of CACHEXIÆ, has been defined to be "a leanness or wasting of the whole body." It has but two GENERA, the TABES and ATROPHIA. The TABES bears a strong relation to the advanced stages of PTHYSIS PULMONALIS, and SCROPHULA, and seems, by its various *species*, to be in general the *sequela* of those affections. The ATROPHIA seems to be either the convalescent state, after many various disorders, or the extreme degree of a state of inanition.

THEY

THEY therefore appear not, in my opinion, properly diſtinct GENERA, but are commonly attendant on ſome local morbid affection, from an impaired ſtate of digeſtion, or chylification, which are often brought about by the tardy operation of many various cauſes, and which are alſo frequently attended with ſome degree of an impetiginous eruption.

INTUMESCENTIÆ, the ſecond order of CACHEXIÆ, which has been defined to be "a tumefaction of the whole, or the "greateſt part, of the body, towards the "outſide, (extrorſum,) or outward parts," includes a very great variety of local affections, connected with ſome morbid condition of the conſtitution, from, as I ſuppoſe, a depraved ſtate of the motions, or moving powers, of the parts affected.

The greateſt number of the diſeaſes of this order do not ſeem to me to ariſe from a *habitus fluidorum depravatus*, but, in my opinion, appear to depend upon ſome ſpecific, and inordinate, organic action at the particular

particular ſeat of thoſe ſeveral affections, which have been ſuppoſed to pertain to this noſological order.

POLYSARCIA, PHYSOMETRA, HYDROMETRA, HYDROCELE, PHYSCONIA, &c. are all diſeaſes from a local cauſe, and, as I am diſpoſed to think, are dependent upon ſome topical derangement in the ſyſtem of the capillary veſſels.

IMPETIGINES, the third order of CACHEXIÆ, is thus characterized by the noſologiſt, "A cachectic ſtate, principally disfiguring the ſkin and outward ſurface of the body."

SCROPHULA, the firſt GENUS of the order, has been defined by DR. CULLEN in the following manner.

"Glandularum conglobatarum, præſertim in collo, tumores; labium ſuperius, et columna naſi tumida; facies florida; cutis levis; tumidum abdomen."

HIS

His deſcription of this diſeaſe clearly expreſſes it as connected with the ſanguineous temperament; it alſo includes ſymptoms which have no reference to the condition of the ſkin, and which are ſeldom all met with in the ſame caſe, or in any other than the above conſtitution.

It therefore moſt evidently appears to accompany the irritable vaſcular, or muſcular, habit, and is, ſtrictly ſpeaking, a diſeaſe of the lymphatic abſorbent ſyſtem; and, as deſcribed above, by the leading features of a diſeaſed ſtate of the conglobate glands, muſt readily be admitted as not properly belonging to the order of impetiginous affections.

SYPHILIS, the ſecond GENUS of this order, has been thus delineated.

" Morbus contagioſus, poſt concubitum
" impurum, et genitalium morbum,
" ulcera tonſillarum; cutis, præſer-
" tim ad margines capillitii, papulæ
" corymboſæ, in cruſtas et in ulcera
" cruſtoſa

" cruſtoſa abeuntes; dolores oſtocopi;
" exoſtoſes."

If the opinion which I threw out in the forty-third page, and particularly if thoſe ſentiments which MR. J. HUNTER has promulgated, concerning this diſeaſe, be well founded, namely, that the *phœnomena* of the LUES VENEREA all depend upon the affected parts having been, at the firſt, only diſpoſed to diſeaſe, by the paſſage of the *ſyphilitic virus*, after its abſorption, through the habit and the circulating ſyſtem, and that *it* does not remain in the habit, but quits it, leaving the blood of a ſyphilitic patient uncontaminated, while the external ſurface of the body is only diſeaſed, then I ſhould feel diſpoſed to give up my objections to its being arranged among the impetiginous diſeaſes, and I ſhould then conſider it as a morbid action and affection of the ſyſtem of capillary veſſels, perfectly independent of a *virus*, or cacochymic ſtate of the fluids.

But the remote cauſe of this diſeaſe, being a ſpecific, nervous, and muſcular

OPERATION, connected with a ſpecific, and very virulent, MIASMA, each, SUI GENERIS AB ORIGINE, might be a reaſon for removing it from an impetiginous claſſification, independent of its ſometimes affecting the deeper ſeated capillary veſſels; for inſtance, thoſe in the oſſeous parts.

Nevertheleſs, when I conſider it, as occurring at all ages, and in all conſtitutions, with the appearance of being ſtrictly a local, and not a cachectic or cacochymic diſeaſe, but depending on an unknown principle, connected with the moving powers of the capillary ſyſtem, I am myſelf much diſpoſed to agree with MR. HUNTER, in his pathological opinion of the *lues venerea*; and which, I imagine, puts on its various forms according to the idioſyncracy of the conſtitution, and the irritability of the capillary veſſels.

Having only become acquainted with MR. HUNTER'S particular opinion on this ſubject, ſince I printed the firſt ſection of this work, in which I then ſaid, that a peculiar idioſyncracy was concerned in occaſioning

caſioning the variegated appearance of the diſeaſe, but, at which time, I only ſuſpected, that the blood might not be contaminated, it has become the more neceſſary that I ſhould make the preceding obſervations, in ſupport of that idioſyncracy.

To arrange ICTERUS, above all things, in an order of impetiginous affections, depending, as ſuppoſed, on a cacochymic habit, ſeems to me very extraordinary. This diſeaſe, which has been ranked laſt in the liſt of the GENERA of this order of CACHEXIÆ, as if it bore an ambiguous complexion, may be ſaid never to occur, (if it is always to be looked on as a bilious diſeaſe, which, from the definition of it, it muſt be,) but from ſome morbid affection, or action of the liver, or diſturbed condition of the biliary ducts, and it therefore merits, and ſhould be diſtinguiſhed by, a more proper generic character, marking the true ſeat and cauſe of the diſeaſe.

As it is now deſcribed in our improved noſology, it is characterized by external

ſymptoms only: all confined to its ſingle and ſimple effects upon the natural fluids and the excretions, viz. in this way,

ICTERUS. "Flavedo cutis et oculo-
"rum; fæces albidæ; urina obſcure
"rubra, immiſſa colore luteo tingens."

In this generic definition, the real cauſe and ſeat of that diſeaſe, commonly known by the name of jaundice, are unnoticed by DR. CULLEN; and it has not even been ſtrictly characterized as an impetiginous affection. It might, with the ſame propriety have been conſidered as a diſeaſe of the kidneys, or of the inteſtinal canal, becauſe their excretions are ſo very much affected, though each on a very oppoſite principle.

A FLAVEDO CUTIS has often been miſtaken for the ICTERUS, or bilious affection of the liver, when it has had no connection whatever with that organ: and the medical treatment, from this miſtake, has ſometimes been of an injurious tendency to the health of the innocent infant, as well as the ignorant domeſtic practitioner, who has been

been led to believe, that a yellow, or ſallow, ſkin muſt always be a jaundice: and they have not always been ſet right, by thoſe, who ought to have been better informed.

It is plain, that DR. CULLEN has conſidered ICTERUS as a generic diſeaſe of the ſkin, and not as ſymptomatic of an internal affection of the liver. He has, therefore, been driven to the neceſſity of calling his various *ſpecies* of the diſeaſe itſelf *idiopathic*. It would have been juſt as correct, if he had characterized his order, FEBRES, by thirſt, obſtipation, ſcanty urine, and a dry ſkin, and have given his ſeveral genera of fever, properly noticing the internal affections of the ſyſtem, as only idiopathic ſpecies.

Having commenced my ſecond ſection, with obſerving, that the SCURVY is very ſtrictly an affection of the ſkin; and having then endeavoured to ſhew, that it is primarily a diſeaſe of the ſolids, and only, ſecondarily, a diſeaſe of the fluids, and that

it

it is occaſioned by the remote cauſes acting with a debilitating effect, either on the ſyſtem at large, or on the ſtomach, and inteſtinal tube, affecting thereby the eſtabliſhed connection between the internal and external ſyſtems of capillary veſſels, I ſhall now give my reader DR. CULLEN's generic character of that diſeaſe, as very fairly founded on the ſeveral circumſtances connected with the principle of the new pathology, from its including the remote and occaſional cauſes, &c.

SCORBUTUS. "In regione frigida "poſt victum putreſcentem, ſalitum, "ex animalibus confectum, deficiente "ſimul materia vegetabili recente; "aſthenia; ſtomacace; in cute ma-"culæ diverſicolores, plerumque liveſ-"centes, præſertim ad pilorum ra-"dices."

This diſeaſe ariſes, in my opinion, from one univerſal proximate cauſe in the ſyſtem, to wit, an atony of the arterious capillary veſſels. DR. CULLEN, agreeable to this ſuppoſition, has not noticed any particular ſpecies

ſpecies of it, but has only obſerved, " that " it varies in its degree, and alſo in its " ſymptoms."

As concluding all I have at preſent to obſerve on the ſubject of impetiginous pathology, I ſhall lay before my reader the ſeveral definitions of the other GENERA of diſeaſe in CULLEN's order of IMPETIGINES, to wit, ELEPHANTIASIS, LEPRA, FRAMBŒSIA, and TRICHOMA, becauſe I have before obſerved of them, that they are, ſtrictly ſpeaking, impetiginous affections, and, though not ariſing certainly from a cacochymic ſtate of the fluids, yet have been conſidered by DR. CULLEN as depending on the cachectic habit.

ELEPHANTIASIS. " Morbus contagioſus; cutis craſſa, rugoſa, aſpera, " unctuoſa, pilis deſtituta; in extremis artubus anaeſtheſia; facies tuberibus deformis, vox rauca et naſalis."

LEPRA.

LEPRA. " Cutis eſcharis albis, fur-
" furaceis, rimoſis, aſpera, aliquando
" ſubtus humida, pruriginoſa."

FRAMBOESIA. " Fungi, mori, vel
" rubi idaei fructus referentes, in va-
" riis cutis partibus enati."

TRICHOMA. " Morbus contagioſus,
" capilli ſolito craſſiores, in cirrhos et
" funiculos inextricabiles implicati."

All theſe GENERA are properly characterized as cutaneous affections; but if the ELEPHANTIASIS and TRICHOMA are contagious diſeaſes, on any other principle than ſimply external contact, it might be made a queſtion, whether they can be ſo properly conſidered as impetiginous diſeaſes. Probably, in the countries, where they are moſt prevalent, they are conſtantly attended with more or leſs of a general affection of the ſyſtem.*

So great

* It has always ſurprized me much, that DR. CULLEN ſhould have introduced the following note in his ſynopſis. " De elephantiaſi, lepra, framboeſia, et trichomate, utpote

So great is the preſent imperfect ſtate of noſological ſyſtems, that impetiginous diſeaſes have not yet been brought together, in one point of view, and on one principle of arrangement: accordingly, DR. CULLEN has given us in his claſs, LOCALES, an order, DIALYSES, which he thus defines; "Solutio continui viſu tactuve manifeſta," and in this order, with the VULNUS, ULCUS, FRACTURA, and CARIES, he has introduced the HERPES, TINEA, and PSORA.

HERPES. "Phlyctænæ vel ulcuſcula "plurima, gregalia, ſerpentia, dyſe-"puleta."

TINEA. "In cute capillata ad radices "capillorum, ulcuſcula humorem in "cruſtam albam friabilem abeuntem, "fundentia."

"utpote morbis a meipſo nunquam viſis, amplius ſta-"tuere non auſus ſum." I think, if I underſtand his definitions of the above four diſeaſes right, I may have ſeen all of them, except the laſt;—two of them, viz. the elephantiaſis and lepra, repeatedly, though not with every ſymptom mentioned in their definitions.

PSORA. " Puſtulæ et ulcuſcula pruri-
" ginoſa, contagioſa, manus male
" habens."

By arranging theſe cutaneous affections in a claſs characterized, " Partis, non to-
" tius corporis, affectio," DR. CULLEN falls in with the propriety of my propoſition, that impetiginous diſeaſes in general are local affections. If he ever was himſelf of opinion, that there is an eſſential difference, between a leprous and an herpetic diſeaſe, I acknowledge myſelf unacquainted with his ground of diſtinction; and have to lament, that he did not think, as a teacher of the medical ſcience, that the objects of his claſs, CACHEXIÆ, merited as much of his attention, as his FEBRES, PHLEGMASIÆ, EXANTHEMATA, HÆMORRHAGIÆ, and PROFLUVIA, in his much favoured claſs PYREXIÆ. If he had ſo acted, he would have ſhewn his attachment to the ſcience at large, and to the good of mankind, to have been equal to his attachment to HIS OWN DOCTRINES.

CON-

CONCLUSION.

I am conſcientiouſly impelled to ſum up the ſubject, with addreſſing a few words to thoſe, even of a liberal education, though not of the profeſſion, (if the preſent attempt ſhould ever attract the notice of ſuch perſons,) who are of opinion, from the influence of the ſeveral publications tending to that object, that EVERY ONE MAY BE HIS OWN PHYSICIAN, and who fearleſsly venture on the uſe of publicly advertized medicines for the cure of that numerous deſcription of diſeaſe, the eruptive and other morbid appearances of the human ſkin, many of which are too powerful for ſome conſtitutions to receive with impunity.

With the view of cautioning ſuch, I could have recommended the preſent work to the attention of the public, not becauſe

it is written to guide them to the medical treatment of themſelves in ſuch caſes, but to ſhew to them, that the ſubject is too difficult and complicated for them, with prudence, to truſt to their own imperfect knowledge and judgement of their complaint, or to the ſpecious addreſſes every day met with, to induce them to make uſe of the many public remedies, either internally to be taken, or externally to be applied, for the cure of ſcorbutic, leprous, and other eruptive diſeaſes of the ſkin.

Notwithſtanding the miſchief to be apprehended from this cuſtom, I, at the ſame time, feel confident, that ſuch directions may in time be laid down, by ſkillful attention to theſe diſorders, as will enable the practitioner to point out thoſe particular *ſpecies* of cutaneous complaints, which may with perfect ſafety be externally treated, by remedies, even perhaps of that kind, which are offered to the public, as ſecrets known only to the proprietors, while others do not admit of ſuch, but are ſooneſt removed on conſtitutional principles.

Medicine

Medicine has often been indebted to the bold and ſecret practitioner for the diſcovery of very uſeful preparations. We may inſtance JAMES's fever powder, which has now met with the ſanction of the ROYAL COLLEGE OF PHYSICIANS, and introduced into their late pharmacopœia, though it is ſtill too often indiſcreetly made uſe of by the domeſtic practitioner. In like manner may ſome very good external remedies be diſcovered for ſome of the local diſeaſes of the human ſkin.

But what is at preſent moſt wanted, is a rule to determine, when ſuch can be ſafely made uſe of to remove theſe local complaints without injury to the conſtitution; and with the view of becoming more uſeful in this way, and of eſtabliſhing ſuch diagnoſtics to direct the application of them, I propoſe giving my attention in future to the ſubject.

APPENDIX

APPENDIX

TO THE

DERMATO-PATHOLOGIA,

ON THE

SOURCE OF ANIMAL HEAT,

BY THE

CAPILLARY VESSELS,

ON THE

OUTWARD SURFACE OF THE BODY;

AND

ON THE CONNECTION OF

THIS VASCULAR FUNCTION,

WITH

CUTANEOUS DISEASES:

WITH, ALSO,

SOME PARTICULAR OBSERVATIONS

ON THE

RECENT THEORIES OF SCURVY,

&c. &c.

APPENDIX, &c.

SECTION I.

SOME OF THE PRINCIPAL FACTS AND OBSERVATIONS CONCERNING ANIMAL RESPIRATION, AS THE SOURCE OF ANIMAL HEAT, WITH THE VIEW TO POINT OUT AND EXPLAIN, IN THE FOLLOWING SECTION, A PROBABLE CONNECTION BETWEEN IMPETIGINOUS DISEASES, AND THE CUTANEOUS EXHALENTS AND ABSORBENTS, AS EQUALLY THE REGULATORS AND CONDUCTORS OF ANIMAL HEAT.

As ſome apology for what I am proceeding to lay before my reader, I ſhall beg leave to commence with the following words from an inaugural diſſertation: "Mens humana profundis naturæ rerum-

" que caufis in eruendis negotio continuo
" occupatur, atque argumenta hujus fui
" ftudii ad ufum, tum placita opinione,
" cum factis adminiftrantibus, conatu op-
" timo captat colligitque.*" This will very fufficiently apply to my humble endeavours to clear up and arrange the obfcurity and confufion among cutaneous difeafes, which are not yet either fatisfactorily underftood, or properly divided.

On an attentive review of the whole of the obfervations on the preceding fections, as conftituting an attempt to eftablifh a new fyftem of impetiginous theory, with a view to a more fafe and ready practice in this moft perplexing branch of the healing art, I have fuffered my mind to be led on, till I have been brought to think, that I fhall be able to throw fome further light on this very intereftting and extenfive fubject, by endeavouring to illuftrate more fully, that part of the capillary fyftem in the conduct of the animal œconomy, which I have fo flightly touched upon before, to wit, the abforbing veffels.

From

* DISSERTATIO INAUGURALIS AB EDWARDO.

From further reflection, and ſome additional reaſoning, I have ſo far extended thoſe early ideas, which ſuppoſed, that there was a probable influence of the atmoſpheric air on the ſkin, as may further corroborate the general principle of my ſyſtem; namely, that either a diſeaſed or impeded action of the motions, or moving powers of the whole of the capillary veſſels, forms the immediate or proximate cauſe of that apparently diſeaſed ſtate of the cutaneous effuſions and ſecretions, which may be ſaid to conſtitute the proper impetiginous diſorder.

I will readily admit, from the ſubject having ſo much intereſted me, that my mind may have been too often inclined to indulge ſome opinions, before I had met with facts ſufficient to juſtify the mentioning of them. This was my mental ſituation, when I before* hinted at the probability of the atmoſpheric air being concerned in the riſe and progreſs of impetiginous affections; but I then added,

 "that

* In a paſſage at page 187.

" that I was not *at that time* prepared
" to diſcuſs it."

Even at an earlier period of my work, namely, in the ſection on the anatomy of the cutis vera, and its emanations, I have laid but little ſtreſs on the poſſibility of the abſorbing veſſels of the ſkin being concerned in the production of impetiginous eruptions, though they have a very conſiderable ſhare in the ſtructure and organization of the true ſkin; and, from the experiments and obſervations on them, by our preſent leading anatomical men, may be as liable to, and as concerned with, every ſtate of impetiginous diſeaſe, equally with every other kind of capillary veſſel: for they have been ſuppoſed endowed both with ſenſibility and irritability, and even furniſhed with muſcular fibre. But it ſhould here be mentioned, that it is not an eſſential character of muſcular fibre to be red.

I have, therefore, ſince the above periods of the work, endeavoured to reconcile myſelf to an idea, and ſhall attempt to gain

gain my reader over to be of the ſame opinion, that the abſorbing veſſels on the outward ſurface of the body have a function to perform in the animal œconomy, which I believe has not been hinted at before in any writings, on the ſubject with which it is immediately connected, to wit, the generation of animal heat; at leaſt, I am certain, that in that very intereſting publication, by the ingenious and learned DR. CRAWFORD, which he has entitled "experiments and obſervations "on animal heat, and on the inflammation "of combuſtible bodies," it has not been taken notice of.

This has inclined me to think it worth my while to obſerve, and my reader to know and conſider, that a new ſyſtem of reflections, tending to this point, may lead to a further diſcovery of facts and obſervations, and to a phyſiological chain of reaſoning, which will juſtify the probability of the idea I have taken up, that theſe veſſels have a concern in the immediate riſe of cutaneous eruptions and inflammations, in as far as they may be hereafter

hereafter proved, or admitted, to be the regulators and conductors of animal heat, in the ſupport of the animal machine, by ſome proceſs generating and abſorbing it from the atmoſpheric air.

This naturally leads me to conſider the principles on which DR. CRAWFORD has eſtabliſhed his doctrine of animal heat, as connected with, and brought about by, the proceſs of animal reſpiration. I ſhall, therefore, enumerate, in as brief a way as poſſible, ſome of the facts and obſervations which ſupport his ingenious theory, and ſhall afterwards, to wit, in the following ſection, make the proper application of it to the particular object of this work.

I ſhall, therefore, proceed with premiſing, from among his general facts, ſome explanation of terms connected with the ſcience of chemiſtry.

It has been obſerved,

1. That abſolute heat is to be conſidered as the element of fire.

2. That

2. That heat is either a ſenſation of the mind, or the principle exciting that ſenſation, whether it be conſidered as a quality, or as a ſubſtance.
3. That this principle, or element of fire, is in common language called *ſenſible* heat, but in philoſophical language, *abſolute* heat.
4. That *abſolute* heat is the *power* or *element* which excites in all animals the *ſenſation* of heat; and that ſenſible heat expreſſes the ſame, as *relative* to the *effects* it produces.
5. That the capacity to contain heat is a power inherent in the heated body; that abſolute heat is an unknown principle retained by that power in the body; and that ſenſible heat is that ſame unknown principle producing certain effects on our ſenſes, and on the thermometer,

To proceed to the facts in ſupport of DR. CRAWFORD'S doctrine.

1. Heat is contained in great quantities in all bodies, when at the common temperature of the atmoſphere.

2. Heat

2. Heat has the property of having a conſtant tendency to diffuſe itſelf over all bodies, till they are brought to the ſame degree of ſenſible heat.—This, it is evident, can only be meant to apply to inanimate matter; for it is afterwards ſaid, that the animal body is conſtantly communicating heat to the ſurrounding medium, and that it muſt of courſe have the power of generating heat.

3. By a ſet of experiments it is then proved, that blood contains a greater quantity of abſolute heat than water, or the ſeveral principles of which it is compoſed, to wit, fleſh, milk, and vegetables.

In the next place it has been obſerved, in ſupport of the ſuperior heat of the blood, 1. That the reſpiratory animal keeps at a temperature higher than the ſurrounding atmoſphere: but animals without reſpiratory organs are very nearly of the ſame temperature with the medium in which they live. 2. That among the hot animals, thoſe are the warmeſt, which have the

largeſt

largeſt perſpiratory organs, and which conſequently breath the greateſt quantity of air in proportion to their bulk. Birds have, therefore, the greateſt degree of animal heat. 3. That, in the ſame animal, the degree of heat is, in ſome meaſure, proportionable to the quantity of air inſpired in a given time. Animal heat is, therefore, increaſed by exerciſe, and by whatever accelerates reſpiration.

On theſe grounds DR. CRAWFORD next proceeds to defend the three following propoſitions :.

Firſt,—That atmoſpherical air contains a greater quantity of abſolute heat than the air which is expired from the lungs of animals.

In defending this axiom, he has aſſerted,

That the air, expired from the lungs, occaſions a precipitation in lime water ; a part of it, therefore, conſiſts of fixed

air.* The reſiduum has been found by DR. PRIESTLEY to be a mixture of atmoſpherical, and what he has called phlogiſticated, air; a ſpecies of air, he ſays, which occaſions no precipitation in lime water, but which extinguiſhes flame, and is noxious to animal life.

In purſuing the ſubject, DR. CRAWFORD further obſerves,

That air is altered in its properties by phlogiſtic proceſſes.——It is diminiſhed in its bulk.——It is rendered incapable of maintaining flame, and of ſupporting animal life;——and, if a few inſtances are excepted, where the fixed air is abſorbed, it univerſally occaſions a precipitation in lime water.

DR. CRAWFORD, therefore, concludes, that there is no phlogiſtic proceſs in nature, which is not accompanied with the production

* As neceſſary to my purpoſe hereafter, it ſhould be in this place mentioned, that the ſame, I believe, has been proved by experiment to be the effect of the inſenſible perſpiration, from the ſame cauſe.

production of fixed air. It, is therefore, made to appear, that, by the proceſs of reſpiration, atmoſpherical air is converted into fixed and phlogiſticated air.

