

**Observations on the intermitting pulse, as prognosticating in acute diseases, according to Dr. Solano, a critical diarrhoea: or, as indicating the use of purging remedies / [Daniel Cox].**

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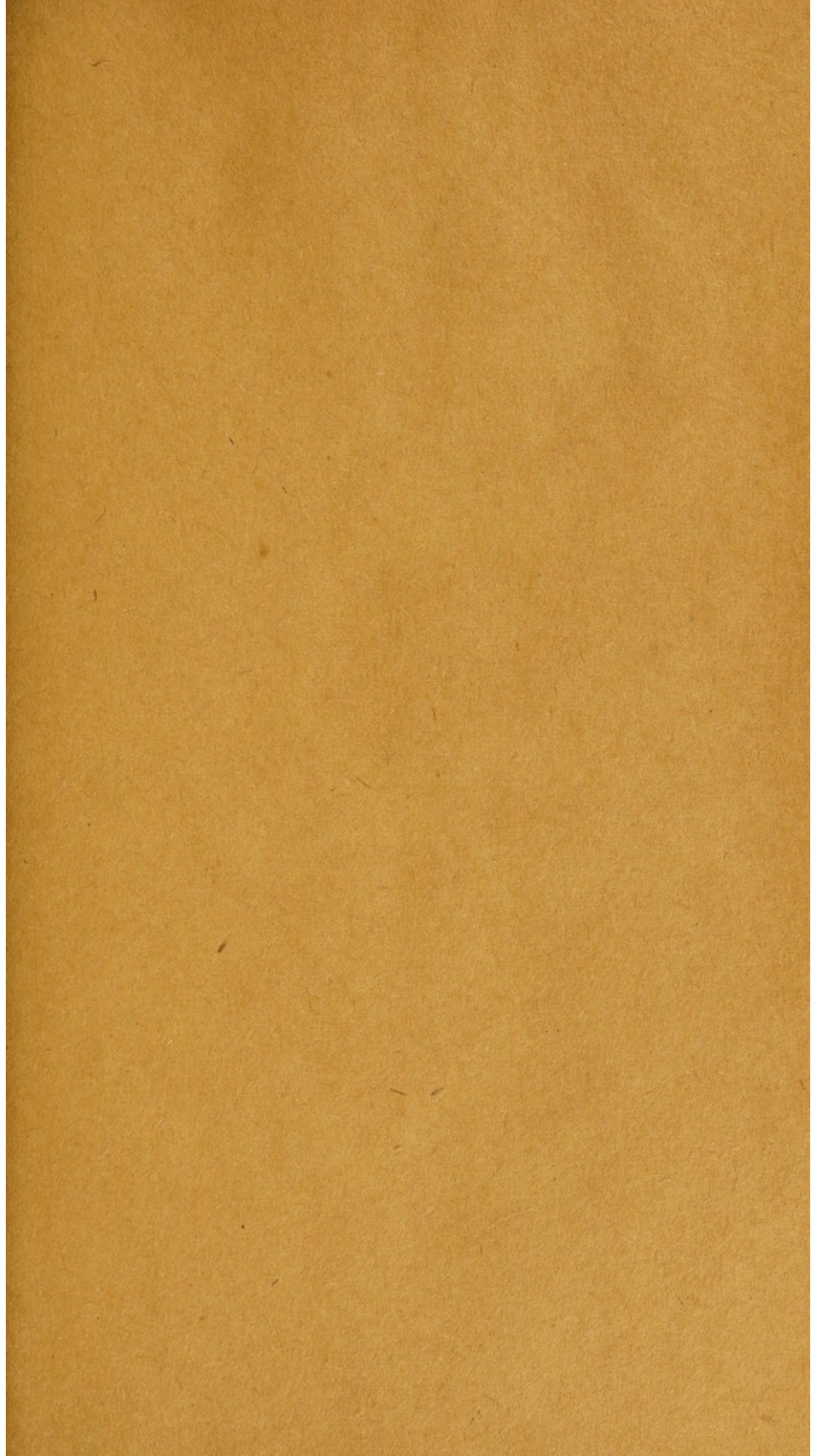
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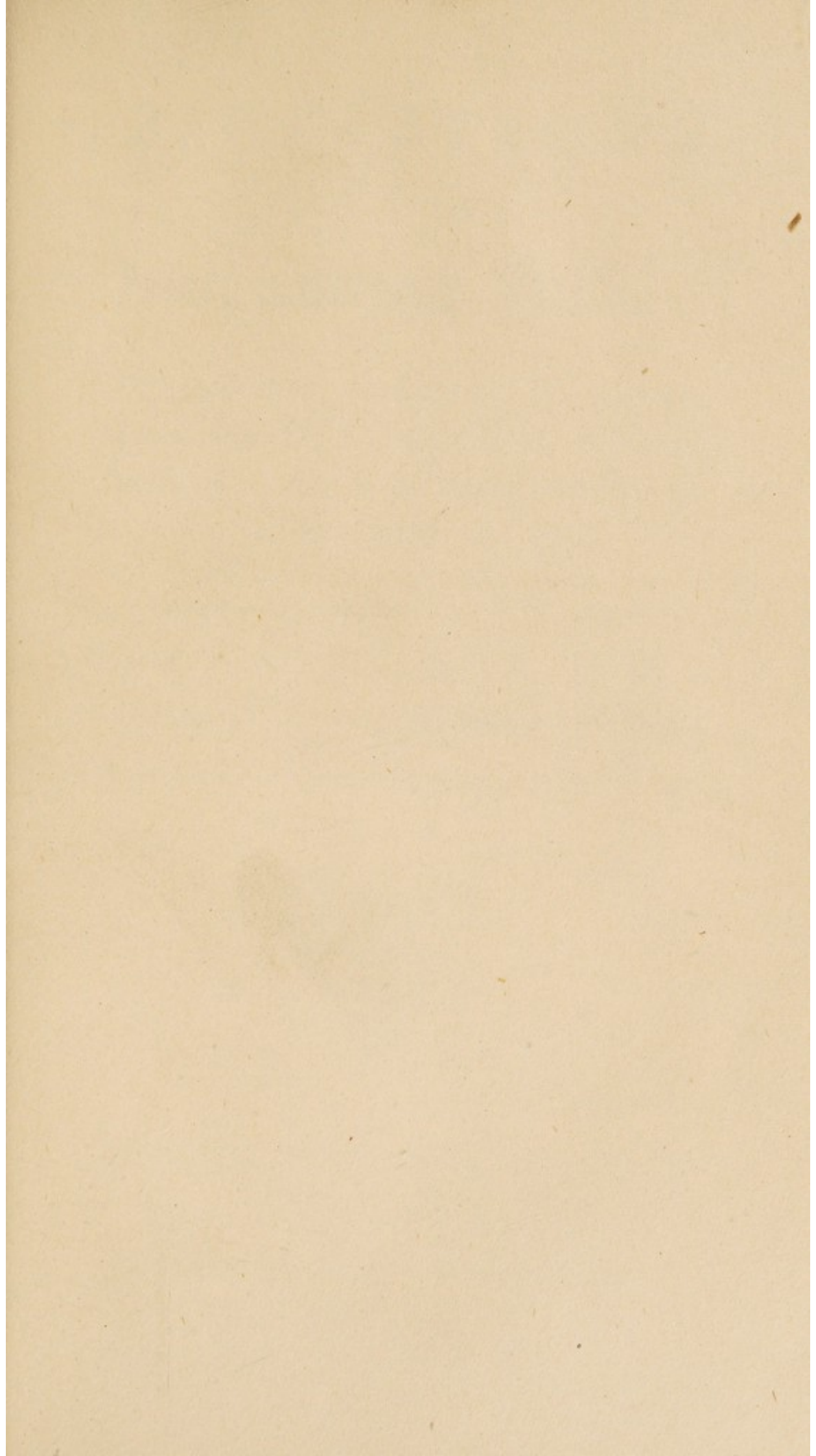
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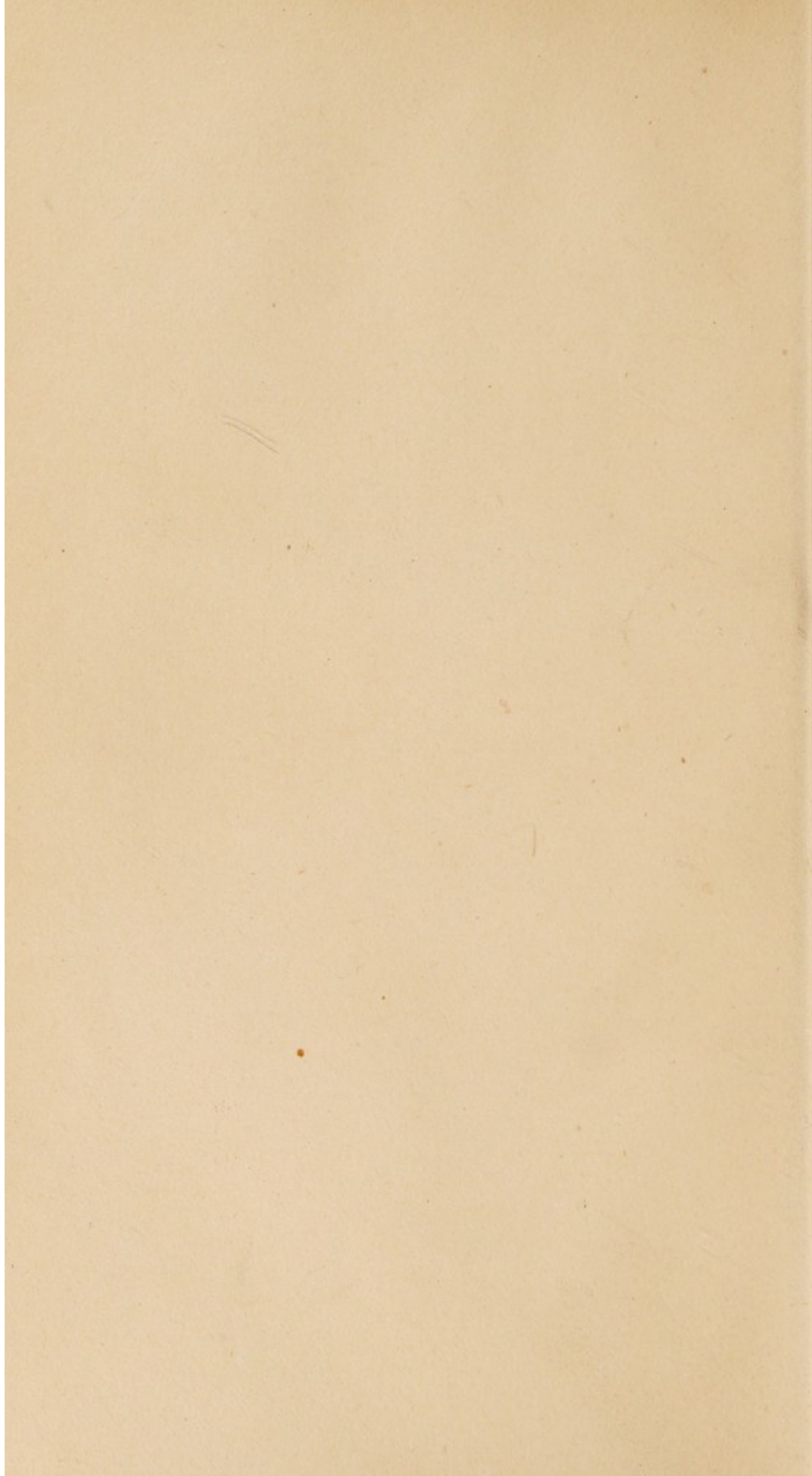