A ſet of experiments then follow to determine the heat of theſe different ſpecies of air; and they prove, with certainty, that the abſolute heat of atmoſpherical air is greater than that of fixed or phlogiſticated air.

Further experiments alſo prove, that dephlogiſticated air is of the pureſt kind; and it had been before proved by the experiments of DR. PRIESTLEY, that its power in ſupporting animal life is five times as great as that of atmoſpherical air.

After the various experiments to determine the different proportions of heat in the different kinds of air, in ſupport of his firſt propoſition DR. CRAWFORD obſerves, thus, "We have therefore, upon the whole, "ſufficient evidence for concluding, that "atmoſpherical air contains a greater "quantity of abſolute heat than the air

" which is expired from the lungs of ani-
" mals; and that the quantity of abſolute
" heat contained in any kind of air, that
" is fit for reſpiration, is very nearly in
" proportion to its purity, or to its power
" in ſupporting animal life."

Dr. crawford's ſecond propoſition is, —" That the blood which paſſes from
" the *extreme ſurface of the* lungs to the
" heart, by the pulmonary *veins*, contains
" more abſolute heat than that which
" paſſes from the heart, through the
" lungs, *to the ſaid ſurface*, by the pul-
" monary artery." That is to ſay, that the venous blood of the ſyſtem of pulmonary arteries has leſs heat, than the arterial blood of the ſyſtem of pulmonary veins.

He proceeds to determine this propoſition by a ſet of experiments; and then offers his third propoſition, which is, " That the capacities of bodies, for con-
" taining heat, are diminiſhed by the ad-
" dition of phlogiſton, and increaſed by
" the ſeparation of this principle."

This

This laſt he alſo proves by experiments, firſt obſerving, that, " As bodies " when inflamed, appear to emit light, " and give out heat, from an internal " ſource; and, as thoſe bodies are " only combuſtible, which contain the " phlogiſton in conſiderable quantity, it " has been an opinion generally received " among philoſophers, that this principle " is either fire itſelf, or intimately con- " nected with the production of fire." He then goes on to ſay, " If this, however, " were true, bodies, when united with " phlogiſton, would contain a greater " quantity of fire, or of abſolute heat, " than when ſeparated from it. Metals " would contain more abſolute heat than " their calces; and ſulphur, more than " the vitriolic acid. But the contrary is " the fact, as ſtated in the above propo- " ſition, appears from the following ex- " periments."

After theſe ſaid experiments, DR. CRAWFORD makes the following obſervation, " That if phlogiſton be added to a body, a " quantity of the abſolute heat of that body

" will

" will be extricated; and if the phlogiſton " be ſeparated again, an equal quantity of " heat will be abſorbed." And, after ſome examples, thus concludes, " Heat, there- " fore, and phlogiſton appear to me to be " two oppoſite principles in nature. By " the action of heat upon bodies, the force " of their attraction to phlogiſton is dimi- " niſhed; and, by the action of phlogiſton, " a part of the abſolute heat, which ex- " iſts in all bodies as an elementary prin- " ciple, is expelled."

Upon theſe facts, eſtabliſhed by his numerous experiments, DR. CRAWFORD proceeds in his third ſection, to an explanation of animal heat, and the inflammation of combuſtible bodies.

In his application of the above principles to animal heat, he ſays, " That in the " proceſs of reſpiration a quantity of ab- " ſolute heat is ſeparated from the air, " and abſorbed by the blood," which he has conſidered as made manifeſt and uncontrovertible, both by his own experiments, as well as by DR. PRIESTLEY's diſcoveries;

veries; and DR. CRAWFORD therefore concludes, "that the power of any ſpecies "of air, in ſupporting animal life, is nearly "in proportion to the quantity of abſolute "heat which it contains, and is conſe-"quently proportionable to the quantity "which it is capable of depoſiting in the "lungs."

This concluſion meets with full ſupport from DR. PRIESTLEY'S demonſtrations, who has ſhewn, that, by the function of reſpiration, phlogiſton is ſeparated from the blood, and combined with the air;—and that, during this proceſs, a quantity of abſolute heat muſt neceſſarily be diſengaged from the air, by the action of the phlogiſton: the blood at the moment being left at liberty to unite with that portion of heat, which the air has depoſited.

I ſhall here beg leave to obſerve, that, in the language and meaning of theſe philoſophers, the ſympathy, or chemical attraction, is ſuppoſed to take place between the fluids circulating in the capillary veſſels, and the atmoſpheric air; and

they

they have therefore viewed animal heat as depending on a proceſs ſimilar to a chemical elective attraction. But I cannot diveſt my mind of an idea, that in the application of this preumatic chemiſtry to the œconomy and living principle of an animal, the vital ſolids, as endowed with great irritability, are much concerned in the operation, and that the ſero-lymphatic part of the blood may equally afford the phlogiſton, as the blood itſelf. But more of this hereafter.

On the whole, it appears from DR. CRAWFORD's experiments, that, in reſpiration, the blood is continually diſcharging phlogiſton, and abſorbing heat, and that in the courſe of the circulation, it is continually imbibing phlogiſton, and emitting heat. It is further this ingenious writer's opinion, that the ſenſible heat, which is produced by the circulation of the blood, is occaſioned by the whole not being abſorbed, which is ſeparated from it, on its acquiring the phlogiſton from the different parts of the ſyſtem.

From

From all this reaſoning DR. CRAWFORD concludes, " that the blood, in its pro-
" greſs through the ſyſtem, gives out the
" heat, which it had received from the
" air in the lungs; that a ſmall portion
" of this heat is abſorbed by thoſe par-
" ticles which impart the phlogiſton to
" the blood; and that the reſt becomes
" redundant, or is converted into moving
" or ſenſible heat."

It here becomes eſſentially neceſſary, that I ſhould make the following obſervation, as it concerns my own particular application of the above doctrine to cutaneous heat and inflammation, and to impetiginous eruption. All theſe phænomena have been *wholly* attributed by DR. CRAWFORD to the abſolute heat, which is ſeparated from the air, by the function of reſpiration *ſolely*: and this proceſs he has conſidered as the *only* and *true* cauſe of the generation of heat in the animal œconomy; and as the grand ſource of that *pabulum vitæ*, ſo eſſential to the preſervation of the animal kingdom. But I ſhall ſhortly en-

deavour to make it appear probable, that there muſt be another ſource of heat, of equal, if not greater, importance, in the conſtitution, and in the ſame manner connected with both the health and diſeaſes of man.

Among the principal facts relating to animal heat in DR. CRAWFORD's fourth ſection, as further ſupporting his doctrine, he has obſerved the following:

1. That the animal kingdom has been furniſhed with a pulmonary ſyſtem, and a double circulation, with the particular view of abſorbing heat.
2. That the principle of phlogiſton ſerves to ſeparate abſolute heat from the air, both in reſpiration as well as combuſtion.
3. That man and a candle phlogiſticate *nearly* the ſame quantity of air, in the ſame ſpace of time; and hence that he is continually receiving as much heat from the air as is produced by the burning of a candle.

4. That

4. That in the cold animals, not furniſhed with lungs, who ſtill keep themſelves in a temperature ſomewhat higher than the ſurrounding medium, it is probable that the aliment contains more abſolute heat than the blood, and that, therefore, their blood will be ſupplied with heat from the aliment.

5. That the animal body has in certain ſituations the power of producing cold; (that is, in my opinion, the power of regulating the heat;) and that this power has been attributed by ſome philoſophers to the evaporation on the ſurface of the body. But DR. CRAWFORD has chiefly attributed it to the increaſe of evaporation from the ſurface of the lungs, from the heat of the ſurrounding medium; and ſays, "That the ſame proceſs, which "formerly ſupplied the animal with "heat, will now become the inſtru-"ment of producing cold." On this principle DR. CRAWFORD perceives the reaſon, why the heat of animals is nearly the ſame in all parts of the earth.

I am of opinion, that I ſhall be hereafter able to make it appear probable, that the proceſs of cutaneous perſpiration is equally concerned in the diſtribution, as well as the regulation, of the animal heat, under the viciſſitudes in the temperature of the ſurrounding medium.

6. That the heat of the human body is very nearly, at all ſeaſons of the year, 96, and, conſequently, other circumſtances continuing the ſame, the quantity of heat loſt in a given time, when the air is at 36, will greatly exceed that which is loſt, in an equal portion of time, when it is 66. It, therefore, appears neceſſary, that a greater quantity of heat ſhould be abſorbed from the air to ſupply its place. This DR. CRAWFORD has endeavoured to account for, by obſerving, that, from the tonic and ſtimulant effects of atmoſpheric cold, the vigour of the body is increaſed, and that the blood is determined to the lungs, by a conſtriction of veſſels on the outward ſurface

ſurface of the body. This fact, I think, may be otherwiſe explained.

7. That as animals are continually abſorbing heat from the air, if there was not a quantity of heat carried off, equal to that which is abſorbed, there would be an accumulation of it in the animal body. This has been ſuppoſed to be prevented by the evaporation from the ſurface of the lungs, and the cooling power of the air, conjointly, between which a proper balance is preſerved, evident by the alternating changes in them, according to the ſeaſons of the year.

8. That bodily exerciſe, or the increaſed action of the moving or muſcular ſyſtem, by promoting the circulation of the blood, and accelerating the proceſs of reſpiration, occaſions a proportionable increaſe in the quantity of phlogiſton diſcharged, and in the quantity of heat abſorbed.

9. That the phænomena of the cold ſtage of fever are owing to the ſpaſm formed upon the ſurface, and to the diminution of the quantity of blood paſſing

ing ordinarily through the lungs. Then DR. CRAWFORD goes on to obſerve, that the abſorption of heat, and the accelerated velocity of the blood through the lungs will afterwards act and re-act upon each other, in ſuch a manner, as that the heat will have a conſtant tendency to increaſe, but that in the hot ſtage of fever there is a great evaporation from the ſurface; and he therefore concludes, that this is one of the means, which nature employs, for moderating the heat, and reſtraining the violence of the diſeaſe.

10. That it is to the greater quantity of phlogiſton thrown off by the lungs in putrid fevers, from the general putreſcent ſtate of the ſyſtem, that the heat of the body riſes higher in them than it does in any other ſpecies of fever. I think a different explanation might be given of this.

11. That the partial and unuſual heat, accompanying topical redneſs and inflammation of the cutis vera, is occaſioned by the accelerated velocity of the blood through the part inflamed,

and

and that a tendency to putrefaction muſt be the conſequence of this violent re-action, and of the ſtagnation of the ſerous matter, which is ſometimes effuſed into the adjoining cellular texture.

Laſtly, That the partial heats, attending the hectic and nervous diſeaſes, are alſo to be explained on the principle of a loſs of balance in the equal diſtribution of heat, by an increaſed or *inordinate* action of the veſſels, in the parts ſo affected.

So many of the preceding experiments and obſervations tend, in my humble opinion, to prove the univerſality of ſome, perhaps yet undiſcovered, principle, generating heat in the human body, that I cannot but entertain an idea, in the preſent early ſtate of this enquiry, that its ſource may be as much (I muſt not, I fear, ſay more) connected with the cutaneous functions, inſenſible perſpiration and capillary abſorption, as it is with the pulmonary function, reſpiration: for from the knowledge

ledge I have of the anatomy of both organs, I cannot ſee that the air can come into contact with the blood itſelf, more on the one ſurface than on the other.

I am therefore led to think, that the air's *modus agendi* on the blood has not yet been rightly underſtood and explained; and in this view of the ſubject, I think there is ſufficient latitude to allow me to conſider each component part of the blood as indubitably containing the principle of phlogiſton, acquired from one general cauſe, and parting with it, under certain circumſtances, to receive heat, equally with the whole aggregate fluid in its florid ſtate, under the full denomination of red blood. Particular circumſtances may be hereafter mentioned, which will ſupport this opinion.

The curious enquirer muſt be referred to the work at large for the many ingenious arguments made uſe of by the learned author, in ſupport of the whole of his own doctrine, which he has drawn to a concluſion with the following obſervation:

" I have

"I have thus endeavoured (ſays DR. "CRAWFORD) to account for the phæ-"nomena both of combuſtion and animal "heat from one general principle; to wit, "that the capacities of bodies for contain-"ing heat are diminiſhed by the addition "of phlogiſton, and increaſed by its ſepa-"ration." And on this principle, he ſays, that a variety of phænomena may be explained, beſides thoſe which he has mentioned in the preceding part of the work.

In enumerating theſe, as connected with natural philoſophy, as well as the animal œconomy, he has related one, which I muſt particularly take notice of, as appearing to me to be very pointedly applicable to my ſuppoſed cutaneous generation of animal heat. DR. CRAWFORD has obſerved, that the ingenious MR. BEWLY has ventured to explain the ſpontaneous accenſion of phoſphorus in the following manner: MR. BEWLY is, firſt, of opinion with DR. PRIESTLEY, that the atmoſpherical air contains the nitrous acid, as a conſtituent principle; and then, from obſerving that much heat ariſes from the ſudden combi-

nation of phlogiſton with this acid, he concludes, that the phlogiſton of the phoſphorus is capable of decompoſing the air; and that, by the union of phlogiſton with the aerial acid, a degree of heat is produced ſufficient to inflame the phoſphorus.

Will not this philoſophical obſervation, joined with the leading features of DR. CRAWFORD'S doctrine, juſtify me in advancing the opinion, that the heat of an animal body partly, if not principally, depends upon an abſorption of abſolute heat from the air, by the abſorbing principle on the outward ſurface of the body, on the following kind of chemical attraction, or mode of action?

Or, in other words, have I not very good grounds for alledging, from the above fact and doctrine, that the generation of animal heat may as much depend upon the function of perſpiration, as on that of reſpiration, in the following way; to wit, that the exhalent or perſpirable extreme veſſels may firſt convey and carry off, by their function as promoting the inſenſible perſpiration,

perſpiration, a certain quantity of the phlogiſton or inflammable principle acquired by the arterious blood in the courſe of its circulation, which, in the form of the perſpirable vapour, unites to the nitrous acid, already deemed a conſtituent principle in the atmoſpherical air, and that the union inſtantaneouſly occaſions a ſeparation of the abſolute heat in the ſurrounding medium immediately in contact with the outward ſurface of the body; and that then the abſorbing veſſels of the true ſkin have an inherent principle of action in them to take up a part of it, for the neceſſary ſupport and preſervation of all the functions of the animal ſyſtem, leaving the reſt to be diſſipated in the atmoſphere in the form of ſenſible heat.

I feel my own mind ſtrongly impreſſed with the force of this reaſoning, and with the juſtneſs of the application of DR. CRAWFORD'S pulmonary principle generating animal heat to explain the external heat of the human body: and when I further conſider the manner in which DR. CRAWFORD explains the phænomena of a

burning candle, I cannot but be more firmly convinced, from the force of the analogy, that there is ſuch a cutaneous operation.

I ſhall make a few obſervations in ſupport of this pneumatic theory, by applying it to ſome human occurrences, diurnally calling upon our attention.

Will not the ſuppoſition of a cutaneous chemical attraction account for the effects of friction in exciting a local increaſe of heat, on the ſame principle that the blaſt of air, or the blow pipe, augments the proceſs of combuſtion; for, by its ſtimulating effects, it muſt promote the quicker action of all the capillary veſſels, and muſt thereby forward both the eſcape of phlogiſton, as well as the admiſſion of a part of the atmoſpheric fire, or even any other fluid, or ſuitable particles, into the animal conſtitution, according to the means made uſe of to rouze the function of the abſorbents?

In

In like manner ſhould I be diſpoſed to account for the fact, as it has appeared to me, that the ſurrounding medium, immediately in contact with the ſurface of an animal body, is warmer, than it is obſerved to be, by the thermometer, at a ſmall diſtance from it: that is to ſay, that it contains more ſenſible heat: for it may be explained by ſuppoſing, that a certain, perhaps a conſiderable, portion of the abſolute heat, (varying however according to occaſional and exciting circumſtances,) which has been ſeparated from the atmoſpherical air by the human phlogiſton, is not abſorbed, but becomes ſenſible heat, in the ſame manner that the heat of the common atmoſphere, in contact with a burning candle, is ſo much increaſed; and that the redundant fire from each proceſs is quickly diſſipated into the ſurrounding atmoſphere, on the ſame principle.

I believe it will be always found, on minute obſervation, that a perſon feels warmeſt, when he is lightly clad with looſe apparel, either covering his body or his limbs. Why is it ſo? Will not the above reaſoning

reaſoning explain it? Is it not becauſe ſuch cloathing does not prevent that particular warmer portion of the ſurrounding atmoſphere, produced on the above principle, from conſtantly hovering around him, but favours its being more gradually diſſipated? When he is cloſely and heavily clad, he may perſpire freely, but he will, on many occaſions, feel himſelf in proportion more chilly, both as the effect of the damp linen adhering to his body, and preventing ſuch a medium of warmer air forming immediately in contact with the cutaneous ſurface, as well as from the quicker aerial attraction abſorbing the heat ſeparated by his phlogiſton, from the increaſed humidity of the air cauſed by his perſpiration, on the principle of evaporation diminiſhing the ſenſible heat of the atmoſphere, in contact with a damp body, on all occaſions.

The ſame pneumatic principle or proceſs, through the medium of a cutaneous vaſcular action, will alſo explain the local cauſe of the fluſhing and burning of the face and hands, ſo often occuring as the partial

partial phænomena both of health and diſeaſe. During theſe ſenſations an increaſed action of, perhaps, all the capillary veſſels of the part takes place. The human phlogiſton may be therefore ſuppoſed to be more freely ſeparated, or thrown off, by the exhalent arteries of the ſkin, than in common, on DR. CRAWFORD'S principle of explaining the heat of a topical inflammation, ſaving that it is not neceſſary to ſuppoſe, on theſe ſudden local effects, that the tendency to putrefaction is thereby increaſed.

The conſequence of this temporary increaſe in the inſenſible exhalation from the perſpirable arteries is, that a greater degree of ſenſible heat is immediately felt in the air in contact with the part fluſhed, from the attraction of the human phlogiſton to the nitrous principle of the atmoſphere, it being greater in quantity at that time, than under the ordinary circumſtances of inſenſible perſpiration, and therefore more heat is ſuddenly obſervable, both by our ſenſes, and the thermometer. I believe experiments have not been yet made with

a par-

a particular view to an explanation of theſe phænomena.

I ſhall draw theſe obſervations to a concluſion with again noticing, that DR. CRAWFORD has confined his doctrine of animal heat to a ſuppoſed chemical proceſs in the lungs, ſupported by the alternate actions of inſpiration and expiration, except in admitting that the ſame will locally explain, from its after-connection with the circulation, the effects of external inflammation, from the increaſed action of the veſſels of the part locally affected. His application of it to theſe caſual capillary phænomena appears to me, to be much in ſupport of my opinion, that the whole ſurface of the human body may, at all times, be equally endowed with the power of generating heat: and many of his pneumatic phænomena prove, that the function of perſpiration, in many inſtances, regulates its ordinary quantity, as well as controuls its occaſional redundancy.

DR. CRAWFORD has wound up the ſubject by ſhewing his inclination to ſupport the

the opinion, with, I think, juſt argument, that heat is a ſubſtance and not a quality: ——That it is an element *ſui generis*:—— That reſpiration and combuſtion are chemical proceſſes, in which, by the exchange of fire and phlogiſton, a double decompoſition takes place:——That the blood parts with phlogiſton and receives fire; and that the air parts with fire and receives phlogiſton.

Let me add, as an opinion I have taken up from the weight of the above *data*, that the inſenſible perſpiration of an animal body forms a chemical proceſs, operating with the atmoſpheric air, to the ſame intent, and on the ſame principle, under the government of the ſyſtem of cutaneous capillary, exhaling and abſorbing, veſſels.

It is incumbent on me to inform my reader, that I have choſen, for my preſent purpoſe, to ſelect the above facts and obſervations from the firſt edition of DR. CRAWFORD'S work, for ſeveral reaſons which had weight with me. My having

done ſo does not affect the application I have made of the tendency of the doctrine, to throw ſome light on cutaneous diſeaſes, as the learned author has not altered his opinion in his late much extended edition, but has only more fully ſupported it, by additional and more accurate experiments and obſervations, and with the deſcription of a more complete apparatus for making them, applying himſelf the reſult of them in the ſame manner as before.

This will be beſt underſtood from his own work, by the following ſentence in an advertiſement, with which the book laſt edited commences.

" As the trials recited in that publi-
" cation (meaning the firſt edition 1779,)
" had been made under many diſadvan-
" tages, I ſoon afterwards found, upon a
" careful repetition of them, that I had
" fallen into conſiderable miſtakes in my
" concluſions reſpecting the quantities of
" heat contained in the permanently elaſtic
" fluids."

" I per-

"I perceived, however, that theſe miſ-
"takes did not affect the explanation
"which I had given of animal heat and
"combuſtion. For though it appeared
"that the exceſs of the capacity of de-
"phlogiſticated, above that of fixed air,
"was not ſo great as I had at firſt ima-
"gined; yet, from an extenſive ſeries of
"experiments, which were made with the
"moſt ſcrupulous attention to accuracy,
"it was evident that the difference of the
"capacities of thoſe fluids was ſuch as to
"afford an adequate explanation of the
"phænomena"*

There are, however, two material new points in this laſt edition, which I muſt take ſome notice of.

The firſt is, the fourth propoſition which DR. CRAWFORD has added, and which is as follows: "When an animal is placed
"in a warm medium, the color of the
"venous blood approaches more nearly to

 "that

* DR. A. CRAWFORD ON ANIMAL HEAT. Second edition. 1788.

" that of the arterial, than when it is
" placed in a cold medium; the quantity
" of reſpirable air which it phlogiſticates,
" in a given time, in the former inſtance,
" is leſs than that which it phlogiſticates,
" during an equal ſpace of time, in the
" latter; and the quantity of heat pro-
" duced, when a portion of pure air is
" altered by the reſpiration of an animal,
" is nearly equal to that which is produced,
" when the ſame quantity of air is altered
" by the burning of wax or charcoal."

" That the difference between the color
" of the venous and arterial blood, in a
" living animal, is diminiſhed by expoſure
" to heat, and increaſed by cold, appears
" by the following experiments."*

This propoſition ſtrikes my mind as further proving a probable connection, in the generation of animal heat, between the cutaneous proceſs of perſpiration, and the variable ſtate of the atmoſpherical air. But I ſhall reſerve the fuller conſideration of it to more leiſure, at a future period, it not being

Page 307.

being eſſentially required to be further proſecuted at this time.

The ſecond point is as follows:

In his ſection on the principle facts relating to animal heat, he has added the following remark:

6. "I ſhall obſerve (ſays he) in the laſt "place, that the doctrine contained "in the preceding pages, reſpecting "the cauſe of animal heat, will pro- "bably lead to an explanation of the "uſes of the ſpleen and of the lym- "phatic glands."*

The time which I have limited to myſelf for finiſhing the preſent publication, will not permit me to deſcant upon the merit of DR. CRAWFORD's theory, reſpecting the uſe of the human ſpleen; neither is it immediately to the object of my own work. But his obſervation on the probable uſe of the lymphatic glands, as connected with his

* Page 399.

his doctrine of animal heat, intereſts me much; and I ſhall, therefore, repeat verbatim, the whole he has ſaid on this point.