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# OBSERVATIONS

ON THE

## Intermitting Pulse,

As Prognosticating, in ACUTE DISEASES,  
according to Dr. SOLANO, a Critical  
Diarrhœa — Or, as indicating the Use of  
PURGING REMEDIES.

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By DANIEL COX, M. D.

Member of the Royal College of Physicians, LONDON.

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The Reader is desired to correct the following Errata.

- Page 45. In the note line 1, for *that* read *the*.  
70. Line 11, for *gr. xx.* read *gtt. xx.*  
84. Line 10, after *oppression* dele the *semi-colon*.  
87. Line 1, after *days* dele the *comma*, and add a *colon*.  
120. Line 7, for *apparear* read *appear*.  
127. Line 21, for *rever* read *fever*.  
132. In the note, line 2, for *faintnefs* read *faintness*.

TO THE  
PRESIDENT,  
AND  
CENSORS,  
OF THE  
ROYAL COLLEGE OF PHYSICIANS,  
LONDON,

THIS ESSAY,  
ON THE  
INTERMITTING PULSE,  
IS,

With great Deference and Respect,

Addressed by

Their most obedient and

Most humble Servant,

DANIEL COX.

TO THE  
PRESIDENT  
AND  
COUNCIL  
OF THE  
ROYAL COLLEGE OF PHYSICIANS  
LONDON

THIS ESSAY  
ON THE  
INTERMITTING FEVER

With great Diligence and Research

Abstracted by

Their most obedient and

Most humble servant

DAVID COOPER



## INTRODUCTION.

**T**HE following papers are published, with the view of recommending, to the notice of the professors of medicine, some remarkable discoveries, which have been, of late years, made concerning the prognostication of crises by the pulse. This is their general purpose: But they are more particularly taken up with the intermitting pulse, as the sign of a critical diarrhœa—or, as an indication for administering purging medicines.

As these discoveries have, I apprehend, been but little attended to by practitioners in general; and as this essay may be considered

as a sort of commentary upon one part of them, it seems necessary, that I should, at my first entrance upon the subject, give some account of their origin.

In the year 1741, a treatise, in octavo, was published at London, intitled, ‘ New and extraordinary observations on the prediction of various crises by the pulse, independent of the critical signs delivered by the ancients; made first by Dr. Don Francisco Solano de Luque, of the city of Antequera in Spain; and subsequently by several other physicians; illustrated with many new cases and remarks; to which are added some general hints on the nature, antient observance, and modern neglect of crises. By James Nihell, M. D.’

This treatise had its rise from the following occasion, as Dr. Nihell informs us in his preface.—In the year 1737, a work written in Spanish by Dr. Solano concerning the prediction of crises by the pulse, under the title of *Lapis Lydius Apollinis*, was put into his hands by Don Pedro Roxo,

Roxo, honorary member of the medical academy at Madrid, and physician to the hospital of San Juan de Dios in Cadiz, as Dr. Nihell was to the British factory of that city. This physician acquainted him that he had some experience of the truth of Solano's discovery, and complained of the supine indolence of his countrymen, who totally neglected a matter of so great importance, so new, and so strongly supported by facts, as that which Dr. Solano proposed seemed to be.

Struck with the novelty and moment of the subject, he perused the book with uncommon diligence, found the whole matter proposed with the greatest candour, and supported by ample evidence: but, to prevent the least doubt in an affair of such importance, he determined to go to Antequera, the place of Solano's residence, three days journey from Cadiz, to examine into the truth of the facts, and, if they were such as he had represented them, to acquire under him a thorough experience in his new art of prognosticating. He was received by

Solano with great humanity, and had all the opportunity, he could desire, procured him, of a free and impartial enquiry into his past observations, and of seeing such as occurred during a stay of two months in Antequera. The result was, a full satisfaction concerning the veracity of the facts recited in Solano's book, and the general validity of his doctrines.

From this book Dr. Nihell has made such extracts, as he judged necessary for putting the subject in a clear and intelligible light; which, he informs us, lay crowded, in a large folio, among a great number of foreign digressions, and a perplexed labyrinth of reasoning and facts.

In these extracts are comprized, Solano's rules for prognostication, from the three critical pulses mentioned by him, viz. the *pulsus dicrotus*, or rebounding pulse—the intermitting pulse—and the *pulsus inciduus*, or rising pulse—The first, prognosticating an hæmorrhage by the nose—The second, a diarrhœa—and the third, sweats.

To

To these rules succeed several select observations, from Solano, instancing the success of his predictions; some cases communicated to Dr. Nihell by other physicians; and some to which he was himself witness. And lastly, he has interspersed, in the course of his dissertation, a variety of remarks tending, as the occasion seemed to require, to explain, confirm, or limit, Solano's propositions concerning the critical pulses; to illustrate the doctrines concerning crises in general; and to enforce the observance of them in practice.

He has, besides, given us an account\* of the first rise of Solano's observations as communicated to him by Solano himself, of which this is the substance,

THAT, in the year 1707, Solano, then a student in medicine, attended the practice of one Dr. Pablo, in the hospitals. He had observed the rebounding pulse in various

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See Dr. Nihell's treatise, page 141.

patients,



patients, and enquired of his preceptor the reason and significancy; who desired him to take no notice of such trifles, which proceeded meerly from fuliginous vapours.

Solano, hereupon, gave no farther attention to the matter, till in the accounts daily given by the attendants to the physician, mention was made of hæmorrhages by the nose having happened to those very patients, in whom he had observed the rebounding pulse. This excited his curiosity, and urged him to a closer examination of the matter.

To the next patient with this pulse, a young man in a burning fever, he privately prevented the exhibition of the medicines, which had been prescribed for him, resolving, from what had happened to the other patients, to trust this case to nature.

Solano passed the day, from five in the morning till six in the evening, with much uneasiness of mind: At this hour appeared an hæmorrhage by the nose, which, including some intervals, lasted for the space of  
an

an hour and a half. The blood flowed moderately, amounting, in this time, to about six ounces; Solano never quitting, all the while, the patient's pulse: By a constant application to cases of this kind, of which several occurred, he was enabled to frame some very extraordinary rules of prognostication, for which the reader is referred to Dr. Nihell's treatise, as my business, in this essay, is only with the intermitting pulse.

The doctor's attention, once fixed on the pulse, soon opened to him a new scene of wonder and satisfaction, in this pulse likewise. In the hospital was a patient in an acute fever; on the third day of which he observed the intermitting pulse to recur, sometimes at every seventh, sometimes at every eighth pulsation; which, together with the greatness of the distemper, according to the then established rules of prognostication, he, at first, judged a mortal sign; but afterwards reflecting on his observations on the rebounding pulse, he determined to watch carefully every turn of this case, and examine, whether the intermitting pulse was attended with any  
effect

effect analogous to those he had observed consequent to the rebounding pulse. He prevented the exhibition of the remedies prescribed, as he had done in the former cases. But here again recurred the doubts and perplexities, which before tormented the unexperienced observer, in the first case on hæmorrhages. They kept him on the rack, all the third, and half of the fourth day; after which the patient, who was then afflicted with a great anxiety, and sharp griping, fell into an abundant diarrhœa. The doctor, who had notice of it, went immediately to the hospital, and examining the patient's pulse, he found the intermission recurring at every second pulsation; and, in the space of twelve hours that he remained with him, frequently feeling the pulse, he observed the intermission to lessen as the diarrhœa proceeded, until, at last, it entirely ceased, leaving the patient free from his complaints.

Thus did the young observer daily find new lights breaking in upon him, at once recompensing and encouraging his diligence.

He

He successfully pursued his observations the rest of the year 1707, but always underhand, to avoid the displeasure of Dr. Pablo, a man of a very violent temper, for preventing the exhibition of the remedies he prescribed to the patients, who had the rebounding and the intermitting pulses. At length, in the year 1708, he had the satisfaction of exerting the skill he had acquired, in this way, in a public and authentic manner.

A year or two after, in a neighbouring town, to which he was titular physician, he discovered, by his diligent attention to the pulse, that other critical pulse, mentioned above, the *pulsus inciduus*, and found it to prognosticate critical sweats.

This much may suffice, at present, to give the reader, yet unacquainted with them, some idea, of the tendency and conduct of Dr. Nihell's treatise, and of the Solanian observations in general.