"As to the lymphatic glands, there is "reaſon to believe, that the arterial blood, "which is converted into venous, in thoſe "glands, attracts from the lymph a quan-"tity of the inflammable principle, and "communicates to it a portion of elemen-"tary fire. It is probable that the lymph, "by this alteration, is rendered more fit "for becoming one of the conſtituent parts "of the blood."*

This, to me, novel idea, which I have only been made acquainted with ſince I penned the preceding pages of this ſection, calls from me the following obſervations:

I fear that the ingenious author does not mean, in the preceding paſſage, the lymph of the blood itſelf, not even the venous portion of it, but that lymph which is to be conſidered as a ſpecific ſecretion of the glands themſelves. However, whether I am

* Page 400.

am right or not in thus explaining the author's meaning, I think it may be fairly implied, from ſuch language, that all our fluids may equally contain more or leſs of that inflammable principle, phlogiſton, if the lymph of theſe glands can be admitted to contain it. If this concluſion be reaſonable, I think I am then juſtified in what I formerly advanced, reſpecting the mode of action of the atmoſpheric air, on the probable contents of the air cells of the lungs, as well as on the outer ſurface of the body, by the chemical action of the perſpirable vapour exhaling from them.

If the lymphatic glands have any influence at all, in regulating and controuling the equable diſtribution of the animal heat, I ſhould rather be inclined to think, that it would be ſomewhat better explained in the following manner, ſtill adhering to the leading principle of DR. CRAWFORD'S doctrine, as well as to my own more extenſive application of it to phyſiological and pathological purpoſes.

To

To be as ſhort as I can :——I will ſuppoſe, that the human blood is gradually but conſtantly acquiring a certain degree of the phlogiſticated ſtate, through the whole of its round in circulation, from a phlogiſtic proceſs inherent in the animal conſtitution, and that it therefore requires, in a particular manner in the hot animals, according to the velocity of the fluid circulating, a certain deliquation, depuration, or cleanſing, at different parts of the body: for which purpoſe ſuch animals are peculiarly furniſhed with the function of reſpiration, and a double circulation. This, however, local operation could not be attended with a general effect.

The venous blood, therefore, after it has been cleared of its exceſs of phlogiſton in the lungs, and has again become arterial, muſt have acquired, through its firſt courſe of the circulation, namely, the arterial portion, before it can have arrived at all the extreme capillary arteries, ſo much additional phlogiſton, perhaps from its own motion, as well as the common temperature of the body, as then to require ſome degree of

of another cleanſing, before it again becomes venous, or is properly fitted for the various ſecerning organs of the animal.

I therefore think, that the arterial blood, when it has arrived at the lymphatic glands, may again be in need of ſome additional heat to ſeparate its redundant phlogiſton, (rather than to give out its heat, and receive phlogiſton, as DR. CRAWFORD imagines,*) which, on my doctrine of the cutaneous generation of heat, may very reaſonably be ſuppoſed to take place, if the proper veſſels, leading to the lymphatic glands, and ariſing either on the outer ſurface of the body, or the cellular ſurface of the lungs, have an inherent power in them of abſorbing heat, when it has been ſeparated from the atmoſpheric air, by the greater attraction of phlogiſton in the ſerous and lymphatic part of the blood, to the pure air or nitrous principle of the ſurrounding, as well as the inhaled, atmoſpheric medium.

In the manner in which I have now ſuppoſed the uſe of the ſyſtem of the

 abſorbing

* See a quotation at page 254.

abſorbing veſſels and lymphatic glands to be ordered, it may afford a reaſon why theſe veſſels are ſo numerouſly furniſhed with valves: for as the abſolute heat of the atmoſpheric air may be taken in, under the form of ſenſible heat or a vaporous fluid, it ſurely might very readily ſuffer by a retrograde motion of the aerial part of it, or even when wholly condenſed, if this organization did not ſomewhat ſecure it from ſo very eaſily eſcaping.

Whether I have been conſiſtent and clear in what I have thus ventured to lay before my reader, and which I have wiſhed at preſent to be underſtood in ſo brief a way, I muſt leave to thoſe to determine, who have ſtudied pneumatic chemiſtry more than myſelf. But on this phyſiological idea of a cutaneous generation of animal heat I ſhall attempt to give, in the following ſection, a pathological explanation of ſeveral morbid ſtates of the human conſtitution.

SECTION

SECTION II.

A GENERAL COMMENTARY ON THE WHOLE OF THE DERMATO-PATHOLOGIA, CHIEFLY FOUNDED ON THE THEORY OF ANIMAL HEAT MENTIONED IN THE PRECEDING SECTION, AS FURTHER EXPLAINING AND SUPPORTING THE DIFFERENT PARTS OF THE NEW IMPETIGINOUS PATHOLOGY, PARTICULARLY BY ALLUDING TO A CONNECTION BETWEEN SUCH DISEASES AND THE CAPILLARY ARTERIES AND ABSORBING VESSELS OF THE SKIN, AS ENDOWED WITH AN INHERENT PRINCIPLE FOR REGULATING AND CONTROULING ANIMAL HEAT.

I DO not think that any thing can better justify my persisting in the object of this work, and in my variegated attempt to unravel the mysteries of cutaneous dis-

eaſe, than the univerſally admitted errors and imperfections in our hitherto-acquired degree of knowledge on this extenſive branch of medical practice.

I have therefore taken the liberty (without the fear of its being imputed to me, that I have uſeleſsly employed my time) to throw out every thing that my imagination could conceive to be at all related to their hidden nature, and to be likely to lead the human mind to a more ſatisfactory and rational explanation of their varieties, and of their connection with the diſeaſes of the conſtitution at large, than is at preſent to be met with in books on this ſubject.

Although a ſtrong advocate, through the whole of my ſyſtem, for the influence of the ſolids of the animal machine over the fluids which circulate through them, as the leading principle of impetiginous complaints, I am not ſo bigotted to this particular doctrine, as not to venture moſt readily any other opinion, though on a ſlight view different, which might carry with

with it the appearance of better explaining any particular genera or ſpecies of ſuch diſeaſes.

I have therefore in the preceding ſection laid the foundation for thinking, that there is a probability of the fluids being, *on ſome occaſions primarily* concerned, in as far as they may be under the influence of the principle generating heat in the animal œconomy.

But as this proceſs appears to me to be under the guidance of very irritable ſolids, namely, the exhalent arteries and the abſorbing veſſels, it does not, in my humble opinion, take from the general principle, or ground of reaſoning, laid down by me, and advanced by the celebrated CULLEN, "That the affections of the motions and "moving powers of the animal œconomy "muſt certainly be the leading enquiry, "in conſidering the diſeaſes of the human "body."*

I ſhall

* Preface to his FIRST LINES, 1784.

I ſhall therefore firmly proceed to apply DR. CRAWFORD's doctrine of the generation of animal heat, together with my ſuppoſed cutaneous function co-operating with it, to the pathology and proximate cauſe of impetiginous affections, as well as to ſome other diſeaſed ſtates of the ſyſtem apparently connected with them, or with ſome part of the theory which has been advanced. But I, in a particular manner, think the enquiry important, in ſeveral points of view, as connected with the principal objects of a DERMATOLOGIA NOVA, yet ſhall content myſelf at preſent with a brief application of the doctrine to ſome of the leading objects of the preceding impetiginous ſyſtem.

Preparatory to my entering upon this explanation, I muſt ſay a few words more on the difficulty my mind labours under of comprehending what the learned DR. CRAWFORD has exactly meant by the language of *an abſorption in the lungs of abſolute heat, from the atmoſpheric air.* This expreſſion he has not fully explained, at leaſt to my mind; and I am further at

a loſs

a loſs to know, whether the ingenious author has intended to confine the principle of phlogiſton, as acquired from the conſtitution, only to the red globules of the blood, that is, to the blood only in its red ſtate, when it is to be ſubjected to the reſpiratory chemical attraction.

If this has been the meaning and extent of DR. CRAWFORD'S language, I cannot comprehend how the blood can come into contact with the atmoſpheric air received into the lungs, ſo as to allow the ſuppoſed chemical attraction to take place. For though DR. PRIESTLEY'S experiments prove, that pure air and inflammable air act, in an equal degree, on venous and arterial blood, when a thin bladder is expoſed between them, as when they are in direct contact with each other, it is not to me a ſufficient proof, that the ſame takes place in the lungs of a living animal, *i. e.* that the admiſſion of pure air, and emiſſion of inflammable air, ſhould equally and in the ſame manner take place, when the fluid is in conſtant circulation through an animated machine,

machine, and the veſſels containing it have the principle of life, to ſubject them, if pervious to ſuch fluids, to the conſequences of excitement and irritability. Is the ſame mode of attraction to be conſidered as taking place in all parts of the body, when a ſuppoſed ſtate of putreſcency in the fluids is the immediate agent of it?

Several medical gentlemen with whom I have held converſation on this ſubject, have imagined, that the attraction certainly took place through the coats of the capillary veſſels, in the air cells of the lungs. This appears to me moſt improbable, both in them, as well as every other part of the body. But if my reader can agree with me, that the principle of phlogiſton is equally a conſtituent part of the ſerum and lymph, which ſeems to be corroborated by ſeveral obſervations in the laſt edition of DR. CRAWFORD'S work, it then may be readily underſtood how they meet, viz. from the lymph effuſed during every inſpiration into the pulmonary air cells.

If

If this be not the way, which will explain all the phænomena of reſpiration, then it muſt be admitted, that the proceſs takes place through the very coats of the blood veſſels, both for the admiſſion of the abſolute heat, and the emiſſion of the phlogiſton. But, from the glaring improbability of this, I am diſpoſed to conclude, that the ſerum, or ſero-lymphatic vapour, throws off the phlogiſton, which then immediately and readily comes into contact with the atmoſpheric air, in what are called the air cells, or cellular ſurface of the lungs. It is clearly ſo to me on the ſkin; or it muſt be ſuppoſed, that the attraction, or exchange of fire for phlogiſton, there takes place even through the condenſed and inſenſible cuticle. Indeed it may be on the principle of this external chemical proceſs, that the cuticle is formed from the coagulating portion of the ſerum, and ſero-lymphatic part of the blood.

It is further to be obſerved, that, from the ſudden change which takes place in the blood of the pulmonary arteries, after it has reached the pulmonary veins, it will

 become

become neceſſary, if conſiſtency in the reſpiratory doctrine is to be preſerved by my mode of explaining it, to ſtamp the abſorbing principle on the ſyſtem of capillary veins. The phænomena of reſpiration juſtifies this deviation from the general abſorbing principle in the conſtitution. For if the lymphatic abſorbents of the glandular ſyſtem had acted on this occaſion as elſewhere, the abſolute heat abſorbed would have taken a different courſe, and could not have been inſtantaneouſly conveyed to the blood of the pulmonary veins, in which alone the grand revolution takes place.

On DR. CRAWFORD'S principle the abſorption muſt be brought about by the pulmonary veins, to account conſiſtently for the ſudden difference in the appearance of the blood of thoſe veſſels, and of the pulmonary arteries: but if the abſorption even took place through the coats of the veſſels, it muſt be admitted, that it ſhould as readily occur in the one kind, as in the other. In fact, the proceſs would be this; the pulmonary arteries would give out through their coats their phlogiſton, while the

the pulmonary veins would take in, by a ſimilar way, the abſolute heat, which the phlogiſton ſeparates from the air: otherwiſe it muſt be admitted, that the ſame kind of veſſel, to wit, the pulmonary artery, is capable both of expelling the one, and receiving the other, by attraction through its organized coats.

All theſe points are at preſent inexplicable difficulties attending the explanation of theſe pneumatic phænomena in our conſtitution, and, though meriting inveſtigation, it will be better at this time to drop them.

I ſhall now proceed to my explanation of ſome particular diſeaſed ſtates of the ſyſtem, on the above phyſiological principles.

I. The above pneumato-phyſiological opinion of the office of the lymphatic veſſels and their glands, in the animal œconomy, may ſerve to lead us to attempt a new explanation, and to eſtabliſh a new proximate cauſe, of that hitherto inexplicable diſeaſed ſtate of the conſtitution, the

ſcrophulous temperament; and this again may tend to diſcover better prophylactic and curative means. DR. CULLEN has already characterized it as ariſing from "a pecu-"liar conſtitution of the lymphatic ſyſ-"tem."* The above opinion may, therefore, plauſibly apply, in as far as a redundant quantity of abſolute heat from the air, or an inordinate or diſeaſed action of the motions or moving powers of the abſorbent ſyſtem, in regulating the above ſuppoſed proceſs or function of it, may be the ſpring and occaſion of all glandular lymphatic diſeaſes, and may, in a particular manner, promote the tuburcular diſeaſed ſtate of the lungs, and other pulmonary affections.

II. I ſhall, in the next place, attempt a ſhort application of it to ſcurvy. This is a diſeaſe on which ſo much has been written, even in later years, on very oppoſite pathological principles, that it affords a juſt ground for throwing out any new idea on the ſubject. It, therefore, has ſtruck me, that this diſeaſe may have ſome probable connection with the above doctrine of

* See page 16.

of animal heat, in as far as it appears evident, that the human phlogiſton is a noxious principle in the conſtitution, and, therefore, its redundancy has been guarded againſt, by the proceſs generating the animal heat, by the extreme exhalent arteries of the lungs, as well as by the perſpiration on the external ſurface of the body.

This fact leads me to remark, that if it be a juſt obſervation, that the cold animals, who have no reſpiratory organs, can alone receive what abſolute heat they have from the aliment in their primæ viæ, and if I am right in having conſidered noxious alimentary ingeſta as a very frequent cauſe of impetiginous appearances, then I think it may be very fairly ſuſpected, that the effects of a putrefactive alimentary fermentation, on DR. CRAWFORD's doctrine of animal heat, may be, in a particular manner, concerned in the ſcorbutic affections of the outer ſurface of the body. For if we are to view animal heat in the light of a neceſſary ſtimulus to promote, and properly carry on, all the functions of the animal œconomy, it ariſes in my mind, as a queſtion,

tion, how far "a *certain* morbid ſtate or "impaired action of the ſyſtem of capil-"lary veſſels"* may not be occaſioned by the inſalubrity of the phlogiſton, or phlogiſticated air, in the courſe of the primæ viæ, which muſt be, under ſuch circumſtances, ſuperabundant, after it has been ſeparated from the putreſcent and unwholeſome diet of ſea-faring people. It may, however, operate, not in this, but, in ſome yet unthought-of, way, ſtill remaining the exciting cauſe of the diſeaſe.

III. There are many varieties among the ſlightly febrile cutaneous diſorders, and we ſtill continue at a loſs how to account for them. May it not be ſome unobſerved or undiſcovered action of the atmoſpheric air, on the arterious and abſorbing veſſels of the true ſkin, either by a noxious quality in it, or by its, in ſome way, occaſioning a derangement in the proper balance to be kept up, between the neceſſary eſcape of phlogiſton from the ſyſtem by the exhalent arteries, and the due admiſſion of a portion of the abſolute heat from the atmoſphe-

rical

* Page 24.

rical air, by the action of the abſorbents, that ſome kinds of the erythematous and eryſepelatous affections of the ſkin are brought about, without ſuppoſing, that either the occurrence of an external injury, or the preſence of a conſtitutional virus, is in any way concerned?*

IV. Again,—May it not be ſome kind of conteſt or colliſion between the human phlogiſton, and the abſolute heat of the atmoſpherical air, which is the cauſe, "Why, in MR. JOHN HUNTER's opinion, "the ſkin and cellular membrane are ſo "extremely ſuſceptible of the ſuppurative "ſtage of inflammation," and the reaſon, alſo, from the ſuppoſed chemical proceſs or attraction only externally taking place, at leaſt in any very ſenſible degree, "that "the internal and deep-ſeated parts reſiſt "it long?"†

V. The above theory may very particularly well apply to the general pathological idea, reſpecting the ordinary acrimony of the perſpirable fluid, and may, therefore,

* Page 53. † Page 54.

therefore, explain why it has been moſt frequently noticed by authors, as the moſt common exciting cauſe of cutaneous eruptions. Is there not a probability of that acrimony originating from the phlogiſticated ſtate of the ſero-lymphatic part of the blood, intended to be carried off by the proceſs of inſenſible perſpiration? A previous detention of this fluid, from conſtriction of veſſels, by its occaſioning ſome irregularity in the eſcape of the phlogiſton, and in the generation of heat, may be the reaſon of its producing ſudorific and miliary eruptions; and of its alſo occaſioning thoſe particular ſenſations attending them, which have already been deſcribed as ſimilar to the pricking of pin-points.*

VI. Further,—It may, in like manner, be the phlogiſton of the human blood, which ſhould be duly and regularly carried off by the inſenſible perſpiration, that becomes the principal agent of that impetiginous acrimony, which is often the conſequence of an effuſion of ſerum under the cuticle, either from an exhalation, or a rupture of the

* Page 75.

the capillary veſſels, and thus may be the ſpring and occaſion of that variety of appearance, ſo frequently obſervable in phlegmonic inflammation.*

VII. I have before noticed the difficulty of explaining the varieties of the ſmall-pox, and the extraordinary difference between the diſtinct and the confluent ſorts, both which have frequently occurred, even when received by inoculation from the very ſame ſubject, even from the point of the very ſame lancet. Encouraged by this difficulty, I ſhall venture to throw out the following quære:

May not this difference between the above ſpecies of that exanthematous diſeaſe, be founded on a deviation from ſome fixed principle of action in the conſtitution, between the phlogiſton of the blood, and the abſolute heat of the atmoſpheric air? That is to ſay;—May it not be ſuppoſed, that the blood has not, at ſuch a time, properly attained, in every conſtitution under the particular animal proceſs of the ſmall-pox, acquired either naturally or from inoculation,

 a ſufficient

* Page 80.

a ſufficient quantity of phlogiſton in the courſe of the circulation; and that, therefore, the inſenſible perſpiration fails of attracting a ſufficient quantity of abſolute heat from the air, ſo as to excite that proper degree of warmth, and its conſequent inflammatory action of veſſels on the external ſurface of the body, which becomes neceſſary to ſtimulate them to the due formation of a laudable pus?*

If heat be a ſubſtance, this is not improbable; and a poſition in DR. CRAWFORD'S fourth propoſition juſtifies this explanation of the variable appearance of the ſmall-pox.

VIII. Moreover,—Various external offenſive matters, when applied to the human ſkin, frequently beget impetiginous appearances. How will it apply here? In the following way, I think. If there be a juſt and reaſonable foundation for the belief, that a natural balance in the ſtate of health is preſerved, *ab origine*, between the eſcape, as above, of human phlogiſton, and the admiſſion of abſolute heat by the external

* Page 85.

ternal abſorbing veſſels, on the general principle of DR. CRAWFORD's doctrine, it will go a great way to leſſen the difficulty of explaining the modus operandi of all foreign offenſive matters, by their probably interfering with, and deranging, that cutaneous proceſs.*

When I reflect upon the great importance of the congenial irritability of the outer ſurface of the human body, in giving, by the means uſed on ſuch occaſions, atmoſpheric life to the ſtill-born infant, I think it confirms the idea of a cutaneous principle generating animal heat: and that extraordinary floridneſs of the ſkin of new-born infants, which laſts for many days, further convinces me, that an atmoſpheric action on the ſkin is neceſſary to the excitement and ſupport of animal life.

IX. The principle generating animal heat, admitting it to be a proceſs in the animal œconomy, which has not yet been fully developed, may be further connected

 with

* Page 87.

with animal motion, or the principle of the moving fibres, in as far as it has been clearly proved, that the extreme arterious veſſels of the circulating ſyſtem, are ſo peculiarly furniſhed with a conſiderable quantity of muſcular action and excitement, with probably this intent among others, namely, to propel the blood with ſufficient force into the very terminations of the exhaling arteries, that the proper quantity of phlogiſton may eſcape by them, in order to promote a due ſeparation of abſolute heat from the air, for the preſervation of perfect health: and if this pneumatic chemical proceſs is ſo animalized, and ſtampt on the inherent nature of all exhalent arteries, which come into contact with the atmoſpheric air, may not an univerſal interruption to the due action of all theſe external capillary arteries, by the remote cauſes, as being concerned in the ſuppoſed acquirement and ſupport of animal heat, be the chief pathological principle producing atony, ſpaſm, and re-action, in the origin and conſtitution of all pyrexial diſeaſes, eſpecially thoſe of the febrile order?*

X. Atmoſpheric

* Pages 127 and 128.

X. Atmoſpheric cold has been enumerated among the remote cauſes of impetiginous diſeaſe, as a very common one, and it has alſo been obſerved, that it produces ſuch affections moſt frequently in the ſanguineous temperament. May not this combination of the remote and prediſpoſing cauſes, the cold and the temperament, be in ſome way connected with an alteration, or derangement, in the chemical proceſs of animal heat?——Further; may it not be on this principle accounted for, independent either of its atonic or ſpaſmodic effects on the muſcular irritability of the capillary veſſels, why the parts of the body, moſt expoſed to the action of the atmoſpherical cold, ſhould be moſt liable to impetiginous eruptions. This opinion appears to me ſupported by the axiom mentioned in DR. CRAWFORD'S fourth propoſition, that more air is phlogiſticated in a cold medium, than in a warm one.—May not, alſo, the extreme morbid degree of atmoſpheric cold on the human body, to which our fellow creature has too often been fatally expoſed, occaſion the quick and certain deſtruction of human exiſtence, by a modus operandi on the principle

principle of deſtroying the vivifying power of the extreme cutaneous, as well as pulmonary, veſſels, ſo completely, as to occaſion an univerſal paralyſis of them? This appears to me probable, if I am at all juſtified in ſuppoſing, that all theſe capillary veſſels are ſo eſſentially ſubſervient to the generation of animal heat.*

XI. It has been obſerved before, that violent paſſions of the mind frequently redden the ſkin. The leſſer ones even often cauſe the bluſh of the cheek. This temporary ſenſation of increaſed heat, in the parts reddening, may alſo depend upon the increaſed pneumatic action between the exhalents and the abſorbents on the outward ſurface of the body, through the medium of the atmoſpheric air, in the manner attempted to be explained in the preceding ſection.†

XII. As the healthful ſtate of the capillary ſyſtem depends on a due tone and action in its muſcular power; and as animal heat,

* Page 133. † See, alſo, page 140.

heat, in DR. CRAWFORD's opinion, is promoted in the lungs by a due balance between the extremes of the circulating ſyſtem, that is, between the action of the heart and the extreme veſſels, ſo may the diminiſhed or enfeebled condition of that power, prevent the ſurface of the lungs from attracting the neceſſary quantity of heat from the atmoſpheric air, and may equally occaſion the cutaneous exhalent arteries to be defective in their vital energy, if heat can be in any way a cauſe ſupporting their healthful action. On the principle of a temporary interruption in the balance of the human circulation, DR. CRAWFORD has explained, in his particular way, the phænomena of the cold ſtage of fever.