That the discoveries are extraordinary, and of as interesting a nature, as most that have been treated of in medicine, will, I think, be scarcely disputed by any one, who will give himself time to examine them with diligence and candour. Nevertheless, it must be owned, that they are of a kind, so out of the road of common observation, that one need not, perhaps, much wonder, that a treatise, which thus represented them to us, should not at once have engaged the attention of physicians in general, much less commanded their immediate assent to the facts it recited: For ‘ facts of  
 ‘ this kind,’ as Dr. Nihell justly observes,  
 ‘ are of a delicate and doubtful nature, ex-  
 ‘ posed to jealous suspicion, which ever  
 ‘ grows upon the mind in proportion as  
 ‘ the subject is new and surprizing: Here  
 ‘ then it may be expected in its greatest  
 ‘ degree of wariness. Histories of crises  
 ‘ prognosticated, some three, some four  
 ‘ days before they happened, if unsupported  
 ‘ by collateral proofs, must look like fa-  
 ‘ bulous

‘ bulous inventions and delusive tales of  
‘ enchantment.’ \*

Without such collateral proofs they would, undoubtedly be liable to these imputations: But even with them, while they rested with us only as matters of narrative, it could not well be expected, that they would make any very deep impressions on the mind. They would still want the aid of our own proper experience, to exemplify and establish to us their importance and use: like travelling over a country, whereby we obtain much livelier apprehensions of its real aspect, than can be conveyed by description alone.

The truth of this observation I found evinced in myself. I had perused the treatise on its earliest publication, and supported as the facts appeared to be, I could not withhold my assent to them; but it was still but mere assent I gave them; or, at most, they remained but as subjects of admiration, till

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\* Preface, page 1.

experience realized them, as it were, to my mind, and convinced me of their importance: And, in the same manner, it may be presumed, for the nature of the thing justifies the presumption, the minds of other readers have been, and will, hereafter, be affected.

The experience, however, I mention, has been confined to the intermitting pulse, for with the two other critical pulses, the *pulsus dicrotus*, and the *pulsus inciduus*, I am not yet experimentally acquainted; though from what I have experienced concerning the intermitting pulse, it is but just in me to conclude, that the facts I find in Dr. Nihell's treatise, relating to the other critical pulses, are no less valid: It is, therefore, my hope, that by thus reviving the subject, though but part of it is here treated of, I may be the means of exciting my brethren to an enquiry into the whole: An enquiry, which if prosecuted with an unprejudiced, and disinterested zeal, promises, in my judgment, no small improvement to the methods of healing.

That

That it is a subject thus worthy of their attention, as being of real practical use, not of mere speculative amusement, will appear, were there no other, from this one consideration respecting the pulse of which we treat; that, when happening in acute diseases, physicians have generally esteemed it a fatal, or at least, a dangerous prognostic: and, if they have not totally given over their patients, they have yet been accustomed to place their confidence in remedies, if the Solanian observations are right, of an opposite tendency to the just indications of cure; possibly, producing thereby, if tenaciously adhered to, that very fatality they aimed at preventing, such as Epispastics, Volatiles, and other stimulating remedies, with, perhaps, a generous diet, on a supposition, that depletion and relaxation were, as without doubt they sometimes are, the causes of this symptom. Whereas it will, I apprehend, evidently appear from the histories which I shall give out of Dr. Nihell's treatise, and from those of my own hereafter recited, that the intermitting pulse, in acute diseases, is frequently owing to other causes than those just mentioned.

That



That it certainly, under some circumstances, presages a diarrhœa,—or, which is of the utmost importance for the physician to know, affords a sure indication for administering purging remedies ; thereby delivering us from that state of uncertainty and uneasiness, which ambiguous symptoms are wont to create in the minds of every honest and humane practitioner.

Dr. Nihell has expressed himself on this head with force and elegance.—‘ Besides the  
 ‘ insight, says he, these facts in general af-  
 ‘ ford us into the critical tendencies of na-  
 ‘ ture, there accrues to medicine, an un-  
 ‘ deniable advantage, from the observations  
 ‘ on the intermitting pulse, in particular. It  
 ‘ is well known, what fatal prognostics are  
 ‘ annexed to this pulse by our modern and  
 ‘ antient authors ; what scenes of ground-  
 ‘ less desolation have been thereon caused  
 ‘ in families—What inglorious mistakes in  
 ‘ physicians, who have, in such cases, more  
 ‘ than once, positively pronounced the  
 ‘ doom of their patients, and deserted them  
 ‘ in a panic ! while wiser nature happily  
 ‘ played

' played her part unperceived, and, in the  
 ' common course of things, wrought cures,  
 ' which inadvertent art, in its own defence,  
 ' called miracles. But now these terrors  
 ' and mistakes are effectually removed by the  
 ' facts I mention. The intermitting pulse,  
 ' in acute diseases, is no longer formidable  
 ' in itself. It becomes ominous, then only,  
 ' when other signs, distinct from this, con-  
 ' cur to shew—That it is not critical—  
 ' That the crisis, thereby denoted, is impro-  
 ' per—or that the patient is too weak to  
 ' undergo it.—And, the physician, freed  
 ' from idle apprehensions, is left to judge  
 ' coolly from the whole state of the case,  
 ' whether the intermitting pulse denotes,  
 ' either danger, or a happy crisis. Were  
 ' medicine to reap no other benefit from  
 ' this work, than multiplied examples of  
 ' innoxious intermissions of the pulse, in  
 ' cases, wherein they are generally held  
 ' mortal, it must be allowed a matter of no  
 ' small importance.' \*

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\* Treatise, page 75.

In this opinion of the importance, of this part, as well as of the subject in general, every practitioner, who has had any experience of the truth of the facts, recorded in Dr. Nihell's treatise, must naturally concur. But, as there may be some, into whose hands this essay may fall, who have not yet perused that treatise, or who have attended but little to the matter it contains, it may serve to animate their zeal towards the inquiry to which they are invited, to lay before them the testimonies, which some other physicians have given to the merit of Dr. Nihell's book.

In the year 1745, Dr. Gerard Van Swieten published his second volume of, *Commentaria in Boerhaviæ Aphorismos de morbis cognoscendis et curandis*. In his commentary on § 587, tom. ii. page 59, he mentions Dr. Nihell's treatise. He had been explaining the articles of concoction, secretion of the concocted humours, and crises; and, after extolling the antients for their diligent observation of the methods, which

which nature uses in curing diseases, and bestowing some encomiums on our illustrious countryman, Dr. Sydenham, as excelling in this particular; he gives a general account of the contents of Dr. Nihell's treatise, and subjoins to this effect—' The dignity of the subject is assuredly such, as to deserve to be diligently enquired into by every one, who exercises the art of medicine: Nor does it seem improbable that many of the like signs might be discovered in the respiration, tongue, urine, &c. At least, the discoveries, here made, should add spurs to our industry, and induce us to observe, with unwearied application, the occurrences which happen in diseases.'

In the year 1752, Dr. Malcolm Fleming published a Latin essay, intitled, *De Francisci Solani inventis, circa arteriarum pulsus, et præfagia inde haurienda, Programma—In quo ea, secundum receptas in oeconomia animali leges, solvuntur et explicantur.*

D

This

This essay is dedicated to Dr. Anthony Askew, into whose hands the manuscript was put, and from whose approbation, concurring with that of some other friends, he was induced to print and publish it—Now, these previous steps were taken, ‘ Lest any ‘ one,’ says the Doctor, ‘ should censure ‘ me, as having engaged with too precipitate a zeal in the discussion of an argument, altogether new, and of such a nature, that scarcely any thing has been ‘ offered in medicine of greater weight and ‘ utility’—And in terms of the like approbation and esteem he has expressed himself in other parts of his work.

In the year 1753, Dr. William Noortwyk, of Leyden I think, published a Latin version\* of Dr. Nihell’s treatise, so much did he esteem it worthy the attention of the professors of medicine: He

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\* To this version he has annexed an ingenious dissertation of his own, de natura humana—And a disquisition, de pulsu, by G. Christ. Schelhammer, first published at Helmstadt, 1690.

laments, in his preface, the custom of publishing medical works in the mother tongue of a country, instead of in a language understood by men of learning in general, and gives it as a reason, why so little notice had been yet taken of this treatise, and, to foreigners, it may be a good one; ‘How few  
 ‘ are there, says he, to whom, tho’ it has  
 ‘ been so long published, even so much as  
 ‘ the title is known! and wherefore, but  
 ‘ because it is written in English? It, never-  
 ‘ theless, contains matters of deep impor-  
 ‘ tance, and which, as they regard the  
 ‘ health of mankind, deserve, if ever any  
 ‘ thing did, the most attentive examina-  
 ‘ tion’. I need not enter into the question, whether it would be of more general benefit, that medical writings should be published in a learned language, than in that of a country. If the former is to be preferred, as it respects the professors of the art in general, yet, as medicine is circumstanced in particular countries, much might be said in defence of the latter—But this is not my present province; the purpose, for which I have brought the preceding quo-

tations, being only to shew, as was before mentioned, in what high esteem the observations, communicated by Dr. Nihell, are held by these authors; that, by the influence of their sentiments, others might be excited to make experiment of their truth, and of their importance and utility with respect to practice.

Besides these authors, there has not occurred to my knowledge a single one, who has offered any thing in support, or recommendation, of any part of the Solanian observations, since the publication of Dr. Nihell's treatise, now sixteen years ago; and of which there has been yet but one impression, and that, I apprehend, not sold off: a pretty evident proof how little the subject has been attended to: nor, except by one of these authors, has any thing practical been published—Van Swieten barely remarks upon the discoveries, as extraordinary, and worthy of being examined. Dr. Fleming does the same, but his essay is theoretical. Dr. Noortwyk indeed, in his preface, gives an instance of a young woman in

a dropfy to whom he was called, soon after having heard of these discoveries of Solano's. At his first visit, which was in the evening, he perceived her pulse to intermit irregularly. He gave her a mixture with some cardiacs, which could, by no means, move her hitherto constipated belly, and silently waited the event. When he visited her next morning, he was immediately asked by her mother, whether he had given any thing purging in the medicine, for that her daughter had had, in the night, four liquid stools; a manifest proof, says he, of a diarrhœa succeeding the intermitting pulse. He gives, likewise, one case, evidencing the connexion between the pulsus dicrotus, and the hæmorrhage by the nose, which occurred within his own observation, and two from a friend, in proof of the connexion between the pulsus inciduus and critical sweats: in one of which the pulse rose in gradation to six or seven, which Solano had never observed to rise to above four consequent pulsations.