XIII. Uncleanlineſs has been particularly taken notice of, as a frequent exciting cauſe of impetiginous appearances. May not its modus operandi interpoſe between the healthful function of the cutis vera, either as an emunctory to diſcharge the ſuper-abundant phlogiſton of the habit, or as an organ of abſorption for the taking

in

in a certain quantity of abſolute heat, by the chemical attraction of the human phlogiſton to the fire of the atmoſpheric air? This appears to me to be a probable way of its becoming injurious to the ſkin and the conſtitution, in addition to what I before threw out, reſpecting its preventing the perfect formation of the rete mucoſum and cuticle.*

It is ſaid of blood, that it has an attraction to inflammable air, and that, when it arrives at the capillary arteries, it may obtain it from different parts of the ſyſtem, by which the venous blood becomes loaded with that principle. Is it, therefore, to be ſuppoſed, that it acquires it in approaching the ſkin, and that it there parts with it to receive heat through the coats of the veſſels, on the outer ſurface of the body? and that in this way it produces the variable fluſh of the ſkin, and the floridneſs of a new-born infant? For if a phlogiſtic proceſs in the habit occaſions the difference between arterious and venous blood, I ſhould ſuppoſe, that this difference

* Page 151.

ence would certainly exiſt in the greateſt degree, in the arterial part of the capillary ſyſtem, as moſt endowed with muſcular excitement and irritability, by which the inflammatory temperament is formed and ſupported: and that it would not afterwards increaſe, from the effect of the circulation ſolely, when the blood was flowing from ſmaller to larger veſſels, unleſs a ſlower circulation can be the principle cauſing and aiding the phlogiſtic proceſs, and thereby occaſioning the ſuperior degree of the phlogiſticated ſtate, in the venous over the arterious blood: then it ſhould proportionally increaſe through the venous portion of the circulating ſyſtem, and be in a particular manner promoted by the circulation of the chylo-poietic viſcera, and eſpecially by that of the liver; and by its courſe through the ſinuſes in the different proceſſes of the dura mater of the human brain.*

Whatever be the conſtitutional cauſe generating the human phlogiſton, the

 chemical

* See DR. CRAWFORD's opinion of the uſe of the ſpleen, and on the circulation of the celiac and meſenteric arteries, in his obſervations on animal heat. Page 400.

chemical attraction of it in the blood to pure air muſt be very great indeed, to compel it to paſs through the coats of living veſſels, to obtain in exchange atmoſpheric heat, and from a fluid too already having a conſiderable attraction to it, and at a part, *to wit*, *on the ſkin*, where its ſeparation cannot be ſuppoſed particularly promoted, in a ſtate of health, by any extraordinary heat and putrefaction, from an internal cauſe. But ſuch becomes the difficulty of explaining the phænomena of a living animal, by the laws of inanimate matter, and I ſhall reſt ſatisfied if my opinions but carry with them the appearance of a clearer approximation to conſiſtency and truth.

I cannot conclude this general commentary on the different parts of the DERMATO-PATHOLOGIA, from the induction of a cutaneous theory of animal heat, without noticing a particular obſervation and opinion in DR. CRAWFORD's laſt edition, reſpecting the reſult of the union of pure and inflammable airs.

According

According to MR. CAVENDISH's experiments, the union of pure air, and inflammable air, as obtained from metals by the vitriolic acid, produces water. This fact has led DR. CRAWFORD to make the following obſervation: "It is poſſible, that a "portion of the pure and inflammable *airs*, "which meet in the lungs, may undergo "that peculiar mode of combination, by "which water is produced." And from it he concludes, "that the pure air re-"ceived into the lungs, combines with "the inflammable principle, which is ex-"tricated from the blood, and that, by "this combination, it is partly converted "into fixed air, and partly into aqueous "vapour."* Here DR. CRAWFORD adds the following, as a note to his obſervations. "*After I had written the above,* "*I found that* DR. HIGGINS *maintains the* "*ſame opinion. See experiments on acetous* "*air.*" It is pleaſing to me to diſcover, that the minds of ſo many learned men, in this philoſophical age, incline to the ſame reaſoning, as a fixed principle, to

 account

* CRAWFORD ON ANIMAL HEAT, &c. 1788. Page 154.

account for the pneumatic operations of an animal machine.

The above ingenious mode of explaining the evaporation from the lungs, on a fixed chemical principle of attraction between pure and inflammable airs, raiſes in my mind a ſuſpicion, that we have not been yet in the full poſſeſſion of the true nature and origin of our cutaneous perſpiration, and tempts me to offer the following elucidation of it.

How often are we witneſſes to its exceſs, in a moſt extraordinary degree, both partially and univerſally, without its appearing at the time to be occaſioned either by an unuſual relaxation, or an increaſed action, of the exhaling veſſels of the ſkin, from the then concomitant ſtate of the conſtitution at large. This has led me to ſuſpect, that the perſpirable dew, ſo often ſeen in innumerable globules on various parts of the body, is not always the product of the ſyſtem, but may be either the atmoſpheric humidity, or a new product, condenſed on the ſurface of our body, from either not being,

being, as in the ordinary way, ſo freely abſorbed, or from being in a very redundant manner afforded by the ſurrounding medium, on the ſame principle as juſt now quoted from DR. CRAWFORD, accounting, in his way, for the expiration of an aqueous fluid from the lungs.

I am, therefore, of opinion, that, on extraordinary occaſions, if not in the ordinary ſtate of the ſyſtem, the pure air of the ambient atmoſpheric medium, in contact with the external ſurface of our body, combines with the human phlogiſton exhaled by the perſpirable arteries, and that, by the combination, the ſame products take place, as above deſcribed in the lungs, viz. a certain portion of fixed air, with the proportionable quantity of aqueous vapour. I do not know whether I might not ſay, that this chemical proceſs may even take place on ordinary and unobſerved occaſions, if the inſenſible perſpiration, as before hinted at in a note at page 226 of this work, contains fixed air, capable of decompoſing lime water.

So

So confident am I, that a further inveſtigation of this ſubject, as connected with the œconomy of a living animal, on the ſuppoſition of an univerſal principle generating and regulating heat in the human conſtitution, ſeriouſly merits the attention of the learned and experienced phyſician, as well as of the chemical philoſopher, that I can almoſt foreſee, that if it could engage the laſt named character, in experiment and further obſervation on the non-reſpiratory animals, it would greatly aſſiſt the medical philoſopher to bring about a complete revolution in the preſent ſtate of human phyſiology, and in the principles of pathology, and the practice of medicine. For it may, on the whole, be obſerved, that various other phænomena, attending the morbid ſtate of the animal œconomy, do appear to me, on a curſory view, to ſupport this general pneumato-pathological idea, independent of the facts which could be ſtill borrowed from anatomy and natural hiſtory, and which have been long diſcovered by philoſophical experiments and obſervations. But much

time

time and extenſive reading, as well as experiments on living animals, become neceſſary to complete the future inveſtigation of this doctrine.

I have, on the preſent occaſion, endeavoured, in as ſhort a way as the nature of the ſubject would allow me, to point out an apparent connection between the outward ſurface of the human body and its diſeaſes, with a probable cutaneous proceſs for acquiring, as well as regulating, animal heat from the atmoſpheric air, on the principle of DR. CRAWFORD's ingenious theory of the uſe of animal reſpiration. I believe it cannot be diſputed, but that there are ſufficient facts made known in late years, by the indefatigable reſearches of philoſophical men, to raiſe in the mind of a reflecting perſon a belief, that the above phyſiological principles may be, from ſome univerſal law in nature, well founded: and, to the judgment of profeſſional men, of greater erudition, and of longer obſervation and experience

rience than myſelf, I ſhall for the preſent leave this haſty elucidation of the ſubject.

As the purport of my next ſection is to take ſome notice of a new opinion reſpecting the proximate cauſe of ſcurvy, on pneumatic principles, I may then find reaſon to mention a few circumſtances, which will further illuſtrate this newly ſuppoſed cutaneous proceſs.

SECTION

SECTION III.

A NECESSARY ENQUIRY INTO A NEW OPINION ON THE SCURVY, ADVANCED IN A RECENT EDITION OF A TREATISE ON THAT DISEASE, FROM THE FIRST HAVING BEEN NOTICED IN THE FORMER PART OF THE WORK, AS WELL AS FROM ITS BEING CONNECTED WITH THE PRECEDING DOCTRINE, AS DEFENDED BY ITS AUTHOR ON THE INDUCTION OF PNEUMATIC CHEMISTRY.

IN the ſecond ſection of the body of this work, expreſſing, that *ſcorbutus very properly belongs to the order of impetigines*, I firſt obſerved, that in the writings of DR. CULLEN the diſeaſe has been attributed to the abſorption of a noxious nouriſhment, from putrid alimentary ingeſta, which opinion, as far as it reſpects

the fluids being the ſeat of the diſeaſe, was then defended and approved by MR. TROTTER, in the firſt edition of his treatiſe. This author's arguments then went to prove, that *a preternaturally ſaline ſtate of the blood* was the proximate cauſe of this diſeaſe.

Since that period, DR. TROTTER'S obſervations, experience, and reflections on the ſubject have induced him to alter his opinion reſpecting the pathology of SCORBUTUS, ſo much ſo, as to claim of me a particular enquiry into its merit, not only becauſe I have already noticed this gentleman's former opinion, but becauſe the novelty of his recent ideas bears ſome relation to the pneumatic principle, which has been ſuppoſed by me to generate heat univerſally, in the human body.

Before I proceed, it is juſt and proper I ſhould inform my reader, that I have been made acquainted with this author's laſt opinions on the ſubject but a very ſhort time, and wholly ſo ſince my reflections led me to the compilation of the

preceding

preceding ſections, ſupporting the probability of a cutaneous generation of animal heat, on a phlogiſtic principle.

The firſt time I ſaw the title page of DR. TROTTER's laſt edition, I had reaſon to expect, that I ſhould find ſomething very analagous to my own reaſoning in the preceding ſections, and I have not altogether been diſappointed. But while his new thoughts on the ſubject help me the more certainly to eſtabliſh the plauſibility of the preceding doctrine of a cutaneous generation of animal heat, they have by no means ſatisfied me, that we are yet in the poſſeſſion of all the knowledge which is neceſſary to lead us to a diſcovery of the real cauſe and origin of ſcurvy. I cannot help differing from him in his concluſions, on this ground, namely, that what DR. TROTTER has conſidered as the proximate cauſe, in his laſt edition, is rather, in my opinion, the therapeutic principle, on which the diſeaſe is removed.

As the work itſelf is not leſs ingenious, than the object of it is meritorious, I

ſhall pay particular attention to his recent reflections on the ſubject, particularly as I admire the ſpirit of inveſtigation in the author of this eſſay, who would not be ſtopt in the career of his endeavours to diſcover more certain means of prevention, by the authority of any thing hitherto written on the diſtemper. I ſhall, however, endeavour to deduce a different proximate cauſe from his own *data*, agreeable to the general principles of my own impetiginous ſyſtem, and ſhall hope that it may lead to what is ſtill in DR. TROTTER's opinion wanting at ſea, to wit, a more certain prophylactic treatment.

DR. TROTTER has divided his ſubject into the hiſtory, the theory, and the prevention, and cure.

In commencing the hiſtory of the diſeaſe, DR. TROTTER objects to that part of DR. CULLEN's definition, which ſays, "In regione frigida, poſt victum putreſ-
"centem, ſalitum ex animalibus confec-
"tum

" tum," and offers the following as more agreeable to our present state of knowledge:

" Asthenia, stomacace, in cute maculæ " diversicolores, plerumque livescentes; " deficiente simul vegetabili materia re- " cente, eundemque vehemente ingerendi " desiderio," leaving out all allusion to the above REMOTE CAUSES.

I cannot fully agree with the author in this alteration, though I approve of his addition respecting the patient's eager desire for vegetables. On his own principle THEY appear to me to have been very justifiably and fairly admitted by DR. CULLEN in his definition, for it cannot be denied, even by DR. TROTTER, but that they are most frequently connected either with the rise or progress of the disease: therefore, the few cases, on particular occasions, and under particular circumstances, to which that part of DR. CULLEN's definition may not so well apply, ought to be looked on as exceptions to the general occurrence of the disease.

DR.

DR. TROTTER is of opinion with DR. CULLEN, that there is "but one ſcurvy, "the ſame in its ſymptoms, however, at "different times variouſly produced," and thinks that DR. CULLEN has aptly termed the occaſional cauſes the *antecedents* of ſcurvy, But why *aptly*, as alluding only to the particular kind of diet? Is not the term antecedent, as applied to this remote cauſe, analagous to the term predipoſing? a bad diet certainly, though ſlowly, gives the evil diſpoſition in the ſyſtem: and is not the occaſional cauſe of every complaint antecedent to its formation? We are not yet arrived at perfection in dividing the remote cauſes into their two kinds; thus ſome of the *predipoſing cauſes* mentioned by DR. TROTTER are rather, in my opinion, occaſional: for there ought to be a diſtinction made between the action of external cauſes, and the effect of predipoſition from conſtitutional weakneſs.

Notwithſtanding, that DR. TROTTER lays great ſtreſs on the influence, which the want of recent vegetable matter has in

in producing the diſeaſe, yet he often admits, that a general atony of the ſyſtem lays the foundation of it. He has, no doubt, firſt obſerved, "that where "recent vegetable matter abounds, the "diſeaſe, ſcurvy, is unknown;" and, "that the anxiety to obtain freſh vege-"tables is the harbinger of the diſeaſe, "and its conſtant attendant through all "its ſtages;" aggravated, however, by a deſire to get on land, and to accompliſh the voyage.

But from experiencing the great influence of the mind in provoking the diſeaſe, he could not avoid, in a ſecondary way, taking notice, "that the depreſſing "paſſions of the mind very univerſally "concur in the production of ſcurvy; "while thoſe of the active kind have the "happieſt influence to prevent it." And as further proving, that an atony of the whole ſyſtem diſpoſes to the diſeaſe, he has proceeded to ſay, that "whatever "can be conſidered as a debilitating "power, when applied to the human

"body,

" body, may be juſtly reckoned among
" the prediſpoſing cauſes of ſcurvy."

In enumerating the particular ſymptoms of the diſeaſe, our author has obſerved, that " pains all over the body, often " worſe in bed, and particularly in the " ſhin bones, reſembling venereal pains," precede the appearance of the diſeaſe: and that, in the further progreſs of the complaint, on the occurrence of the firſt external ſymptoms, " the ſurface of the " body *becomes* rough and dry to the touch, " the pores of the ſkin are evidently con- " ſtricted, and the patient feels the exter- " nal air colder than uſual."

Such are the *leading particulars* in his hiſtory of ſcurvy, which ſeem to me to be connected with the ſubject of a DERMATOLOGIA NOVA. What he has further ſaid on the *diagnoſis* is applicable only to the diſeaſe, as it occurs at ſea. He reprehends the prevailing opinion, that " different ſpecies of cutaneous eruptions, " even among medical men, ſtill paſs for " ſcorbutic,

" ſcorbutic, as being peculiar to certain " conſtitutions." But though the term *ſcorbutic habit* may be often founded on obſolete theory, I cannot fully agree with him in his opinion, that " we ſhould " conſider ſuch as altogether fanciful." I am firmly myſelf of opinion, that particular conſtitutions, even among landmen, under the influence of climate and ſeaſon, aided by a neglect of the due attention to diet and manner of living, are ſubjected to impetiginous affections of the ſcorbutic kind, from the ſame principle, but varying in duration and degree, as well as appearance, from the ſlower operation of the various remote cauſes, whether predipoſing or occaſional; the ill effects of which are perhaps diurnally counteracted by circumſtances in the non-naturals not to be commanded at ſea. As a proof of this, it may be obſerved, that now and then a true ſcurvy will occur on land, characterized by all the leading ſymptoms of a real maritime one.

In commencing his obſervations on the theory of ſcurvy, DR. TROTTER has con-

ſidered the doctrine of its proximate cauſes as hitherto chiefly ſupported *by ſuppoſed chemical changes* in the blood: and has remarked, that even in our own times the CULLENIAN theory had contended for a preternatural ſaline ſtate of the fluids, and had ſuppoſed it to be in this diſeaſe of the ammoniacal kind, *evolved* during the animal proceſs in greater quantity than uſual, from the abundance of marine ſalt taken into the body; and the proviſions themſelves, perhaps, in a putrid as well as a ſalted ſtate. The iſſue of DR. TROTTER's reflections and obſervations is alſo of *the ſame* complexion.

The frequent occurrence of the diſeaſe after a particular kind of diet, naturally led to the idea of its being of a putrid nature, ſtrengthened by the deſire in the afflicted perſon for freſh vegetables: but in DR. TROTTER's opinion, the term *putrid* ill applies to the nature of this complaint; and he laments that the modern chemiſts, who have ſo much enriched the ſcience, ſhould not have guarded againſt the common uſe of the term *putrefactive fermentation*,

tation, as not juſtly applicable both to the decaying of vegetables, and to the putrefaction of animal ſubſtances: for it appears, " that the former yields nothing elſe " than inflammable air, or the *hydrogenous* " *gas*; but the effluvium from the latter is " found to be *ammonia*, or alk: vol: and " compoſed of a ſubſtance peculiar to animal " matter, and the hydrogene."

Dr. TROTTER objects to the application of the above ammoniacal doctrine to the ſtate of the blood in ſcorbutics, on the weight of the following phænomena in it: in the firſt place, becauſe it has no particular ſmell and coagulates; and ſecondly, becauſe it does not grow ſooner putrid than other blood, in the ſame temperature of heat. Theſe circumſtances he has conſidered as incompatible with a preternaturally ammoniacal ſtate of it. But he has obſerved, that the blood of a ſcorbutic patient is manifeſtly of a darker colour than the blood of other people; and that the ſerum of ſuch blood is ſaid to be of a more acrid quality than natural.

When the theory of *fixed air* became adopted by ſeveral pneumatic philoſophers,* to explain the phænomena of diſeaſe, and was believed to be confirmed by their experiments, as proving it the cement, or bond of union, by which all inanimate matter cohered, the putrid tendency of the blood in ſcurvy was attributed to the want of that principle, the reſtoring of which formed the object of their therapeutic treatment. But DR. LIND, the celebrated writer of the modern day on this diſeaſe, is reported from his own obſervations, to have found the blood of a ſcorbutic in an healthy ſtate: he therefore ſought for the pathology of the diſeaſe, in the indigeſtible nature of the diet of ſeafaring people, which in his opinion occaſioned a debility in the digeſtive organs.

Both theſe doctrines are confidently objected to by DR. TROTTER, as unſupported by the uniform ſymptoms of the diſeaſe. He alſo takes notice of a much later

* SIR JOHN PRINGLE, DOCTORS MACBRIDE, HALES, &c.

later opinion than either, advanced by DR. BLANE, in his "obſervations on the diſ-"eaſes of ſeamen." "It has long ap-"peared to me," ſays this author, "that "the ſcurvy is owing rather to a defect "of nouriſhment, than to a vitiated ſtate of "it." All theſe opinions, as founded on the doctrine of a *direct debility*, are attempted to be invalidated by the arguments and obſervations of DR. TROTTER.

Before proceeding to this object he has, however, thought it proper to make ſome ſtrictures on the quality of ſea diet, as being ſalted. The author is of opinion, contrary to LIND, that the ſalt of the ſea proviſions is hurtful, notwithſtanding it has been obſerved by LIND, that ſea-water itſelf has been taken largely without detriment. But DR. TROTTER properly remarks, that it is then ſo diluted, as to be carried off very readily by the emunctories; and he therefore thinks the experiments of SIR JOHN PRINGLE and others, concerning the antiſeptic properties of ſea ſalt, unworthy to be mentioned,

in

in explaining any proceſs within the human body.

After leaving it a queſtion, whether ſea ſalt undergoes any change in the animal body, DR. TROTTER is, from experiment, of opinion, that ſalted proviſions out of the body do; *i. e.* that there is a chemical attraction between the fleſh of beef and ſea ſalt, which becomes the principle of its preſervation, and which is alluded to, by what is, in common language, called, *the taking on the ſalt:* and that when the attraction, by length of time is deſtroyed, the meat putrifies.

If theſe opinions, however be true, though they have not yet been proved by the ingenious author, it remains a queſtion in my mind, in what manner the defect of attraction is brought about, ſo that the proviſions ſhould, from length of time alone, ſuffer a decay. It appears to me, that the author may have conjectured too much here; for if animal matter is prevented from decaying, on the principle of a chemical elective attraction, it may be

be presumed, that the preservation of it would continue for ever. The established laws of such attractions must be deemed invariable. Something more, therefore, than length of time must break through the chemical cohesion; and still, when it takes place, it may remain a matter of doubt, on which part of the compound, that is, whether on the animal, or the saline, part, the third power acts: but it must be left to the chemical investigator to determine, whether the decay is owing, or not, to the effects of the salt upon the meat, or to any other cause.

Dr. TROTTER even talks of a double elective attraction taking place, in order to account for the change, which he has observed, both in the bones, as well as the flesh, of the provisions which have been kept for any length of time. I am obliged to admit the fact, that the provisions do in time so much decay; but I should be most inclined to think, that the change is brought about by the action of the atmosphere on the saline portion of the seaman's diet, weakening its preservative power,

power, rather than to the gradual corrofive effects of the marine falt on the quality of the meat. The fubject, however, more properly claims the attention of the chemift.

It does not appear by the various writings on this fubject, that a farinaceous diet is always hard of digeftion. It, on the contrary, feems to have been very beneficial on fome occafions.* DR. TROTTER confiders it lefs injurious than the falted provifions, notwithftanding that he has admitted, that the unfermented farinacea form a diet not fo eafy of folution as might be wifhed.

Much ftrefs has been laid by fome practitioners on the indigeftible nature of the farinaceous aliment. But DR. TROTTER has further obferved, that the fymptoms of indigeftion do not follow the ufe of this diet, as being hard of digeftion. This he thinks evident from a debility of the digeftive powers not being an effential attendant on the difeafe in queftion, either under

* LIND'S ESSAY ON THE HEALTH OF SEAMEN

under the uſe of the farinaceous or animal diet

So ſtrenuous is our author for maintaining, that the ſtomach does not ſuffer under this diſeaſe, that he quotes ſeveral authors who have noticed, that the ſtomach remains undiſturbed, and the appetite good, even under the ſole uſe of farinaceous and vegetable diet, from which circumſtances it would appear to him inconſiſtent to ſuppoſe, that the ſtomach would crave that food, which had already been the cauſe of diſeaſe.

Dr. TROTTER next obſerves, that the advocates for a *direct debility*, as the principle in their pathology of the diſeaſe, either from a defect of nouriſhment, or a vitiated ſtate of it, have not told us, that an emaciated condition of the body was one of its ſymptoms. He has, on the contrary, remarked, that the ſpare habit of body leaſt favoured the approach of ſcurvy, which he is clear is never attended with emaciation as a pathognomonic ſymptom. In this opinion he ſeems to have been

 ſupported

ſupported by the obſervations of his medical acquaintances in the navy: for the contrary has been reported by them, as frequently occurring; viz. that in a corpulent ſtate of body, the moſt hideous features of the diſeaſe are expreſſed; ſuch as the bloated looks and countenance; ſwelling of the legs; oppreſſion about the cheſt; depreſſion of the ſpirits, &c.

Here I ſhall obſerve, that if the ſcurvy riots in ſuch conſtitutions with peculiar virulence, and in thoſe alone terminates in ſudden death; and if the above be the ſymptoms in the worſt of caſes, I think it may be fairly implied, that the fatality is occaſioned by the injury done to the VIS VITÆ, and to the motions and moving powers of the ſyſtem, and that the fluids, which ought to circulate, are in a ſecondary way only affected.

There is an obſervation made from DR. LIND's work, which it will be here proper to notice. "Perſons," ſays he, "very "much emaciated either with the flux "or conſumption, are ſeldom or never

"ſeized

"ſeized with the ſcurvy." I do not know how this is to be accounted for, unleſs on one of the two following principles, viz. either becauſe theſe diſeaſes are of a ſpecific nature contrary to ſcurvy, that is, that they are attendant on the inflammatory temperament, and cauſed by a peculiar acrimony, or that the human conſtitution is not liable to two diſeaſes at one and the ſame time. Again, it does not follow, that becauſe ſuch perſons are very much emaciated, there muſt exiſt the true idiopathic debility, or univerſal loſs of tone in the muſcular fibre, which has been ſuppoſed ſo particularly to diſpoſe to ſcurvy.

Dr. TROTTER goes on to prove, that the indigeſtibleneſs of a ſea diet is not the cauſe of ſcurvy, by obſerving, that the acids uſed in the cure of ſcurvy do not injure or weaken the digeſtive powers, though ſuch are often very freely uſed, even to an incredible quantity. But this is not the caſe on many other occaſions, and it is very properly obſerved, that they particularly diſagree, even in ſmall quan-

tities, in dyſpeptic and hypochondriacal affections.