It is, however, not improbable, that many observations, on one or other of the critical pulses,



pulses, may have occurred to other practitioners, but which a diffidence of appearing in print on a subject by most disregarded, and, by some, treated as chimerical, may have restrained them from publickly communicating. I can easily conceive, from what has passed in my own mind on this particular, how others may have been impressed. The date of my first case is now above fourteen years ago. The four first finished in 1752, and were then upon the point of being published. The last three have happened within this year and half. I have, at various times, had it in my intention to have published them, and yet, from the same kind of, may I not say, blameable diffidence (for it is surely every man's duty to endeavour to benefit his fellow-creatures) this design has been from time to time postponed: it is, however, at length accomplished, and in the best manner I am at present capable of, and with, I am sure, a right intention, which, I promise myself, will procure it a candid reception.

But

But there is one part of this essay, which seems to demand a particular apology; I mean those large extracts I have made from Dr. Nihell's treatise, which indeed take up no inconsiderable part of this book—I should have been glad to have given, in a shorter plan, a clear idea of the subject; but I did not find it practicable. I might, indeed, have mentioned things in general, and made only references to the treatise: but as this, if he was possessed of it, would create to the reader, the additional trouble of consulting another book, and, if he was not, would be of no immediate use to him, I have thought it a more proper part for me to take, to give extracts, from that treatise, on the most important points relating to the intermitting pulse, as Dr. Nihell did, on the general matters, from Dr. Solano's book—By this means, that part of the subject, on which I treat, will be placed in a more ready and obvious view, than as it stands mingled with the observations on the two other critical pulses. Where I could, without maiming the sense, or weakening its force, I have been careful to abbreviate, particularly in the  
cases,

cases, which I have selected from Dr. Ni-  
hell; out of which I have thrown several  
incidents, which, as they contained testi-  
monies of the authenticity of the facts, it  
might be proper enough for him to men-  
tion; but as his veracity, and their validity,  
will not, I presume, be questioned, it did  
not seem necessary for me to transcribe.  
To have just mentioned these things will,  
I hope, be esteemed sufficient.

The cases I have now published, as  
having fallen under my own observation,  
are, I am sensible, but few in number for  
the series of years in which they have  
happened; too few, it may be judged,  
upon which to establish rules for future  
practice: And, the sentiment might be just,  
was a multiplicity of cases always necessary  
for such a purpose, or did the matter rest  
wholly upon these: For few as they are,  
I trust it will be admitted, that the indica-  
tions, upon which I acted, were the true  
ones, from the happy event, which the  
observance of them produced to the pa-  
tients. They might, therefore, serve as  
precedents

precedents for practice, in similar instances, though they are thus few, or though they stood single, and un-supported by the experience of others: At least, if no more, they, surely, become proper incentives to future enquiry and examination—But if, to the cases I have offered, the reader will be pleased, while he is considering the subject, to join those of Dr. Nihell's, he will, I persuade myself, from their general concurrence and harmony with each other, be induced to allow, that the doctrines inferred from them, do thus acquire a considerable degree of weight; and that both these, and the facts from which they are deduced, do demand so much of his attention, as not to be peremptorily decided against, or slightly treated, till his own observation and experience shall appear to authorise such a conduct.

I am far, however, from thinking, that I have, in the following pages, put every thing, relating to the subject, beyond exception; it is a copious one, upon which much may be said, and nothing should

be determined dogmatically ; but our minds kept open to the information of future experience. It will give me, however, some satisfaction, if what I have written might be considered, as a well-designed attempt to supply, in some measure, what seemed wanting—And it will be no small addition thereto, if the little I have done should prove an excitement to others, to communicate what observations they have made, or may make, on this, or the other critical pulses. The united labours of many might bring those things to perfection, which the most assiduous industry of a single person might never be able to accomplish. It was with these hopes that Dr. Nihell published his treatise, ‘ Un-  
‘ certain,’ says he, ‘ of my own fate, I  
‘ thought it imprudent to delay the pub-  
‘ lication of what I have observed, under  
‘ the doubtful hope of giving hereafter  
‘ more compleat observations, than those  
‘ which I have already made ; the more  
‘ because I am convinced, from the va-  
‘ riety and extent of the subject, and from  
‘ the difficulties, which, in the present  
‘ state

‘ state of practice obstruct a nice and ex-  
 ‘ quisite observation, that this matter is  
 ‘ greatly superior to the diligence of any  
 ‘ one man. I, therefore, call, in time, for  
 ‘ the assistance of my brother physicians  
 ‘ in this pursuit. ’Tis true, I call them  
 ‘ to a laborious task, and to a minute  
 ‘ enquiry into things—But then, they are  
 ‘ British physicians, whose happy appli-  
 ‘ cation to the improvement of their art,  
 ‘ is well known over all Europe\*.’