From the whole of theſe remarks the author concludes, " that a ſea diet is not " productive of ſcurvy from being hard " of digeſtion, or not affording ſufficient " nouriſhment, and that in this diſeaſe, " there are, really, no ſymptoms of a " weak ſtomach preſent."

Dr. TROTTER next proceeds to his own particular opinion. He avoids offering " arguments againſt the debility preſent " in the ſcurvy; on the contrary, the " relaxed tone, and diminiſhed coheſion, " of the muſcular fibre are admitted in " their fulleſt extent." And he readily allows, that the remote cauſes are of a debilitating nature. But his NEW OPINION is, that there is a ſtate of body to be corrected, independent of that debility in the primary moving powers, and not to be accompliſhed by means to reſtore the tone and tenſion of muſcular fibres.

Conſiſtently

Consistently with these ideas, he says, that the predisposing and occasional causes only accelerate the approach of scurvy, by the general debility which they induce: and he afterwards supports the opinion, that a deficiency of recent vegetable matter, and not a diet of salted meat, is the immediate cause of the complaint. So much has he made up his mind on this point, that he says, "cold is not necessary to excite the disease; that it is "equally found virulent in its symptoms "between the tropics as at GREENLAND; "that even a humid atmosphere is not "necessary," as it is to be met with in the mildest dry weather; and that "even "an unfavourable predisposition of the "body is not required," when the above immediate cause operates on the system. For DR. TROTTER has seen the disease attack the *hardy seaman*, against his resolution of mind to prevent it, and the effect of exercise to overcome it. There is, however, an evident contradiction in the tendency of some of these observations.

As

As a ſtriking inſtance where the *prediſpoſing* cauſes to health, from climate and weather, were favourable, he has mentioned DR. BLANE'S account, when it attacked the whole fleet under LORD RODNEY'S command in the year 1782. This experienced author was then of opinion, that the diſeaſe, on that occaſion, was to be attributed to the ſea diet, as the ſole cauſe, for the crews had very few refreſhments in port before they ſailed.

As further leading to the inveſtigation of the particular pathology of ſcurvy, DR. TROTTER has obſerved, that "The de-"bility attending it is of ſo ſingular a "nature, that nothing ſeems analagous "to it; and that there is no diſeaſe re-"lated to it, by any concourſe of ſymp-"toms, or method of cure." Wine will not prevent it, much leſs cure it; and it is not even deſired by the moſt deſponding ſcorbutic patient.

"The celebrated PERUVIAN BARK, "given to the utmoſt extent, has never "been

" been known to check *its* progreſs, or " cure the ſcurvy." It has not been even found uſeful by the navy ſurgeon in the ſcorbutic ulcer, covered with its coat of blood: although, in ſo ſhort a ſpace of time as twenty-four hours, limes and lemons have altered the condition of ſuch ſores, and have diſpoſed them to put on a florid and healthy appearance. A diet of freſh meat is not even neceſſary, for the cure will be effected by only allowing freſh vegetables, and particularly the acid fruits, to the ſeamen. A plentiful ſupply of apples has been alſo known to cure the ſcurvy in a very few days.

Emaciation and debility are ſometimes cauſed to a very great degree, by the uſe of acid fruits. This was the caſe among the negroes under the care of DR. TROTTER; notwithſtanding which, the cure went on progreſſively by their uſe, though they had conſtantly occaſioned a very lax and purging ſtate of the bowels, and a conſiderable degree of emaciation. Thus, the antiſcorbutic effects of the fruit were not leſſened by ſuch an operation. Theſe facts

confirm

confirm DR. TROTTER in his opinion, "that there is *a ſtate of the body to be* "*corrected, beſides the debility.*" DR. BLANE has recorded a ſtriking inſtance in ſupport of this opinion,* which DR. TROTTER conſiders as a ſtrong argument againſt the gradual diminution of the vital power being the proximate cauſe of the diſeaſe.

The occurrence of the diſeaſe ſcurvy on the ALPS, and of thoſe diſeaſes in the mild climate of NAPLES, the petechial fevers and dry gangrenes, as ariſing from the ſame cauſe, to wit, a famine, and recorded by DR. MILMAN in his *enquiry into the ſource of the ſcurvy and putrid fevers*, is accounted for by DR. TROTTER on a different principle from the laſt named author, namely, that the want of a vegetable diet had occaſioned the diſeaſe on the mountains, but from its abounding in the vallies, it had ſecured the inhabitants from that complaint, though it had prediſpoſed their bodies to receive the contagion of typhus. This fact

* Page 301 of his obſervations.

fact has led DR. TROTTER to make the following general obſervation. "We are "acquainted with, and can allow, no "other modification of the remote cauſes, "as influencing the operation of a ſea "diet, than what ariſes from a deficiency "of freſh vegetable matter. From the "moſt northern latitude of the arctic circle "that has been navigated, to the equator, "its effects have been conſtant and uniform "in producing ONE DISEASE." "The ef-"fects of a ſea diet are not even altered "by the concurring action of humidity, "fatigue, preceding illneſs, ſedative paſ-"ſions, &c. though theſe will occaſion-"ally accelerate the approach of ſcorbutic "ſymptoms."

After ſome obſervations on the practice recommended by LIND and MILMAN, as being inconſiſtent with their theories; on the impropriety of recommending the lemon juice, and citric acid to be diluted, in order to render them the more ſudorific and diuretic; and on the effects of keeping up the patients ſpirits, by good news, &c. as being apparently exaggerated by the

above authors; (though in my opinion DR. TROTTER has too much diſbelief about him in this particular,) he ſums up his arguments againſt the doctrine of debility, by the following general concluſions.

1ſt, That a ſeaman's diet, as conſiſting of ſalted meat, &c. does not produce ſcurvy, by weakening the digeſtive powers, from its indigeſtible nature, and thereby abſtracting nouriſhment from the body.

2dly, That the debility which accompanies ſcurvy cannot be cured by thoſe means, which are found, in other caſes, to be moſt effectual in reſtoring the tone, tenſion, and contractibility of the weakened muſcular fibre. And

Laſtly, That the proximate cauſe of ſcurvy is ſtill to be ſought for, from ſome peculiar ſtate of the blood.

I am now approaching to that part of DR. TROTTER'S work which intereſts me moſt, in reſpect to my own concluſions from the preceding facts, and mean in a particular manner to have an eye to the hope he has expreſſed, of obtaining, by his perſeverance,

ſeverance, that aſſiſtance from the *materia medica*, which is now only to be found from recent vegetable matter: for freſh vegetables, he obſerves, are difficult to be procured, when the diſeaſe is moſt fatal, viz: in ſhips at ſea. He ſtill remains ſo convinced of our preſent imperfect knowledge of this diſeaſe, and of the difficulties attending the inveſtigation of it, that he has been driven to acknowledge, that "what "we now know, may, to ſome appear ſuf-"ficient for the purpoſes of curing it; but, "*for his part*, he is not *yet* ſo fully ſatis-"fied."

The only change in the ſtate of the blood, properly authenticated by writers, appears to be in the colour. This circumſtance had been very early noticed by DR. TROTTER, as appears by the following note at page 36 of his firſt edition. "The "blood which flowed by theſe hæmor-"rhages (meaning from the noſe and the "inteſtines) was always of *a darker colour* "*than natural*." The remark has been general among the navy ſurgeons. LIND has obſerved, that he only once found it

of a ruddy colour; but this patient was feverish. From the effect of lemon juice in twelve hours on the scorbutic ulcer DR. TROTTER is of opinion, that it quickly restores the ruddy colour to the blood.

In proof of this condition of the blood, DR. LIND has said, "that when the lips and "corners of the eyes, where the blood "vessels are most exposed, are narrowly "examined, they appear of a greenish "tinge." And he has further observed, "that the colour of the face afterwards "becomes more darkish or livid, and that "the gums have an unusual livid appear-"ance." DR. TROTTER also makes mention, "that this change in the blood is "expressed, in the most *lively* manner, on "the cheeks and lips," which is further supported by DR. GRAINGER's denominating it of a *livid colour*. All LIND's remarks seem to prove the altered texture and appearance of the blood; and we have other convincing proofs of the same from ROUPPE, who has also written on this marine disease.

From

From all theſe authorities, as well as from his own obſervations, DR. TROTTER concludes, " that the florid healthy colour " of the blood is changed in ſcurvy, to a " livid, darkiſh, and even a black ſhade."

DR. TROTTER next proceeds to ſome obſervations on the difference in the colour of the venous and arterial blood, and takes notice, that phyſiologiſts have always described the venous as darkeſt. " The " florid colour, ſays he, ſeems therefore " to be gradually changed and expended in " the courſe of circulation from the heart " to the extreme veſſels on the ſurface of " the body. It is alſo found again reſtored " in the paſſage of the blood through the " lungs, by the action of ſomething " which it receives from the atmoſphere " during reſpiration."

He has borrowed his proofs and explanation of this change from the experiments of DR. E. GOODWIN, who, it appears, firſt made them known in his inaugural diſſertation at EDINBURGH; and afterwards in

in an ENGLISH dreſs, under the title of "*The connection of life with reſpiration*," works I have not yet met with.

DR. E. GOODWIN, it appears, has had the ſame object in view, as DR. CRAWFORD, and has confirmed by his experiments the opinion of his predeceſſor on this ſubject; for as quoted by DR. TROTTER he has proved, "that the blood receives its more "florid colour during the action of reſpi-"ration; and this he has aſcribed to the "chemical effect of the pure part of the "atmoſpheric air, commonly called de-"phlogiſticated air." DR. TROTTER alſo obſerves, that ſome of what he has called DR. GOODWIN's collateral experiments, juſtify the concluſion, "that vital air, in "other ſituations, will change the dark "complexion of the blood to a florid "colour." I am ſurpriſed he has not conſulted DR. CRAWFORD on this ſubject.

DR. TROTTER has quoted verbatim the particular experiment made by DR. GOODWIN, proving this effect of dephlogiſticated air on the venous blood, taken from the jugular

jugular vein of a ſheep: and from the particular manner in which it was made, a phænomenon attends it, which merits notice. Quickſilver was made uſe of in the experiment; the blood ſuddenly became florid; and a few minutes after, the quickſilver *aſcended* two or three lines in the receiver. This *circumſtance* ſeems, by the quotation, to be attributed to a ſmall portion of air diſappearing in the proceſs; but it no doubt ought to have been attributed to the ſenſible heat, produced by the union of the phlogiſton of the blood with the dephlogiſticated air in the receiver,* and expanding the quickſilver.

DR. TROTTER therefore concludes, from theſe experiments, "that the black colour "of the blood in ſcurvy is owing to the "abſtraction of this principle (the dephlo-"giſticated or vital air) by the remote "cauſes;" and he then proceeds to ſtrengthen his opinion by ſhewing "that vital "air is a component principle of freſh "vegetables, but particularly of thoſe, "that are found moſt effectual for the cure

* See page 62 of DR. GOODWIN's work.

" cure of this diſeaſe," and by inveſtigating the principle, on which freſh eſculent vegetables and acid fruits prevent and cure the diſeaſe, he hopes to throw very conſiderable light on the ſubject of the proximate cauſe of ſcurvy.

DR. TROTTER does not approve of DR. LIND'S ſentiments, reſpecting the effects and operation of recent vegetables, and is at a loſs to underſtand how the antiſcorbutic herbs are of uſe by promoting and increaſing the ſecretions, " unleſs ſome-" thing noxious is to be eliminated from " the body." I believe it can be made hereafter to appear, that a ſomething noxious is corrected in the habit, and afterwards expelled from it, by the very principle, on which DR. TROTTER has ſuppoſed recent vegetable matters to effect a cure. But their diuretic effects are to be conſidered as a ſecondary operation from them, by their having contributed to reſtore the neceſſary conſtitutional ſtimulus, which ſupports the tone and energy of all the motions and moving fibres of the ſyſtem.

DR.

Dr. TROTTER mentions the caſe of a lady he knew, who, from a ſevere dyſpeptic ſtate of the ſtomach, obliging her to live for weeks together ſolely on animal food, had many ſerious ſymptoms of the true ſcurvy, even to livid ſpots on her legs; ſhe could not uſe vegetables, therefore DR. TROTTER concludes, that the antiſcorbutic herbs cannot ſtrengthen the tone of the ſtomach, or invigorate the organs of digeſtion; but when the indigeſtion wore off, this lady could take them. This caſe ſurely proves, that a debility of the digeſtive organs, even with a freſh animal diet, becomes a prædiſpoſing cauſe to ſcurvy; how much more likely then is this to be the caſe, under the debilitating operation of ſo many noxious occurrences, in the ſeaman's way of life. We are left however by the author to conjecture, by what means the indigeſtion, and the ſymptoms of ſcurvy, in the above caſe, were removed, or in what ſpace of time, or order, they diſappeared.

In further confirmation of this new opinion of ſcurvy, DR. TROTTER has

remarked, in all the caſes which he has attended, the longings and deſires of the patient for acids; and has conſidered it as one of the ſtrongeſt inſtincts in nature we are acquainted with. He has repeatedly obſerved the ſcorbutic ſlaves throw away the ripe guavas, and devour the green ones with eagerneſs. Theſe extreme ſymptoms of corporeal diſtreſs could ſurely only attend the worſt of caſes. But certainly the ſame concluſion cannot be drawn, from the circumſtance of a few raw ſailors of the BERWICK, who were *only* tainted with the diſeaſe, receiving ſo much benefit from their viſit to the ISLE OF WIGHT, to which place they were purpoſely ſent for the benefit of *air* and *exerciſe*. Theſe were *the antiſcorbutics* which certainly relieved them, though it does not take from the application and intent of DR. TROTTER's remark, on the pretended ſkill of the old ſailor who attended them, who on taſting ſelected only thoſe berries and herbs, which poſſeſſed an acid quality.

To determine the principle on which recent vegetable matter proves of ſo much utility

utility in the prevention and cure of ſcurvy, DR. TROTTER next proceeds to inveſtigate the nature of the citric acid, as abounding in the lemon.

It ſeems, that every ſubſtance termed *acid* is found to be compoſed of the acidifying principle, and a baſe peculiar to itſelf. This is ſaid to conſtitute the difference of acids; each has its own radical; but what communicates acidity to the whole is vital air, or the dephlogiſticated air of DR. PRIESTLEY. Modern chemiſts are of opinion, that vital air, or what is thought to be more properly called *oxygene*, is a component principle of the acid fruits, and DR. TROTTER has therefore concluded, that this is the quality which they reſtore to the human body, when labouring under ſcurvy.

He obſerves, that it has been already proved, that the blood in this diſeaſe is changed from a florid to a livid or black colour, and that, from DR. GOODWIN'S experiments, vital air is the principle in nature, which reſtores the florid colour to the vital fluid. From theſe premiſes it is

obvious, that the ſalutary effect of the citric acid is owing to this quality.

The ſum therefore of the preceding facts and obſervations is, " that the proximate " cauſe of ſcurvy is nothing elſe but a " ſomething abſtracted from the body, by " the remote cauſes, and from what has " been juſt delivered, that *ſomething* is " pronounced by DR. TROTTER to be VI- " TAL AIR."

The pneumato-phyſiological principle, by which this SOMETHING is reſtored to the conſtitution, is expreſſed by the author in the following paſſage: " we are of opinion " that the citric acid is decompoſed by the " organs of digeſtion and aſſimilation, " after which the oxygenous principle is " by chemical attraction blended with the " circulating maſs."

Here the author at laſt fails of inveſtigating, in my opinion, the true nature of the diſeaſe. He is, as it appears to me, juſtified in thinking, that the citric acid cures by the dephlogiſticated air in its compoſition;

poſition; but he falls ſhort of eſtabliſhing its *modus operandi* by a clear connection with the true pathology of the diſeaſe; and from the acknowledged difficulty of the ſubject he has been compelled immediately to add, "that what other changes the oxy-"genous principle may undergo, beſides "giving the blood a florid colour, he does "not feel himſelf bound to explain."

After having enumerated the aſtoniſhingly rapid and ſucceſsful effects of the lemon juice in the worſt of caſes, DR. TROTTER has made the following obſervation, immediately upon having noticed the abſorption of the effuſed blood in different parts of the body. "This abſorption, "ſays he, beſpeaks a degree of ſtimulus "communicated to the lymphatic ſyſtem, "as well as to the ſanguiferous, as ſoon as "the blood has received a ſufficient quan-"tity of the vivifying principle." Does not this language clearly convey the idea, that the citric acid ultimately acts on the motions and moving powers of the circulating ſyſtem, in its progreſs of operating to reſtore the healthful condition of all the circulating fluids?

In

In profecuting the explanation of the action of the citric acid on the conftitution, he attempts to do away the idea of its emaciating directly, by the operation of purging, on the following fingular theory.

He thinks it is probable, " that a pro-
" portion of undecompofed acid fo affects
" the affimilation of the aliment, that it is
" taken unprepared into the blood veffels,
" peculiarly acts upon the fat, reduces it
" to a faponaceous ftate, and difpofes it to
" run off by the excretions, thereby indu-
" cing a wafting of the fleffy parts, and
" adipofe fubftance."

He then ftarts a queftion, which the author thinks might be raifed againft his theory, why every acid is not equally effectual in the cure of fcurvy, fince they all poffefs this common principle, and many of them in a much greater degree than the lemon juice? He flatters himfelf to do away the apparent objection completely, by the following ftatement.

It

It ſeems from the experiments of modern chemiſts, that the oxygenous principle bears different degrees of attraction to different ſubſtances, and to the radicals of the various acids. In a table propoſed by MESSRS. LAVOSIER, DE FOURCROY, and others, 1787, are to be found thoſe bodies, of which oxygene is a compound, arranged according to their degrees of elective attraction or affinity. At the top of this column is water; next follows nitrous acid, carbonic acid, ſulphuric acid, &c. and not till after the tartarous acid, come the oxalic, gallic, citric, and malic acids: Thus it appears, that theſe latter acids are more eaſily decompoſed by the powers of digeſtion, from their radicals and the oxygene being combined in weaker degrees of attraction, and therefore become more ſpeedily anti-ſcorbutic.

He alſo thinks another objection might be urged, as remarked in the following quære. How happens it, that the acetous acid cannot cure the ſcurvy, ſince it has more oxygene in its compoſition, than the malic, citric, or oxalic acids? He anſwers

ſwers this objection by obſerving, that as the attraction between the radical and the oxygene of the acetous acid is more reciprocally proportioned to one another, it cannot ſo readily undergo a decompoſition in the body, from their union being thereby the firmer, and therefore it only acts upon the fat, and is diſpoſed to run off by the excretories. This opinion he thinks confirmed by the circumſtance of the nitrous and ſulphuric acids paſſing through the body pure, and unaltered, as when received into the ſtomach, in whatever manner exhibited, notwithſtanding their acidity approaches to the higheſt degree.

He proceeds to the concluſion of his theory, with an eulogy on the importance of *pure vital air* to the animated, as well as the inanimate parts of nature, calling it the oxygenous principle, on which not only reſpiration, ſanguification, and ſecretion, may have to depend for perfection, but as influencing and ſupporting combustion, vegetation, the calcination of metals, &c. in ſhort aſſerting, that " its in-
" fluence is unbounded, and that the modi-
" fications

" fications of its agency are beyond cal-
" culation."

Notwithſtanding theſe extenſive ideas of its univerſal operation, DR. TROTTER has very honourably acknowledged himſelf " at a loſs to explain, the *ratio ſymptomatum* " of ſcurvy, and in what manner a dis- " eaſed ſtate of the blood communicates " its influence to the moving powers of " the body," although he has diſcovered, " that the cloat of blood, covering the " ulcer in the inveterate ſtage of the dis- " temper, is peculiar to the diſeaſe;" and " that the ſerous parts of the blood, by " the application of any ſtimuli to the " ſore, ſhew not the leaſt diſpoſition to be " converted into pus, as in other caſes." He has therefore ſaid, " that ſcurvy is at- " tended by a train of ſymptoms peculiar " to itſelf, and which the genius of the " diſtemper has rendered extremely diffi- " cult to explain."

DR. TROTTER commences his obſervations on the prevention and cure of ſcur-

vy, by remarking, that the cauſes, why it ſtill continues "the ſcourge of long "voyages and a ſea life," are in part irremediable, notwithſtanding the wiſe regulations, which have been of late years adopted. He has conſidered the prevention of it ſo much connected with rules for the general health of ſeamen, that he has premiſed his particular treatment of the diſeaſe, with remarks, 1ſt,—on the method of recruiting our navy by the impreſs ſervice, and on its inconveniences as prædiſpoſing to ſcurvy: 2dly,—on the humidity of the atmoſphere on board king's ſhips, from various cauſes; and 3dly,—on the want of a due ventilation from various inattentions, and defect of diſcernment in that buſineſs.

He then properly obſerves, that the prevention of all diſeaſes muſt depend upon a knowledge of the prædiſpoſing and occaſional cauſes: but though of this opinion, he has ſaid, that all the prædiſpoſing cauſes operating together cannot produce the diſeaſe SCURVY without the exciting cauſes. A diet of ſalted meat, or ſmoke dried

dried provifions, without frefh vegetables, have been generally looked on as the exciting caufes: but DR. TROTTER has advanced it as his opinion, "that a deficiency of "*recent* vegetable matter alone is the occa-"fional caufe of fcurvy."

I think I have now properly prepared my reader, by the preceding facts and obfervations, from various writers on fea-fcurvy, for receiving my opinion of the pathology and proximate caufe of the difeafe. I have thought it of confequence to make them well acquainted with the various modern explanations of this *unique* diforder, as it is my opinion, that many of the land-diseafes of the fkin may be looked on as modifications of that virulent fporadic complaint, owing to the operation of the fame remote caufes acting on particular temperaments, and producing that variety of what are called fcorbutic affections, either from the tardinefs of their approach, or from a leffer number of them acting at the fame time, independent of their being diurnally counteracted, as I have faid before, by fome

circumſtances, in the mode of living on land, favourable to health. Theſe reaſons muſt render it uſeful to well underſtand the nature and treatment of SEA-SCURVY.

SECTION

SECTION IV.

THE PROXIMATE CAUSE OF SCURVY IS A CERTAIN MORBID STATE OR IMPAIRED ACTION OF THE INTESTINAL AND CUTANEOUS CAPILLARY VESSELS, OCCASIONED BY THE SEDATIVE EFFECTS OF A REDUNDANT QUANTITY OF PHLOGISTON IN THE PRIMÆ VIÆ AND HABIT, FROM THE NATURE OF THE DIET OF SEA-FARING PEOPLE.

SUPPORTED by the present improved state and promising prospect of the science of medicine, "by the method of experiment "and induction alone,"* I may venture to consider it as probable, that the HUMORAL PATHOLOGY cannot long stand its ground; though while all our theories remain involved in great obscurity, and encompassed with numerous and encreasing diffi-

* CRAWFORD on animal heat.

difficulties, from the multiplication of the organic functions of an animal machine, THAT ONE will no doubt continue for ſome time the ſubject of diſpute.

The principle for our future inveſtigation of the diſeaſes of the human body, as laid down by the experienced head and obſerving eye of CULLEN, in the preface to his firſt lines of the practice of phyſic, authoriſes me to attempt the following elucidation of ſcurvy. If I ſhould fail of ſatisfying the well ſtored mind, ſuch an intelligent reader will be readily diſpoſed to attribute it to the difficulty of diſcriminating between the various motions and moving powers of the animal œconomy, as connected with the diſeaſe: but I am of opinion with DR. CULLEN, that though difficult it ſhould be attempted, with the hope, that from the multitude of future obſervers on this *new* principle, it will at laſt perfect that "better train of inveſtigation," in which it was that celebrated profeſſor's opinion phyſicians have been of late years engaged.

In

In my early obſervations on ſcurvy, in the ſecond ſection of the DERMATO-PATHOLOGIA, I ſaid, " that we ſhould call " *that* the proximate cauſe, which imme- " diately brings about the morbid condi- " tion of the ſkin, and *that*, *I then ſuppoſed*, " would be found ſeated in the veſſels of " the parts affected."

That opinion is perfectly conſonant with my preſent inveſtigation of the ſubject, on the principle of its being cauſed by noxious alimentary ingeſta, operating on the abſorbing principle of the alimentary canal, and truly accords with there being but ONE SCURVY.

SCURVY is certainly a deranged ſtate of the whole animal ſyſtem, characterized more or leſs by the leading features of a diminution of the vital and muſcular principles, and the marks of a putreſcent ſtate of the fluids, in the capillary veſſels.

I am of opinion, that the animal œconomy is to be conſidered as an hydraulic machine, liable to a loſs of balance in the action

action of its different parts, from various cauſes, but ſtill ſo poſſeſſed with inherent powers to carry forward the fluids to be circulated through it, and to be effuſed and ſecreted by it, that when deranged by any noxious matters acting on its living powers, the fluids muſt, of courſe, ſtagnate, and muſt, ſooner or later, put on the appearance of what has been called a putreſcent change.

The animal machine is moreover doubly complicated, in as far as it is every where endowed with active and moving powers to ſupply its deficiencies and evacuations, by an abſorbing principle, and thus to inſtil, or take in, nutritious and vivifying particles, of various kinds, from the air and the aliment, by the two principal ſurfaces of the body, viz. internally, by the ſtomach and inteſtinal tube; and externally, by the pulmonary and cutaneous organs. We ſurely cannot deny *that principle* to the animal, *which* has been admitted to exiſt in the vegetable, kingdom.

Various

Various cauſes connected with the atmoſphere, appear capable of debilitating our animal machine; but on no occaſions ſo much, as when it is *firſt* deprived of a free ventilation of THE ATMOSPHERICAL AIR, from which it is to generate and abſorb the due quantity of abſolute heat; and, *in the ſecond* place, of a proper degree of CORPOREAL EXERCISE, by which the powers of all its various ſecerning organs and emunctories are promoted. Such external cauſes are of themſelves ſufficient, in my opinion, to derange the proceſſes of chylification and ſanguification; but when to theſe are added the depreſſing power of MENTAL AFFLICTIONS, it cannot at all be wondered at, that SO MANY REMOTE CAUSES *combined*, ſhould ſo quickly affect digeſtion, and poiſon chylopoietic abſorption. Such a combination would ſurely produce hurtful effects on the eſtabliſhed idioſyncracy between the PRIMÆ VIÆ and the TRUE SKIN, and clearly ſupported VAN SWIETEN in his opinion, that the exciting effects of indigeſtible matters in the ſtomach, aggravated the ſymptoms of the ſcurvy.

Still it appears, if full weight is to be given to the recent obſervations of DR. TROTTER, that ALL THESE injurious ſtates and conditions of human exiſtence, to which too many of our fellow creatures are expoſed, are not of themſelves ALONE SUFFICIENT to produce a true SEA-SCURVY, under the diſadvantage of an unwholeſome animal, and a debilitating farinaceous, diet, unleſs there be wanting, at the ſame time, a ſufficient quantity of RECENT VEGETABLE matter.

Let THIS LAST be granted, and what are we then to conclude? We can only conclude, that SUCH A PART of a ſeaman's diet, corrects, agreeable to DR. TROTTER's opinion, *a certain ſtate of the ſyſtem*, brought on by the morbid action of the remote cauſes, and which ſtate he has conſidered to be "*an abſtraction* of the "VITAL, or dephlogiſticated, AIR, from "the blood;" but *which* may be equally looked on, as owing to *adiminiſhed generation* of IT, from a debility in the ordinary motions and moving powers, regulating and controuling ANIMAL HEAT.

What

What the particular tendency of *ſuch a ſtate* of the ſyſtem is, I ſhall now attempt to elucidate, agreeable to my own reaſoning on the pathology of the diſeaſe, as an impetiginous affection, and ſhall hope thereby to introduce my reader, to a nearer approximation to the true nature of a ſcorbutic diſorder.

The ſubjects moſt commonly afflicted with all the variable degrees of ſea-ſcurvy, are firſt gradually, though ſometimes rapidly, debilitated in their ſyſtem, by the operation of ſome one, if not more than one, of the remote cauſes of the diſeaſe; and, under this and other diſadvantages, are obliged to live principally on a diet of ſalted meat, more or leſs tending to the putreſcent ſtate, either from age, or from other inattentions to it. Whenever I have had the opportunity of enquiring of the ſeaman, to what he and his meſſmates have been accuſtomed to attribute the diſeaſe on board of ſhip, they have all agreed in conſidering it, as the effects of living on ſalted or bad proviſions.

Animal heat has been ſaid to be promoted by a putreſcent ſtate of the fluids, either when local, or general. On this principle DR. CRAWFORD accounts for the greater degree of heat in putrid fevers, and topical inflammations: a dead animal ſubſtance, therefore, in a ſtate of putrefaction, can be very readily admitted to be ſuper-abundantly loaded with the phlogiſtic principle; and when ſuch is received into the alimentary canal, under a debilitated condition of the ſyſtem, it may undergo a very imperfect ſolution by the gaſtric and other digeſtive proceſſes, whereby the nutritious particles, to be abſorbed into the habit, may be rendered of a nature too phlogiſticated, independent of the topical inſalubrity of the phlogiſton on the vaſcularity of the primæ viæ.

Theſe perhaps local atonic effects, joined to the prædiſpoſing debility of the ſyſtem from the remote cauſes, may naturally occaſion a want of that ſufficient energy in the veſſels of the inteſtinal canal, and chylopoietic viſcera in general, to dephlogiſticate all the inflammable air of ſuch a noxious

noxious aliment, and in this way may fail to produce the neceſſary quantity of abſolute heat, to ſtimulate the ſyſtem of the capillary veſſels, as well as the circulation through the whole of the animal machine.

The ſedative effects of this principle of inflammability, whether circulating in the fluids, or lodged in the primæ viæ, further aids the operation of the other remote cauſes, by weakening the action of the heart, and arterious ſyſtem, either by a direct operation on them, or by impairing, or totally deſtroying, the eſtabliſhed ſympathy of action between the veſſels of the inteſtinal canal, and thoſe on the outward ſurface of the body; and a check is thereby given to the exhalation of the phlogiſton by the extreme arterious veſſels of the circulating ſyſtem.

This capillary debility is probably attended with a diminution of the neceſſary ſeparation of abſolute heat from the atmoſpheric air. The occurrence of this diminution in the exhalation and effuſion from the arterious ſyſtem, muſt of courſe be

be attended with a diminiſhed abſorption of abſolute heat, by the veſſels of the lymphatic ſyſtem, as well as in ſome places by abſorbing veins, if the opinion I have endeavoured to eſtabliſh, of an univerſal principle in the animal conſtitution to generate heat, be well founded. This heat on the ſurface of the PRIMÆ VIÆ, as well as on thoſe of the lungs and ſkin, proves a ſtimulus to the action of all the abſorbing veſſels, whereby the animal machine is duely ſupplied with its *pabulum vitæ*, its univerſal vivifying power.

Moſt of the preceding facts and obſervations from writers on the ſcurvy, accord in the ſupport of this pathology, which ſeems to me well ſuited to explain the various phænomena of the diſeaſe, and in a very evident manner accounts for thoſe particular ſymptoms, mentioned by DR. TROTTER, at its approach and commencement, viz. "the univerſal pains of the "body, eſpecially of the ſhin bones; and "the roughneſs, and dryneſs of the ſkin, "with its ſenſe of feeling the external "air colder than uſual."

Let

Let us now ſee if the therapeutic treatment, from which DR. TROTTER has drawn his proximate cauſe, is conſonant with the above pathology: that is to ſay; does the *modus operandi* of the citric acid accord with ſuch an explanation? In my opinion, it does particularly well.

The ordinary difference of colour between VENOUS and ARTERIAL BLOOD has been clearly proved by DR. CRAWFORD'S experiments to depend upon PHLOGISTON, and ABSOLUTE HEAT. It is further made to appear by DR. TROTTER, ſupported by the experiments of DR. GOODWIN, that the DARKER COLOUR of ſcorbutic blood is occaſioned by a redundant quantity of the INFLAMMABLE PRINCIPLE in it, and that VITAL, or dephlogiſticated, AIR, is capable of again reſtoring it to its FLORID STATE. It has alſo been further proved, "on the induction of pneumatic chemiſtry," that the CITRIC ACID contains this air in large quantity; that it is eaſily decompoſed from its RADICAL; and that it,

in

in ſome way or other, ſpeedily acts upon, or is taken up into, the HABIT, ſo as to have a very rapid effect in healing the SCORBUTIC ULCER, covered with its effuſed CLOAT OF BLOOD.

On theſe DATA, I ſhall preſume to ſay, that the remarkable ſalutary effects of the *juice of the lemon*, in the cure of *ſea-ſcurvy*, is owing to its *deſtroying* the redundant *phlogiſton* injuring the functions of the chylopoietic viſcera, and to its property in *reſtoring* a proper quantity of *abſolute heat* to the ſyſtem, as the *vivifying principle* exciting the motions and moving powers of the MUSCULAR FIBRE.

The proximate cauſe therefore, as connected with the ONLY occaſional cauſe aſſigned by DR. TROTTER, to wit, A DEFICIENCY OF RECENT VEGETABLE MATTER, juſtly appears to me to be no more than the THERAPEUTIC PRINCIPLE, by which the true immediate cauſe of all the phænomena of ſcurvy is removed; to wit, a præternaturally phlogiſticated ſtate of the blood, cauſed by the ſedative effects of a ſea-faring life,

life, and a putrefcent diet, on the capillary veffels of the inteftinal canal, affecting thereby, from eftablifhed balance, all the capillary veffels on the external furface of the body.

This reafoning is quite confonant with its having been confidered by DR. CULLEN, and other writers, as a proper impetiginous affection: for the phænomena, eftablifhing a clear deviation from the true ftandard of a healthy circulation, are all noticed as occurring on the outward furface of the body, either as efflorefcencies or hæmorrhages. Why fuch do not as readily occur on, and from, the lungs, may, on the above principles, be eafily accounted for.

I may, therefore, fairly conclude, that a diminution of the vital power, by the various remote caufes, becomes the original prædifpofing general caufe of fcurvy, and that a *certain* morbid ftate, or impaired action of the fyftem of internal and external capillary veffels, caufed by the fedative effects of the redundant phlogifton in the primæ viæ and habit, is the PROXIMATE CAUSE.

SECTION V.

THE PROPHYLACTIC, AND CURATIVE, TREATMENT OF SCURVY ARE TO BE FOUNDED ON THE PRINCIPLE OF PREVENTING, AND REMOVING, THE PRÆTERNATURAL ACCUMULATION OF PHLOGISTON IN THE PRIMÆ VIÆ AND HABIT.

BEFORE I enter upon ſome conſiderations on the concluding objects of the preſent enquiry, viz. the prophylactic and curative indications of the diſeaſe, I ſhall premiſe the following phyſiological opinions, as the ground on which the treatment in view is built.

EXHALATION, EFFUSION, and ABSORPTION, are to be looked on as proceſſes in the animal machine, ſo dependent on the tone and muſcular energy inherently attached to the ſyſtem of capillary veſſels, that their ſalutary completion, and good effects,

effects, muſt depend upon the due circulation of the animal fluids through the ſaid veſſels, and which, therefore become liable to be deranged by any cauſe diminiſhing their natural powers, or occaſioning an inordinate ſtate of action in them. Such a deviation from their ordinary healthful operation, may be the effect of a redundant quantity of phlogiſton in the primæ viæ, by the exciting cauſe of ſcurvy.

The human ſkin, as an emunctory of the body for the diſcharge of the ſuperabundant phlogiſton, muſt neceſſarily be affected in ſcurvy, by ſuch an inteſtinal condition, as the ſea-faring diet occaſions, eſpecially when it is reflected on, that its inherent ſympathy with the *firſt paſſages* may be particularly called up, on the occurrence of any noxious ingeſta *there* received, if ſuch ingeſta have a ſedative effect on the vaſcularity of the ſtomach and inteſtines.

Theſe vaſcular organic proceſſes have indubitably a connection with the doctrine of an ARTERIO-MUSCULAR PATHOLOGY,

originally ſpoken of,* from the ſtriking evidence of all the capillary veſſels being endowed with an extraordinary proportion of the living or moving principle; and without carrying with them too much the appearance of depending on a *vis conſervatrix naturæ*, are conſonant with the original opinion I ſat out with, that the ſcurvy probably aroſe from a morbid action and condition of the motions and moving powers of the parts concerned.

Are there any phænomena of diſeaſe common to human nature, that will juſtify the opinion, that a MUSCULAR PATHOLOGY can be rationally eſtabliſhed as a more probable and leading principle, than that of any of the former ſyſtems of medicine, as founded either on the ſuppoſed chemical changes of the circulating fluids, or the influence of the ſenſorium and nervous ſyſtem? The few following circumſtances appear to me to afford juſt argument for the preference and ſupport of SUCH A PATHOLOGY, as governing vaſcular and ſympathetic affections.

Let

* At page 1 of the introduction.

Let it be remembered, that the diſeaſes to which the natural conſtitution of man is inherently entitled, and with which, at ſome time or other, it has to contend, and ſeldom eſcapes, from ſome eſtabliſhed law in the animal œconomy, are of the exanthematous, or eruptive, kind. Moreover, they are diſeaſes, to which mankind are not, generally ſpeaking, a ſecond time ſubject; are alſo particularly connected with, and influenced by, the atmoſpheric air; and therefore particularly affect the ſyſtem of capillary veſſels. Such are the SMALL POX;—CHICKEN POX;—MEASLES;—MILIARY, and SCARLET FEVERS, &c. of DR. CULLEN's order, EXANTHEMATA, which he has thus characterized:

"Morbi contagioſi, ſemel tantum in de-
"curſu vitæ aliquem afficientes; cum
"febre incipientes; definito tempore
"apparent phlogoſes, ſæpe plures,
"exiguæ per cutem ſparſæ."

ORD: III. OF CL: PYREXIÆ.

Even the PERTUSSIS, which afflicts mankind but once in the courſe of life, may

may be conſidered as a diſeaſe of the pulmonic capillary veſſels, and even of an external ſurface of the body, from their being ſimilarly connected with the atmospherical air.

No part of the human body, but the external ſurface, is inſtinctively ſecured againſt the return of any ſpecific genus of diſeaſe, after the conſtitution has once contended with it. All internal affections of the viſceral organs, and even of the brain itſelf, from being unconnected with the atmoſphere, may be occaſionally repeated by the irregularities of our mode of living; and are idiopathic local diſeaſes, with which the whole capillary ſyſtem may, by ſome degree of pyrexia, ſympathiſe.

Theſe ſingularly eſtabliſhed pathological phænomena, connected with the circulation of all the external capillary veſſels, as well as with their ſympathy with internal diſeaſes, give a decided SUPERIORITY OF CONSEQUENCE to thoſe important minute parts of our animal machine, over the hitherto leading doctrines of the influence of the

SENSO-

SENSORIUM and NERVOUS SYSTEM, in the production of moſt pyrexial diſeaſes; and which ſuperiority is ſtrengthened and confirmed by its being an indubitable fact, that THE LATTER are not expoſed by nature to any ſpecific diſeaſes, but what may repeatedly afflict us through life, from perhaps our own indiſcretions, when we except the CHOREA, as truly involuntary, at an early part of life, and the PERTUSSIS, in DR. CULLEN's claſs NEUROSES, if the laſt diſeaſe can be conſidered as properly a nervous and chronic affection. Theſe leading, and characteriſtically diſtinct, features of the vaſcular and nervous diſeaſes, muſt be brought about by ſome fixed principle in the government of the *autocrateia*, and by the will of a SUPREME BEING.

An *arterio-muſcular irritability*, as the ſtriking feature of health and diſeaſe in the animal body, will account for an opinion, of late advanced in phyſiology, and which there have not been wanting inſtances to ſupport; viz: that the human conſtitution cannot conduct or manage two ſpecific diſeaſes at one and the ſame time. Thus the eruptions

eruptions of the ſmall pox and meaſles cannot happen together, though the habit may have received the contagion of each, nearly at the ſame time; but the one moſt forward in the ſyſtem will proceed to its completion, and for a while delay the appearance of the other. In like manner have the meaſles and the ſcarlatina been known to interfere with one another.

Theſe occurrences ſerve to point out to us the weight and importance of the capillary circulation, in the progreſs of our diſeaſes, as well as in the government of our health; and will, I think, inſenſibly lead us to a very different view of the whole animal œconomy, than is entertained and inculcated by the phyſiologiſts and pathologiſts of the preſent day.

I ſhall now proceed to my obſervations, *firſt*, on the means of counteracting the effects of a ſea-faring diet.

Dr. TROTTER ſeems *at the laſt* to admit, that the injurious quality of the ſea

ſea diet renders it an object to increaſe the vegetable part of it, and to afford it, as much as circumſtances will permit, in the recent ſtate.

The means at preſent of preventing the ſcurvy on board the BRITISH NAVY reſt on the proper ſupply of ſour krout, elixir of vitriol, infuſion of malt, and eſſence of wort. On each of theſe DR. TROTTER has made a few obſervations.

Sour krout is yellow cabbage cut in the month of NOVEMBER, and preſerved with ſalt, well preſſed together, in caſks. When uſed it is commonly waſhed, yet it has been ſometimes uſed unwaſhed; but without being waſhed, it is very disagreeable in flavour, and extremely putrid. DR. TROTTER is of opinion, "that its "virtues, as an antiſcorbutic, both from "reaſoning and experience, are very tri-"fling, and not worth the expence "which it has coſt government." How ſhould it be otherwiſe, if it is uſed putrid?

The *elixir of vitriol* is alſo not well ſpoken of. DR. TROTTER aſſigns the following reaſon for its inutility. "The "ſulphur," ſays he, "which is the baſe "of this acid, has ſo ſtrong an attrac- "tion for the oxygene, that it is inca- "pable of being acted upon, by the "powers of digeſtion and aſſimilation, "or converted into animal fluids; hence "it paſſes, unchanged, through the body, "without exerting any effects on the "blood."

I believe the principle of this explanation is good; and this prophylactic, therefore, fails of anſwering at ſea, becauſe the primary cauſe of ſea-ſcurvy is ſeated principally in the inteſtinal canal, where the noxious ſtate is firſt and chiefly to be corrected. When ſcorbutic appearances depend, principally, on a general debility, impairing the healthful action of the capillary veſſels, I have always found vitriolic remedies of uſe, even abſorbed from the primæ viæ, becauſe they remain unchanged, when thus carried

carried to the cutaneous ſurface, and then act by tonic powers.

The *infuſion of malt*, and the *eſſence of wort* were introduced, as anti-ſcorbutics on board his majeſty's ſhips, on the principle of their ſupplying fixed air to the blood, from its having been ſuppoſed, that the abſence of it cauſed the putrefaction of animal fluids. Their utility is very ſtrongly queſtioned by DR. TROTTER, though they have been, from ſome trials, favourably recommended, and, therefore, at the preſent day they form a part of naval victualling.

In my opinion, if they have been found of ſervice, their antiſcorbutic effects muſt have been brought about by ſome ſpecific operation on the putrefactive fermentation of the marine alimentary ingeſta, and not by adding, but by, in ſome manner, preventing the addition of *fixed air* to the circulating blood, and that probably from the action of the VITAL AIR, in their compoſition, on the redundant PHLOGISTON of the PRIMÆ VIÆ.

I am, therefore, much inclined to believe, that their *fancied* good effects may have been occaſioned by ITS ſtimulant qualities on the inteſtinal capillary veſſels, either in its own *pure* form, or in the form of fixed air; for a particular modification of the fermenting chemical proceſs, from a mixture of theſe various principles *within* the human body, moſt likely takes place, and differs probably from any imitation of the digeſtive and aſſimilating proceſſes, which human ingenuity may have contrived, in inanimate veſſels *without* the body, and under the influence of the atmoſpherical air.

But from among all the preventatives of ſcurvy, no one, in my opinion, can ſtand in competition with the prophylactic utility of PURE WATER. Its great proportion of dephlogiſticated, or vital, air, ſerves to guard againſt a redundant quantity of alimentary *phlogiſton*, while, as a ſolvent, it is well ſuited to carry off, by the emunctories of the body, the marine ſalt of the ſea-faring proviſions. On the contrary, when PUTRID, it poſ-

ſeſſes

ſeſſes all the baneful qualities of *putrid animal matter*: on which account DR. TROTTER has obſerved, "that *putrid* "*water* has been always reckoned among "the cauſes of that diſeaſe," the proximate cauſe of which he has conſidered, as ſolely occaſioned by a deficiency of RECENT VEGETABLES.

The marine improvements, for the preſervation and acquiſition of PURE WATER at ſea, are very conſiderable indeed; and there is no one diſcovery of greater weight and importance, than that of PUTRID WATER being again rendered ſweet, by agitation, and expoſure to the atmoſpheric air. Surely THIS FACT will ſupport, by analogy, the opinion, that the fluids of the living human body may equally tend to the putreſcent ſtate, from the want of due atmoſpheric ventilation, and corporeal exerciſe: but they are ſoon clearly rendered ſo, by the compulſive uſe of an improper animal diet, under the evident diſadvantages of ſuch a temporary exiſtence, by its rapidly increaſing the

the *phlogiſtic ſtate* of the ſyſtem, and the diminution of the VITAL POWERS.

DR. TROTTER has followed his obſervations on the prophylactic part of a ſea *regimen*, with ſome remarks on the proviſions in general, and has propoſed ſome alterations. No one can, for a certainty, read this part of DR. TROTTER'S work, without being ſtrongly convinced, notwithſtanding he has well ſupported his own particular opinion, reſpecting the effects of a *deficiency of recent vegetable matter*, but that it had appeared evident to him, that a diet of ſalted proviſions, and therefore, in a greater or leſſer degree, tending to the putreſcent ſtate, was the principal exciting cauſe of ſcurvy. He therefore is an advocate for a greater quantity of vegetables in the ſoups, even made of freſh beef, as the beſt means to recruit a ſickly crew: and ſays, "That it is to be much wiſhed, "that the practice was general, to dimi-"niſh the allowance of ſalted meat, and "increaſe the other articles of diet." He highly recommends the introduction of *cocoa* and *ſugar* for breakfaſt, in the room

room of *oatmeal*, *butter*, and *cheese*, three articles, which, he says, are very liable to spoil in hot countries.

A *stronger beer* than is commonly used, has also been recommended, from political as well as salutary motives, as preferable to *porter*, of which last DR. BLANE has given full evidence, that it possesses antiscorbutic qualities. Diluted *spirits*, as grog, are said to be an unsalutary marine substitute for *wine* or *beer*, as having a tendency to exhaust and debilitate the constitution. As correctors of the salted provisions, and the best condiment for animal food, TROTTER recommends the common pickles of *red cabbages*, *cucumbers*, *kidney beans*, *onions*, &c. as far preferable to the stinking preparation of *yellow cabbage*, at present in use. It is further observed, that SAILORS recovering from fevers, or other diseases, ought not to live on the *common fare* of a ship, till tolerably recruited by the ordinary means, suited to the convalescent state.

The next observations particularly respect the cure of the disease.

DR.

DR. TROTTER's experience, as well as the opinions of authors on the ſubject, have taught him to believe, " that freſh " eſculent vegetables, of all kinds, will " cure ſea-ſcurvy;" and moſt effectually the citric claſs of fruit, as abounding with an acid. It is intereſting to obſerve, " that the unripe gooſeberry, from hav- " ing the citric and oxalic acids combined " in its juice, has been found equally as " effectual as the lemon." And it has been further obſerved, " that apples, juſt " before they are ripe, have been ſuffi- " ciently proved to be very valuable " antiſcorbutics."

A ſpare allowance of ſhip proviſions, joined to cold and moiſture, were the remote and exciting cauſes of the ſcurvy among the *Iriſh convicts*, as related by DR. TROTTER, and his treatment of them, by the free uſe of lemons and oranges, in proportion to the virulence of each caſe, had the happieſt effects in reſtoring them, in a ſhort time, to a free uſe of their limbs; and to the full enjoyment of their perfect health and ſpirits.——

Theſe

Theſe circumſtances ſtrongly prove to me, that the citric acid cures, by firſt deſtroying, chemically, the principle of inflammability in the ſcorbutic habit, and in then reſtoring the due quantity of animal heat, for the promotion of the circulation, and all the moving powers of the ſyſtem.

It has been ſuppoſed, that the rigidity of the muſcles of the limbs, in extreme caſes of ſcurvy, was occaſioned by coagulated blood, effuſed into their interſtices, and into the cells of the *membrana celluſoſa*.

Dr. TROTTER accounts for theſe ſymptoms thus: " Theſe conditions of the " muſcular fibre are, certainly, much better " explained from the diminiſhed nervous " energy: it is this torpor of the *vis vitæ*, " which produces the *hebetudo animi*, and " renders the mind, as well as the body, " ſo little diſpoſed to be affected by the " uſual ſtimuli; and is a ſtate of the

" nervous influence, more peculiar to
" ſcurvy, than to any other diſeaſe."

I ſhall here throw it out as my opinion, that the above phænomena prove, that the tone and energy of muſcular fibre depend on animal heat, or a due proportion of the vital air in the ſyſtem, by which it is generated. This is rendered the more probable, as, from recent diſcoveries, by ſome new experiments on frogs, it has been made to appear, that the *nervous influence* may depend on an *electric principle*; and ſurely *this laſt* muſt have a natural connexion with *vital air*, and the *abſolute fire* of the atmoſphere, and with the univerſal corporeal proceſs generating ANIMAL HEAT.

It appears to have been ſome time a *deſideratum* in long ſea voyages, to preſerve well the citric acid. An extract of it has not anſwered. It has been found a much better way to cork it up, freſh ſqueezed, and not ſtrained, in bottles; but DR. TROTTER recommends the fruit

to

to be preſerved in tight caſks, and ſays, "that this method will anſwer for the "longeſt cruiſe, and is the ſureſt way "of ſecuring the virtues of the citric "acid." A method is taken notice of by DR. TROTTER, of concentrating it by congelation, by which it is reduced to about one eighth part of its original bulk. It does not appear to have been yet tried at ſea, but he is of opinion, that ſuch a preparation merits the patronage of the national government.

Lemon juice has been applied ſucceſsfully to the ſcorbutic ulcer, in the form of poultice. DR. TROTTER ſeems to ſpeak lightly of this practice, but ſtill admits, that it may have done good, becauſe he has witneſſed ſuch rapid effects from it, in ſuch affections, when taken internally.

From the deſcription, and directions, given by DR. TROTTER, in reſpect to the return of a ſhip to port, with a number of ſcorbutics, it no way aſtoniſhes me,

that ſuch numbers, on ſome occaſions, ſhould periſh by this loathſome diſeaſe. If the reader will turn to page 227 of his laſt work, he will find, that the circumſtances attending the arrival of the BERWICK in ENGLAND, after the hurricane in OCTOBER 1780, will ſufficiently prove to him, that the ravages of the diſeaſe, on board a ſhip, muſt be very much occaſioned by the confinement of the ſeamen, and by the want of a free atmoſpheric ventilation. As a proof of this, DR. TROTTER adviſes, " that theſe unfortunate " men be recruited on board, by refreſh- " ments from ſhore," before they are moved, " that they may be ſent to an " hoſpital *without danger of expiring*, *when* " *they come to feel the* EXTERNAL AIR." Surely this is good evidence of the principle, on which I have wiſhed to eſtabliſh the pathology, and proximate cauſe, of the diſeaſe.

In relating the diſtreſs of the BERWICK, DR. TROTTER has mentioned a *curious* circumſtance. During the hurricane the

crew

crew were very healthy; SHE had then only two ſick on board; one of them a ſailor, who had been tapped ſome time before for the dropſy; and the other the captain's ſervant, confined with the flux. Soon after the hurricane, from the fatigue, &c. which the men underwent, the flux and ſcurvy made their appearance among the crew. The above ſailor who was emaciated almoſt to ſkin and bones, though ſleeping among the reſt of the ſick, yet eſcaped both diſeaſes, and recovered perfect health afterwards at the hoſpital. This fact proves, either that the diſeaſe *ſcurvy* is owing to a ſpecific ſtate and condition of the ſyſtem, connected with the aerial and corporeal generation of abſolute heat and phlogiſton, or that the human conſtitution cannot labour under two different ſpecific diſorders, at one and the ſame time.

DR. TROTTER has made ſome obſervations on EXTRACTS from DR. BACKERACHT'S *practical diſſertation on the ſcurvy, for the uſe of the ſurgeons in the Ruſſian army*

*army and navy.** THEY only afford further proof to me, that the diſeaſe prevails in all countries, from the ſame general prediſpoſing and occaſional cauſes; and that there is but one PROXIMATE CAUSE for it, in every marine and in-land ſituation in the world, principally excited by the bad condition of ſome one part of the proviſions.

The effect of an *earth bath*, in the cure of the diſeaſe, and the relief afforded to the ſailors in ADMIRAL HOWE'S fleet, by the cuſtom of *burying their limbs* in warm ſand on the ſhore, have certainly a connection with the pathology and proximate cauſe, which I have been endeavouring to eſtabliſh.

DR. TROTTER'S concluding obſervations on the ſcurvy, as occurring on board the ſhips in the SLAVE TRADE, and the means he has propoſed for preventing it, by attention to *air*, *exerciſe*, and *diet*, &c. further

* REVAL, 1787.

ther ſupports my opinion of the noxious tendency of being at any time deprived of *corporeal exertions*, and free *reſpiratory ventilation*, in the open atmoſphere; and that *recent vegetables* do good only on a *therapeutic principle*, by counteracting the baneful effects of *inactivity* and *confinement*, particularly when ſo many of our fellow creatures are *cloſely* immured together, for any length of time, in the ſame place.

He has had reaſon to remark, that the ſmaller the *ſlave ſhip* on the GUINEA COAST is, the better for the owner, becauſe it ſets ſail the ſooner; and thoſe unfortunate human objects of private traffic are thereby "leſs endangered in "their health, from confinement in the "ſhip, or lying along the coaſt." No wonder that ſuch a human revolution in the extreme, namely, from free liberty in the open air, to ſlavery and impriſonment on board of ſhip, ſhould be attended with the depreſſing influence of mental affliction, and be rapidly followed by corporeal diſeaſe.

Let

Let all the circumſtances, preceding and accompanying the ſlave and ſeaman's miſerable and unhealthy lot, be well weighed, as connected with the various functions of the animal œconomy, and I am certain, that the reflecting and feeling mind will be too bitterly, and too clearly, convinced, that the ordinary, occaſional, and exciting cauſes of ſea-ſcurvy are ſufficiently well known, yet not enough guarded againſt; that their *modus operandi* is eaſily explained; and that the *deficiency of recent vegetable matter* is no more than the wanting a ſufficient ſupply of *the beſt means* for its prevention and cure, *which* have only a temporary, or palliative, effect, if the remote cauſes to any degree continue to act.

As DR. TROTTER ſtill continues to be SURGEON on board his majeſty's ſhip, THE DUKE, I think we have reaſon to expect ſome further intereſting obſervations on this ſubject; from the advantages of his ſyſtematic education. I hope he will be inclined to think it worth his while

while, to make trial of the prophylactic and curative effects of the OAK BARK, which will be recommended as a *marine antiſcorbutic* in the next ſection. No man can be better prepared for judging of its effects, from his having paid ſuch particular attention to the *phænomena* of *ſea-ſcurvy*, as connected with PNEUMATIC CHEMISTRY.

SECTION VI.

THE CORTEX QUERCUS, OR OAK BARK, IS RECOMMENDED AS POSSESSING PROPERTIES, WHICH MAY RENDER IT A MORE USEFUL MARINE-ANTISCORBUTIC, THAN ANY AT PRESENT MADE USE OF IN THE BRITISH NAVY.

FEELING, myſelf, very much, the importance of diſcovering the true nature and origin of ſea ſcurvy, in as far as it may lead to a more perfect knowledge of many of the impetiginous diſeaſes, which afflict mankind ſo univerſally, I have inſenſibly fallen into the error of being, perhaps, unneceſſarily full on the ſubject, as I have certainly gone a much greater length, than at the firſt I had any intention, or inclination, to do. But as it has further led me to propoſe a new naval

naval antiſcorbutic, I hope the candid reader will have the goodneſs, without cenſuring me, to go through the following ſhort ſection, as the ſummary, and I hope not altogether uſeleſs conſequence, of the preceding reflections. It appears to me an intereſting object for future inveſtigation and experiment, and I ſeriouſly recommend it to the notice of the navy-ſurgeon.

I have been gradually led on in my enquiry into the preſent ſtate of this part of naval practice, and have taken advantage of the many facts, which have been collected by the perſevering induſtry of DR. TROTTER, and other writers, on the ſubject, with the view of offering "that "aſſiſtance from medicine," to the relief and cure of ſea-ſcurvy, "which has "only hitherto been *effectually* found from "recent vegetable matter." To this I have all along had an eye, in my full inveſtigation of the diſorder.

It appears by the practical obſervations of OUR LATEST WRITER on the ſubject, and of one too, who ſeems to have had

very extenſive opportunities, for ſome years paſt, of making them, that the ordinary means of prevention on board the BRITISH NAVY are more or leſs objectionable. *Sour krout*, the *elixir of vitriol*, the *infuſion of malt*, and the *eſſence of wort*, have each their particular imperfections. The *water* alſo is too often what it ought not to be, to wit, *bad*; and the ſeaman's *proviſions* muſt probably ever remain what they are. *Wine*, as was before obſerved, will not prevent this ſingular diſeaſe, much leſs remove it; and "the celebrated *peruvian bark*, given to "the utmoſt extent, has never been known "to check it progreſs, or cure it."

Under the preceding naval difficulties, and deficiencies, in the medical department of ſea-practice, I have to hope, that any propoſal, which carries with it a reaſonable appearance of promiſing to diſcover an uſeful marine antiſcorbutic, will at leaſt be thought praiſe worthy, and call upon the attention of thoſe practitioners, ſo immediately concerned in its ſucceſs.

I therefore

I therefore propoſe to the lords of the admiralty of the BRITISH dominions, that the *cortex quercûs*, or OAK BARK, be allowed to have a fair trial, as an antiſcorbutic, under the ſkillful and experienced direction of its naval practitioners. I have juſt reaſon to think, that it will be an advantageous ſubſtitute for the hitherto tried articles of the MATERIA MEDICA, which ſeem not to have anſwered, to wit, the ELIXIR OF VITRIOL and the PERUVIAN BARK.

I have been long well acquainted with its medical virtues, in the treatment of numerous cutaneous diſeaſes, which I have had much reaſon to conſider as *terreſtrial* modifications of the ſea-ſcurvy, and have alſo very generally made uſe of it ſucceſsfully, as an aſtringent antiſeptic, in low fevers, and thoſe tending, from long continuance, to a putreſcent change: and I have thought that its good effects were to be attributed to a property it poſſeſſed, of counteracting and deſtroying the tendency, and exiſtence, of a præternatural degree of the phlogiſticated ſtate of the ſyſtem.

It

It may be thought neceſſary, that I ſhould refer to ſome authorities, for the opinion I entertain of its medical principles and virtues; I hope, that the reader will reſt ſatisfied, on the preſent occaſion, with three, ſo as to induce him, if in naval practice, to ſecond me in my wiſh, that it meet with the trial, as above recommended.

The OAK, from its antiquity, as well as its celebrity and public utility, in various concerns of life, claims our reſpect and attention. Many of its ancient virtues and qualities have been recorded by IO: DU CHOUL, G. F. in a tract in my poſſeſſion, entitled, "*De varia quercus* "*hiſtoria. Acceſſit pylati montis deſcriptio.*"* From its wonderful amplitude and growth, this writer has obſerved, that the ancients drew a compariſon between it, and the violent ſymptoms of an intermittent, "unde "febrem frigidam cum tremore querqueram "nominabant:" and quotes LUCILLIUS,

"*Querquera*

* Sm: oct: Lugduni impr: 1555.

" *Querquera consequitur febris capitisque*
" *dolores.*"

This ancient writer has not entirely overlooked its medical properties, having said, " Quercus partes omnes adstringentis qua-
" litatis participes sunt. *Querneus carbo cum*
" *melle tritus carbunculum genus morbi sanat.*
" Cinerem quercus nitrosum esse satis
" constat." Such observations are applicable to *scorbutus*, as an impetiginous disease.

It will, however, be probably more satisfactory to my reader, to know the opinion of a modern writer.

Dr. CULLEN has said of the OAK BARK, " that it is considered as the most pow-
" erful of the vegetable astringents; and
" its universal use and preference in the
" tanning of leather renders the opinion
" very probable. Accordingly it has been
" much employed as an astringent me-
" dicine, and commended for every virtue,
" that has been ascribed to astringents,
" either

" either internally, or externally, em-
" ployed."*

Dr. CULLEN uſed the decoction of it as an aſtringent gargle, and ſpeaks very favourably of it. I can myſelf ſay, that I have had great experience of it, in various diſeaſes of the mouth and fauces, accompanied ſometimes with fever, and ſometimes not; and have found it a very uſeful medicine, on all occaſions, when I could not have uſed the PERUVIAN bark without injury to the conſtitution. It would, therefore, well ſupply the place of the marine gargle of the elixir of vitriol, which has been called " a *mere placebo*."

Dr. CULLEN has further obſerved, " that he employed oak bark in powder, " giving it to the quantity of half a " drachm every two or three hours du- " ring the intermiſſions of a fever; and " both by itſelf, and joined with camo- " mile flowers, has prevented the return " of the paroxyſms of intermittents," and

* TREATISE OF THE MATERIA MEDICA, 1789.

and concludes with ſaying, " that all its " virtues, in a conſiderable degree, are " found to belong to the *cupulæ* or ſcaly " cups, which embrace the bottom of " the acorns."* Perhaps the preſervation of *leather*, from the proceſs of tanning, may as much depend upon its *antiſeptic*, as its aſtringent, qualities. DR. CULLEN has not in the moſt diſtant way hinted at its having any antiſeptic properties: and has alſo ſpoken of its *gallæ*, as ſolely aſtringent.

This medicine may ſurely, as above ſpoken of by DR. CULLEN, be fairly entitled to the propoſed trial, as a ſubſtitute for the PERUVIAN bark at ſea: but as it further appears to me to poſſeſs properties peculiar to itſelf, without the injurious qualities of the other, I flatter myſelf, that it will meet with its due attention. This will appear more evident by the next obſervation, on the authority of the BISHOP OF LLANDAFF.

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* TREATISE OF THE MATERIA MEDICA, 1789.

It has been proved by experiments, "that the *fixed* matters in wood are com- "bined with a large proportion of vola- "tile principles, consisting chiefly of pure, "or of fixed, air and water." Such volatile parts in the wood of the oak bear a very singular *superiority of proportion* over its other *fixed* parts; so much so as to have claimed the notice of DR. CRAWFORD, to prove a proposition in his pneumatic doctrine. He has the following passage in his essay on animal heat and combustion.

"Thus it appears, from the experi- "ments of the learned and ingenious "BISHOP OF LLANDAFF, that pit-coal "contains one third of its weight of "aerial and liquid matters, which may "be separated by distillation; that *dry* "*heart of oak* and sallow (*i. e.* willow) "lose *more than two thirds* of their weight "in the same process; and that, from 106 "POUNDS avoirdupoise weight *of dry peeled* "*oak, only* 19 OUNCES *of ashes* were ob- "tained. It is probable, that a much "smaller quantity would be produced by "the

" the combuſtion of an equal weight of
" green oak."*

The great VOLATILITY of the OAK BARK being thus proved by the obſervations of one of the firſt chemical philoſophers of the preſent day, accounts to me for the great utility of it, as an ASTRINGENT, TONIC, and ANTISEPTIC; as I imagine, that it is capable of imparting to the human body a greater proportion of the *pure aerial*, or *viviſying*, *principle*, than any other known article of the *materia medica*, hitherto employed as an antiſcorbutic; and, from ſoon finding it poſſeſſed of theſe properties, I have for ſome years paſt very generally uſed it myſelf in impetiginous, and ſlightly febrile, affections; and now venture *warmly* to recommend it to the notice of the NAVY SURGEON, as promiſing to become alſo a very uſeful MARINE ANTISCORBUTIC. Its cheapneſs will certainly be an additional recommendation of it, where expence ought reaſonably to be avoided.

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With respect to the best mode of administering it at sea, I can say but little to a naval practitioner, having never been myself acquainted with the conveniencies, or inconveniencies, of such a situation. A strong decoction, particularly with dried orange peel, is not an unpleasant *formula*; perhaps the dried lemon peel on board of ship would be preferred. I have generally made use of the following preparation of it in private practice, in various composition with other medicines, according to the particular circumstances of the case, and the constitutional temperament of the patient.

℞ corticis quercûs pulv: crass. ℥iss
——————— aurant: sic: ʒij
Contunde simul paulo tempore, et adde aquæ ebullientis ℔iv.
Dein leni igne coque ad ℥xx et cola.
Cochlearia quatuor ampla dose, bis, ter, quaterve, de die, pro re nata.

I have sometimes added a drachm of the *winter's bark*, with the sole view of rendering the decoction more gratefully aromatic.

aromatic. For the difference between the *cortex winteranus*, and *canella alba*, I ſhall refer the reader to CULLEN'S MATERIA MEDICA, and the LONDON MED: OBS: Though it has been ſpoken of as a preſervative againſt the ſcurvy, I have had no reaſon to think, that it has added in the leaſt to the antiſcorbutic virtues of the above decoction.

I have alſo experienced a decoction of it with *liquorice root*, and ſometimes with *orange peel*, very ſerviceable in *infantile diſeaſes* of various kinds, particularly in their *ſtrumous* and *glandular diſeaſes*, accompanied with the febrile irritability; joining with the decoction the occaſional uſe of *calomel* aperients, and an attention to regimen and diet.

It may be found moſt convenient at ſea to make trial of it in powder: but as it has been troubleſome and difficult, to reduce it to a very fine one, I have not much uſed it in that form; eſpecially as I think its properties are more likely to be found medicinally uſeful in the form

of

of a decoction. If I had naval opportunities, I ſhould try it in many different ways, both as a prophylactic, and a therapeutic, medicine; but the beſt method will moſt likely occur to the NAVAL PRACTITIONER.

I have never read, or heard, of an *extract* of the oak bark having been prepared; in my opinion it would be trifling, and not contain the principle on which the beneficial effects of the wood depend.

CON-

CONCLUDING SECTION.

CONTAINING THE BREVIARY OF THOSE OBJECTS, TO WHICH THE AUTHOR PROPOSES GIVING HIS ATTENTION, WITH A VIEW TO ANOTHER WORK, RECOMMENDING THE CLASSIFICATION AND FORMULÆ FOR A NEW IMPETIGINOUS PRACTICE, UNDER THE PARTICULAR HEAD OF

DERMATO-THERAPEIA.

NOTWITHSTANDING that I am moſt readily inclined to admit, that all I have hitherto advanced, forms but an imperfect BODY OF PHYSIC, when all the numerous claſſes of diſeaſes are comprehended in the phyſician's view of the known phyſiology and pathology of the ANIMAL MACHINE, yet I cannot but think, that there is already as much discovered and promulgated, on the ſubject of

animal

animal heat, with the view of inveſtigating the particular proceſs of it in the HUMAN ŒCONOMY, as will ſtir up an enquiry into the probable influence it may have upon many various, if not all the, diſeaſed ſtates of the ſyſtem; but in a particular manner, if *my opinion* of its originating from a ſuppoſed chemical proceſs on the outward ſurface of the human body, by *inſenſible perſpiration*, as well as on the ſurface of the lungs, as DR. CRAWFORD has ſuppoſed, by RESPIRATION, be well founded; it at leaſt merits further inveſtigation, from the cutaneous organ being conſtantly expoſed to the action of the atmoſpherical air.

1. With the hope to explain many other phænomena both of health and diſeaſe, in the animal œconomy, I ſhall probably proſecute ſuch inveſtigation, when I come more particularly to conſider the MATERIÆ MEDENDI of all cutaneous diſeaſes. With this view I ſhall fully enquire into the comparative anatomy and phyſiology of the vegetable kingdom, which may further account, why a vegetable diet may on many

many occaſions become ſalutary, and heal our diſeaſes, by its regulating and controuling the chemical proceſs obtaining animal heat, in as far as it may, in ſome ſituations on land, be connected with our aliment.

2. It will be alſo worth while more particularly to enquire into the nature of FEVER, with the object of aſcertaining, whether the diſturbed and deranged proceſs obtaining animal heat may not be the ſource of fevers of every kind, according to the action of the remote cauſe, and the nature of the conſtitutional temperament, and perhaps explain better than has been hitherto done, the phænomena of the cold, hot, and ſweating ſtages of an intermittent.

3. The better to ſupport the opinion of a cutaneous generation of animal heat, I think there is an opening to draw an analogy between the papillæ pyramidales of the cutis vera, and the cells or cellular ſurface of the pulmonary organs.

As I may not, however, find leiſure ſufficient to do juſtice to the three preceding objects, and have not any immediate intention of doing ſo, they may in the mean time be thought matters worthy of enquiry by others, more competent to experiment and inveſtigation than myſelf, and I, therefore, would willingly reſign them to any one who would undertake to inveſtigate them. I ſhall probably find a few occaſional hours ſufficiently employed with the following, at preſent with me, more intereſting objects.

4. In proceeding with my pathological enquiry, with the view to the laying a firm foundation for the internal treatment of cutaneous diſeaſes, as always having more or leſs of a connection with the primæ viæ and ſyſtem, I ſhall think it a material introductory conſideration, to point out the different temperaments and conſtitutions, at the different periods of life, as being directly concerned with many ſpecies of them, and with probably the proceſs of obtaining and regulating the animal heat. I think this object will further lead us to an

an enquiry of much conſequence, to wit, the eſtabliſhing juſt diagnoſtics between idiopathic and ſymptomatic affections of the ſkin, in as far as it becomes often a very deſirable thing to know, when topical applications may be applied to ſome of them, with ſafety, and ſucceſs.

5. The better alſo to underſtand, how cutaneous diſeaſes are to be more ſafely and certainly cured by internal remedies, from their being connected either with the conſtitution at large, or with only the ſympathetic irritability and connection between the internal and external extreme veſſels of the circulating, as well as the abſorbent, ſyſtem, I ſhall carefully gather together the ſcattered opinions of late authors, on the ſpecific action of medicines on the ſtomach and inteſtinal canal, and venture ſome few obſervations on them. This enquiry ſeems to me important, in as far as it will the better enable us to ſelect and adapt our medicines to the cure of impetiginous diſeaſes, as connected either with a general debility, or only a ſymptomatic ſenſibility of the ſyſtem.

6. As alſo further connected with the medical, as well as chirurgical, treatment of cutaneous diſeaſes, from my having already endeavoured to make it appear, that the irritability of capillary veſſels depends upon their great proportion of muſcular energy and excitement, I ſhall put together, in as brief a way as I can, the beſt opinions hitherto promulgated on the doctrine of muſcular motion, or the action of the moving fibre, which will include the late diſcovery, from experiments on frogs, which ſeems to confirm an opinion often entertained, that the principle of muſcular action depends upon the electric fluid.

7. After having taken up theſe different ſubjects in phyſiology, as introductory to the object of a DERMATO-THERAPEIA, I ſhall make an attempt at an improved noſological arrangement of cutaneous diſeaſes, on the principle of dividing them into TWO CLASSES, to wit, ONE, to contain all thoſe which have a conſtitutional connection with the temperament of the body, and a pyrexial ſtate; and A SECOND, to take

take in all thoſe, which have their foundation ſolely in a particular organization and action of the ſkin itſelf, produced either from external cauſes locally acting on, or irritating, it, or from the ſimple ſympathy, or balance of circulation, between the inteſtinal and cutaneous capillary veſſels.

Each claſs will be divided into its different genera, founded on the ſuppoſition, that the different parts of the cutis vera, as well as its various internal and external appendages, are each liable to their ſpecific diſeaſes, either locally or conſtitutionally occurring, independent of any original morbid ſtate of the fluids.

8. If the ſubject can be ſatisfactorily arranged, on ſome ſuch noſological principle, I ſhall then endeavour to apply the different points of the preceding impetiginous ſyſtem, as will beſt accord with, and ſeem ſupported by, the hiſtory and ſymptoms of each particular genus of diſeaſe; and I hope to be afterwards able conſiſtently to recommend a ſuitable and

ſucceſsful

ſucceſsful mode of practice, founded on the general pathology laid down in the preſent publication, and ſupported by a ſteady obſervation, and a large experience.

This will neceſſarily lead me to conſult fully the lateſt ſyſtematic, or noſological, writers, as well as others, who may have recently paid attention to the ſubject, though they all may have adhered to the BOERHAAVIAN doctrine of the humoral pathology; and I particularly expect to derive many intereſting facts and obſervations, from the learned work of that late and very copious author, ANN: CAROLUS LORRY, entitled, TRACTATUS DE MORBIS CUTANEIS, 4to. and publiſhed at PARIS, 1777. It is proper here to ſay, that I have not as yet received any aſſiſtance from it, not having thought it neceſſary to conſult it, during the compilation of the preſent work.

The intelligent reader will at once ſee, that I have here engaged to undertake a very difficult and extenſive taſk, for which

which I may never have ſufficient opportunity, either to proſecute, or to effect, with the neceſſary degree of ſatisfaction to my reader, or to myſelf.

He will, therefore, be ſo kind as to attribute it to theſe circumſtances conjointly, if I ſhould not be able to complete ſuch an undertaking in any reaſonable time; or in the time, that it is at preſent my wiſh to attempt it.

FINIS.

ADVERTISEMENT.

INTENDED to be prepared for preſs, A SERIOUS ADDRESS TO THE PUBLIC, on the importance of their knowing the nature and origin of the diſeaſes of the human ſkin, and of their diſtinguiſhing them by their different kinds, with the view to ſecure them againſt the evil conſequences of an improper treatment of themſelves.

POSTSCRIPT.

SINCE the preceding ſection was compleated at the preſs, a coincidence of circumſtances has given my mind a bias, to offer a few more practical reaſons for ſupporting the efficacy of the oak bark, with a view to general utility. I had been originally led to conſider, how far it would be uſeful in the ſea-ſcurvy, from my experience of it, as a prophylactic to the ſeptic tendency of the ſyſtem, in the low, or nervous, fever, for obſerving which, my opportunities have not been ſmall: and it is, I think, ſome juſtification of the propriety of my introducing here a few other remarks on it, connected with a putrid diſeaſe, that the ſcurvy and putrid fevers have been ſuppoſed ſo nearly related, in their leading corporeal phænomena, as to have induced DR. MILMAN, and others, to treat of them together, as admitting of

nearly the ſame pathological explanation, particularly as the diſeaſe in view is attended with exanthematous appearances.

My very recent ſucceſsful adhibition of this vegetable production, in the cynanche maligna, or ſcarlatina anginoſa, ſo convincingly imports to my mind the ſpecific virtues of it, as a medicine, as well as the leading principle to be counteracted in that diſeaſe, that I hope my reader will not think his time ill engaged, with a few obſervations on that fatal diſorder, and a ſhort hiſtory of two ſuch caſes; and as I think the end of this object will be thereby beſt attained, I ſhall make free to premiſe a few general remarks, from the lateſt writers on the ſubject.

Dr. cullen has reported the cynanche maligna to be, a very contagious and epidemic affection; and moſt generally prevailing among infants and young people; and alſo indiſcriminately attacking all conſtitutions. He has further ſaid, that it commences with conſiderable pyrexia, preceded by the uſual ſymptoms of its acceſſion

ceſſion, which continues until gangrenous appearances of the fauces take place, ſometimes to a conſiderable degree, when the ſymptoms of a putrid fever keep conſtantly increaſing; and ſo rapid have all its virulent and morbid effects been, on ſome occaſions, that many have died on the third day, but for the moſt part before the ſeventh.

The ſame important writer, in his account of the ſcarlet fever, has doubted, whether that diſeaſe be different from the cynanche maligna, from the latter having almoſt always the ſcarlet eruption, and the former almoſt always the ulcerous ſore throat. But ſo various are the opinions of authors on the ſubject, that many have been diſpoſed to think, that the ſcarlet fever was ſpecifically different from the cynanche maligna, from its having been not unfrequently ſeen unaccompanied with the ſore throat. CULLEN, however, has ſaid, that he almoſt always ſaw the diſeaſe attended with the ulcerous ſore throat, and as ſuch it has been named by SAUVAGES the ſcarlatina anginoſa; and though ſo often of

the putrid and gangrenous kind, and exactly ſimilar to the cynanche maligna, yet CULLEN has left it as his opinion, that not only the ſcarlatina of SYDENHAM, but the ſcarlatina anginoſa of SAUVAGES, are different diſeaſes from the cynanche maligna. For his particular reaſons for ſo thinking I ſhall refer the reader to his FIRST LINES OF THE PRACTICE OF PHYSIC.*

From my own obſervations, and reflections, on theſe diſeaſes, I feel my mind moſt diſpoſed to view them, as only different modifications of the ſame ſpecific contagion, neceſſarily varying in its degrees, and the ſymptoms it produces, not only from ſome difference in the epidemic conſtitution of the atmoſphere, giving riſe to it at different ſeaſons of the year, but, alſo, from the variety in the ages, and temperaments, of the different perſons attacked with it, on the ſame principle, that the ſmall-pox differs in its diſtinct and confluent ſorts.

In this view of the ſubject, may there not be, from one ſpecific miaſma, a febris ſcarlatina

* Vol. II. Page 190. Edit. 1784.

ſcarlatina benigna, or the ſcarlatina anginoſa of SAUVAGE, and a febris ſcarlatina virulenta, or the cynanche maligna of CULLEN? For it has been obſerved, that the ſcarlatina generally, at the commencement of its epidemic reign, approaches, in ſome caſes, very nearly to the ſymptoms of the incipient cynanche maligna; and their ſimilarity is ſo great, that CULLEN has laid down a general rule only, for the treatment of them, namely, to be guided by the appearance of each particular caſe; leaving it to the judgement of the practitioner to determine, whether it is, or will be, the febris ſcarlatina, or the cynanche maligna.

Our modern ſyſtematics practice in theſe caſes, in a few words, was, *Firſt*, That as the cynanche maligna always ſhewed the ſeptic tendency of the ſyſtem, bleeding and purging were generally improper, though inflammatory ſymptoms would ſometimes, at the firſt, appear conſiderable. He thought emetics, early in the diſeaſe, were of uſe; and he only recommended bliſters to moderate the violence of the ſymptoms. His great dependance was on

antiſeptic

antiſeptic gargles and injections, and internal antiſeptics; eſpecially the PERUVIAN bark in ſubſtance, from the firſt to the laſt.

Secondly,—On the ſcarlatina he ſpeaks ambiguouſly, in reſpect to the uſe of the PERUVIAN bark; and thinks it might often be entirely omitted, though it would not be prudent to do ſo; and he has further obſerved, that, in this diſeaſe, there is no anaſarcous ſwelling of the body, after the ſcarlet eruption has ſubſided.

A late experienced writer on the ſcarlatina anginoſa,* has recorded its great fatality among children in LONDON, in the year 1786, and has compared the eruption as very ſimilar to the meaſles, which ſeemed proved by the ſimiliarity giving riſe to great error, in the bills of mortality for that year: and he has entertained an opinion, that it has often deſtroyed adults, under the appearance of being no more than a common fever. For a very copious hiſtory of its ſymptoms, and variations,

* DR. JAMES SIMS.

riations, from the ſummer, through the autumn, to the winter ſeaſon, I muſt refer my reader to this learned author's very intereſting paper, in the firſt volume of the MEMOIRS OF THE MEDICAL SOCIETY OF LONDON. It there appears, that the diſeaſe varied much, and that anomalous caſes happened towards the cloſe of the year. In ſuch caſes cordials frequently failed, and bliſters ſeemed not to have even the ſlighteſt effect on the ſkin. The leading traits of DR. SIMS's practice were the following.

He depended on the tincture of roſes, with ſyrup of lemons, and ſome additional vitriolic acid, as internal antiſeptics, which he adviſed to be taken every hour, or hour and a half, and he recommended brandy with a little water, as the moſt uſefull gargle. He diſapproved of blood-letting, ſtrong purgatives, and ſudorifics; and adviſed the efflorescence to be promoted, by the moderate warmth of the room. He thought rhubarb, ſo as to produce one motion a day, the beſt preventative; and he appears to have been of opinion, that the

PERUVIAN

PERUVIAN bark was uſefull in the latter ſtages, but not in the beginning, of the diſeaſe.

Joined with the preceding opinions, and obſervations, of men of large experience, I ſhould hope, that the following caſes, and their treatment, will become the more intereſting to the reader, and both ſupport my opinion of the pathology of the affection, and of the modus operandi of the remedy, on which I *ſolely* depended, and which ſucceſsfully removed the complaint.

The effect, which the preceding ſhort account of the various ſymptoms, and treatment of theſe diſeaſes, by the above writers, has, on my mind, is, that they appear to concur in eſtabliſhing the diſorder, as ariſing from, and as ſupported by, a ſeptic cauſe; and that the deſtruction of this cauſe ſhould form the principal indication, both of prevention and cure.

The violence of the pyrexia, at the acceſſion and firſt ſtage of the complaint, which CULLEN has characterized as a ſy-

nocha

nocha contagiosa, though, strictly speaking, the synocha is not a contagious fever, only proves, in my humble opinion, the great alarm the system is put in, and the very powerfull exertions it feels called upon to make, with the view of overcoming, or expelling, the noxious miasma: and that the object of supporting the patient by cordials and tonics, as the first indication commonly laid down, is built upon a wrong principle; and the following it serves only to increase all the symptoms of pyrexia, at the same time, that it is badly calculated to counteract, and remove, the morbid disposition of the habit. With these sentiments I entered on the treatment of the following cases.

In the evening of the 27th of last *October*, I was sent for to the children of a perfumer, in PRINCES-STREET, SOHO; the son was seven years of age, and of the sanguineous temperament: and the nephew twelve, and of the florid and scrophulous temperament. The youngest had sickened on the 23d, and the eldest on the 24th, with the general symptoms of fever.

Mr. CAMPBELL, apothecary, in the ſame ſtreet, was firſt ſent for, on the morning of the 24th, to the youngeſt, for whom he directed an emetic, and a febrifuge aperient mixture; and in the evening he was called over to the eldeſt, who had appeared ailing ſeveral days, but then became ſuddenly and violently attacked with the acceſſion of the fever, attended with great dejection of ſpirits, pains of the limbs, much trembling of the knees, and a deadly paleneſs of the countenance; and he complained much of pain of the head and back. An emetic was directed to be taken immediately, and an aperient draught early in the morning.

October 25. The youngeſt was very feveriſh, with the efflorefcence appearing, and he complained of ſome ſoreneſs of throat, and ſome pain of the ſtomach. He repeated a gentle emetic in the evening, and took every three hours the mixt: camph: cum aq: ammon: acet: et pulv: cont: com: Both emetics were of ipecacuahna powder.

The fever of the eldeſt had much increaſed, the tongue had become dry, and the teeth much furred; yet the pulſe

was

was thready and very frequent. The medicines had operated well. In the evening, he was ſtill very feveriſh and fluſhed: a kind of delirium was noticed, marked by great perturbation, anxiety, and reſtleſsneſs; and the eruption was now firſt obſerved on him, accompanied with conſiderable tumefaction and inflammation of the fauces. He took at night a ſaline draught, with four grains of the *pulv: jacobi*—and repeated them in four hours.

October 26. The youngeſt continued very feveriſh—and he had become very reſtleſs. The efflorescence had increaſed, and the throat was worſe—but his hands bore not the marks of being particularly fluſhed, and his deglutition was not much affected: the mixture of yeſterday was repeated.

The eldeſt was growing ſenſibly worſe—and the mental irritation was increaſing. The dec: of the PERUVIAN bark was now ordered—and in the evening the aromatic confection was added to it, to be taken every two hours.

October 27. The youngeſt was much the ſame in the fever and efflorescence, but the throat was growing worſe. The de-

coction of the PERUVIAN bark, with a full dose of the tincture of the same, and some tincture of snake-root, was now ordered for him, every two hours.

All the symptoms of the eldest were increasing: the same mixture was continued for him: in the afternoon a blister was applied between the shoulders, and an enema administered. MR. CAMPBELL was of opinion, that there was now immediate danger.

Their drinks had been barley water, and barley water with lemon juice, the first two days, and afterwards very weak negus, strongly acidulated with lemon juice.

Oct: 27, h: 7, p: m. At this period I was called in. The situation of the youngest bore the marks of the inflammatory state of the system, with the fauces covered with large white sloughs, and the efflorescence was now principally observed on the lower extremities. His fever had increased, since beginning the PERUVIAN bark in the morning, and he appeared to me very restless. But the situation of the eldest claims our particular attention.

He

He was lying on a ſmall bed, in a confined corner of the uppermoſt room: his countenance expreſſed very great diſtreſs, and his cheeks were very deeply fluſhed, and edged by a line of a very dark hue, approaching nearly to black, in a very ſtrongly circumſcribed manner: the colour of them, and of his lips, was of the deepeſt crimſon hue. The white of the eyes had the ſanguineous bluſh, in a very evident degree, and they had a ſilly deadly glare with them, not properly expreſſing *delirium*, but that ſtate, which DR. SIMS has called *deſipientia*. Soon after being in the room, he raiſed himſelf on his knees with a tottering difficulty, and expreſſed great anxiety to evacuate the enema, which he had very lately received. The ſkin was cooled, and his pulſe was flurried and feeble. The hue of the efflorescence could be ſeen on the ſkin of the body, of a brownish red caſt; but round the knuckles, and elbows, were large purple coloured blotches. His reſpiration was natural. The teeth and tongue were very black and foul, and the mouth and fauces ſeemed loaded with ſo much of a mucous excretion, and ſo much obſtructed

obſtructed with it, that his utterance was very indiſtinct. I obtained a momentary ſight of the fauces, with great difficulty. They were covered with party-coloured ſloughs, the palatum molle was of a deep crimſon colour, and the roof of the mouth was nearly covered with the white apthous appearances.

All theſe ſymptoms, together with the progreſs of the complaint, led me to think, that the ſeptic ſtate was the object to be counteracted; and that it was only to be done by thoſe means, which would not, at the ſame time, increaſe the febrile irritation of the ſyſtem. On this principle I directed the following plan to be purſued. The following decoction was immediately prepared.

℞ Corticis Quercûs pulv: craſs ℥j
——— Winter: ʒj
——— Aurant: ſic: ʒiſs
Aquæ ebullientis ℔iſs
Coque ſimul leni igne ad ℥xv. et cola, ut fiat decoctum more ſequente utendum.

The

The eldeſt was ordered to take an ounce and a half of this compound decoction of the oak bark, with a drachm and a half of the ſuccus limon: rec: and two ſcruples of the ſyrupus papav: albi, every two hours. I forbad the negus, and directed for his common drink, the rennet whey, with a ſmall quantity of white wine added to it—He was alſo occaſionally to gargle with a tea ſpoon-full of the following, added to his barley water, or to put a little of it ſometimes into the mouth.

℞ mell: roſæ ℥j
Spir: ſal: mar: ʒj
M:
More ſupra-monito utend.

For the youngeſt I directed an ounce of the ſame oak decoction, with p: contray: comp. gr vij, nitri purif: gr v. vin: ant: gutt. v. et ſyr; papav: albi ʒſs, to be taken every two hours—He was only to gargle with plain barley water, and to drink the rennet whey without wine.

October 28, h. 9. a. m. They had taken their medicines very regularly. Mr. Campbell thought, that the eldeſt had much leſs of the mental irritation. The eyes were leſs

fluſhed

flushed—the cheeks were more florid—the hands and elbows not so dark coloured, but more of the crimson hue—the countenance more calm, and he seemed more composed—the pulse steady, but very frequent.—The youngest had much less of the febrile heat of the skin; and the efflorescence was going off, every where, with the usual desquammation. The fauces were still very troublesome to him. They were directed to continue the same medicines, and drinks, as ordered last night.

H. 8. *p. m.* The eldest was more restless than in the morning—and the mucous excretion of the fauces most distressing to him. The youngest was much the same. They took their medicines very regularly, and were ordered to continue them.

October 29. They had passed tolerably well through the night, with slight appearances of amendment in both. The cheeks of the eldest of nearly their natural appearance; but on his elbows, and knuckles, large vesications were forming, with the crimson hue changed into a florid redness. The youngest was less feverish. They were directed to continue the same medicines; the eldest as often as at first, but

but the youngeſt every three or four hours: and each was to receive an enema in the evening: I requeſted to be informed, if they grew worſe in the latter part of the day.

October 30, I did not hear from them laſt night, as MR. CAMPBELL thought them mending. This morning I found the eldeſt quite ſenſible, and he exerted himſelf very much in my preſence to gargle his throat: —the marine acid had been occaſionally uſed without barley water, ſo that it ſeemed to have excoriated his cheeks, and ſides of his tongue. There was no remains of the efflorescence, but on the legs: his pulſe was only 110 to-day, and regular. He had had no ſtool from the enema: I directed an aperient draught, and the mixture to be continued, with the addition of ʒſs of lemon juice to each doſe. The youngeſt was not ſo well this morning: he had a flurried pulſe, and his eyes were fluſhed, and he was inclined to coma and reſtleſsneſs—The clyſter had had a trifling effect. I ordered an opening draught to be taken directly; and he was, after its operation, to take the dec: cort: quer: comp: cum

ſucco limon: rec: et ſyr: papav: alb: in proportion to his age, every three hours.

October 31. The eldeſt continued to mend. The veſications on the hands and elbows diſcharged a ſero-purulent fluid—the cuticle peeled off largely—and all appearance of the efflorescence about them began to diſappear.—He continued ſenſible, with a leſs frequent pulſe than yeſterday.—The youngeſt was alſo much better;—the fluſh of the eyes was gone; and he was cheerfull. The mixtures, as ordered yeſterday, were to be continued.

November 1ſt. Both of them recovering. —They took the above decoction a few days, with a ſmaller quantity of lemon juice, and one day without it, and no other medicines. On the 5th inſtant the eldeſt was free of fever, but had ſtill a conſiderable ptyaliſm, with very troubleſome ſloughs, and excoriations, about the mouth and tongue.

I cannot conclude theſe hiſtories without acknowledging my obligation to MR. CAMPBELL, for the ſkill and attention with which he aſſiſted me, in the management of the above patients.

The

The event of theſe caſes leads me to hope, that the OAK BARK will be found, by future experience, preferable to the PERUVIAN bark, on many of theſe occaſions; and well calculated, both from the pathology of the affection, as well as the modus operandi of the medicine, to prevent the fatality of this too frequent epidemic—The lemon juice is certainly entitled to its ſhare of utility, as an antiſeptic, on the above occaſions, and aſſiſts to prove, at leaſt to my mind, the juſtneſs of the indication of cure, on which I ſat out.

I have been ſo often an unſucceſsful preſcriber of cordials and wine liberally, with the free uſe of the PERUVIAN bark, &c. as CULLEN has adviſed IT,* in inſtances of the diſeaſe not apparently more dangerous, than was the ſituation of the eldeſt of the above children, on the 27th of OCTOBER, that my mind is at laſt ſtrongly impreſſed with the apprehenſion, that too much has been done in that way, and that the main object was not kept in view, to wit, the PHLOGISTIC OR SEPTIC PRINCIPLE OF THE COMPLAINT. The diſeaſe,

 therefore,

* See Page 398 of the Poſtſcript.

therefore, now ſeems to me to require a *ſpecific remedy*, endowed with that power which is capable of counteracting the increaſing danger to life, from the ſedative and narcotic effects of SUCH A STATE OF THE SYSTEM: but I am afraid *ſuch a remedy* will not eaſily be diſcovered; yet it will afford me much ſatisfaction, if my own future experience, as well as that of others, ſhould confirm my opinion, of what ought to be the leading indication, in the treatment of the diſeaſe, and of the ſuperiority of the OAK BARK over the PERUVIAN BARK, as an antiſeptic in this GENUS of putrid diſeaſes, aided, in the very bad caſes, by the ſame virtue in the lemon juice.

It is a very common practice to employ the means of ebullition, for a length of time, to extract the virtues of medicines. It, however, becomes a queſtion, whether this mode of preparation may be ſo well ſuited, to convey the medical qualities of the oak bark, or even of the PERUVIAN bark, to the ſyſtem. There are certainly very good reaſons, why we ſhould be of opinion, that the infuſion, of the oak bark particularly, is preferable to the decoction,

decoction, and ſuch a preparation of it has been for many years uſed, in the practice of the WESTMINSTER GENERAL DISPENSARY. I ſhall, I think, more experimentally proſecute this enquiry, which has been paſſed over in ſilence by DR. CULLEN, who has only mentioned the decoction, in his remarks on the utility and exhibition of this medicine.

I ſhould ſuppoſe it might be, ſometimes, an improved way of giving the cortex *quercûs* (which, by the by, has been incorrectly called by DR. CULLEN, in his TREATISE OF THE MATERIA MEDICA, cortex *querci)* by infuſing it in the boiled decoction of the *canella alba*, orange peel, or any other article of the materia medica, with which it may be intended to be given.

Though the decoction ſucceeded in the preceding caſes, I have thought it proper to inform my reader, of the probable advantage of the infuſion, on account of the volatility of its medical virtues, when the circumſtances of the caſe will permit the neceſſary time, for ſuch a preparation of it. It is unqueſtionably beſt prepared by infuſion in large quantities, and, therefore, may

may become the preferable mode of uſing it as a marine antiſcorbutic. There is ample room, however, for further obſervations on this ſubject.

Allow me to conclude with ſaying, that as I am often inclined to build much of my own reaſoning, when at the bed-ſide of putrid diſorders, on an *univerſal principle in the ſyſtem generating animal heat by the ſkin*, from ſuppoſing that there is either an exceſs, or a diminution, of the ordinary ſtate, or action, *of it*, I indulge a hope, that the proſecution of *that intereſting ſubject* will be further elucidated by the late, as well as intended, experiments, to inveſtigate the nature and uſe of animal electricity, in the animal œconomy; and we may, in the end, render that *cutaneous principle* as important to the theory and practice of medicine, as was, in former times, HARVEY'S celebrated diſcovery of the CIRCULATION OF THE BLOOD.

FINIS OF POSTSCRIPT.

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CORRIGENDA
ALTERA.

PREFACE, page 13, line 20, for I HAVE, read THE AUTHOR HAS.

At the following Pages, viz. 87, 242, 247, 270, 276, 278, and 279, for EXHALENT, read EXHALANT.

Page 98, line 6, for DISEAES, read DISEASE.

—— 188, —— 4, for ATTENDANT, read ATTENDENT.

—— 132, —— 5, for PREUMATIC, read PNEUMATIC.