Many years are now elapsed since Dr.  
 Nihell’s treatise was published, and yet,  
 how little has this invitation been regarded!  
 And, indeed, it seems somewhat remark-  
 able (unless the small attention given to  
 his treatise has been the cause) that Dr.  
 Nihell himself should not, in so long a  
 space of time, have contributed a syllable  
 in print, as I think he has not, towards  
 confirming the Solanian observations; if  
 so it is, that they are really as valid in this  
 our variable northern climate, as in the  
 more temperate and settled regions, in  
 which they were first made.

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\* Preface, page 23.

That Dr. Nihell, when he published his treatise, judged they were, may be inferred from the following passage\*. ‘ It has indeed, says he, been long objected; nay it is still imagined, that the northern climates are incompatible with that regular course of distempers and crises observed, in Greece, by Hippocrates and other antients. This objection is probably deduced from Aphorism 8. sect. 3. †. But however true it may prove in some degree, there is very good reason to think the inference by much too extensive. Whereas, the contrary is insisted upon, from matters of fact, by physicians of acknowledged skill and long experience, as shall be seen in the second part of this work, sect. I. chap. iv.’—viz, his chapter on crises.

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\* Treatise page 50.

† The aphorism of Hippocrates, which Dr. Nihell refers to, runs thus, ‘ Temporibus benè et ordine constitutis, et tempestivam tempestivitatem servantibus, morbi, qui facilè consistant et solvantur, fiunt. In malè verò constitutis, qui, neque facilè consistunt, neque facilè solvantur. Editio Foëssii, pag. 1247.

Indeed, in another place, he seems to intimate a contrary opinion, when, in palliation of the latitude Solano took in his inferences from the cases he had met with, he refers it to the judgment of the judicious and unprejudiced,\* ‘ whether the  
 ‘ temperate diet, regular course of life, and  
 ‘ excellent climate [of Spain] where Solano practised, might not contribute to  
 ‘ render diseases more simple, and their  
 ‘ crises more regular, than they are found  
 ‘ under the contrary circumstances’. But whoever will be at the trouble of perusing his chapter on crises, in which are contained several excellent observations, will, I apprehend, discover, notwithstanding this cursory remark on Solano, that the former quotation contained Dr. Nihell’s settled opinion, and that this opinion is, in general, the true one.

Should these sheets fall into his hands, these hints will, I hope, excite him, on

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\* Treatise, page 12.



this revival of the subject, to add to the important service he has done to medicine, a still farther explanation of the matters contained in his treatise; as, from the advantage he has had of being acquainted with Solano, and his writings, and from his own experience added thereto, he must, without doubt, be the best expositor of the doctrines, advanced both by Solano and himself.

I shall detain the reader no longer by way of introduction, than just, in a few words, to premise to him the general plan of this essay; which is much the same with respect to Dr. Nihell's treatise, from which my first hints were taken, as his was with regard to Solano's, which gave rise to Dr. Nihell's—viz. I shall,

First, GIVE Solano's Rules of prognostication from the intermitting pulse, as laid down by Dr. Nihell.

Secondly, INSERT, from him, some select cases of diarrhœas prognosticated  
from

from this pulse, by Solano, Himself, and others.

Thirdly, RECITE some cases, seven in number, which have occurred within my own practice, with a remarkable one communicated by a Friend.

And Lastly, ADD a few practical remarks on the whole.





C H A P. I.

*Containing Solano's rules of prognostication from the intermitting pulse\*.*

R U L E I.

‘ **T**HE intermitting pulse is a certain  
‘ sign of a critical diarrhœa, and  
‘ becomes a mortal one, then only, when  
‘ the strength requisite to perform the  
‘ crisis fails.’

‘ This too general proposition,’ says Dr.  
Nihell in a note, ‘ shall be confined to  
‘ its proper limits in the second part of  
‘ this work.’

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\* Dr. Nihell's treatise, page 5, et seq.

## II.

' The length of time spent in the in-  
 ' termiffion, denotes the quantity of mat-  
 ' ter which is to flow by the diarrhœa,  
 ' or the number of stools. An intermiffion  
 ' of one diaftole, or in which one diaftole  
 ' alone is miffing, points out a fmall eva-  
 ' cuation, or few stools. That which takes  
 ' up the fpace of two diaftoles, fignifies  
 ' an abundant evacuation, or many stools.  
 ' And laftly, that which takes up the time  
 ' of two diaftoles and an half, the longeft  
 ' intermiffion Solano has obferved, de-  
 ' notes a very abundant evacuation, or a  
 ' greater number of stools.

' As the various frequency of the pulse  
 ' in different perfons, and in the fame  
 ' perfon at different times, allows no fixed  
 ' meafure of interval between each pul-  
 ' fation, it is to be prefumed, that Dr.  
 ' Solano, tho' he never gave any expla-  
 ' nation of this matter, underftood in the  
 ' preceding article, that meafure of inter-

‘ val which the regular pulsations, between  
‘ the intermissions, bear the one to the  
‘ other in every patient.

III.

‘ A tension of the artery, joined to the  
‘ intermitting pulse, is a certain sign of  
‘ a critical vomiting, superadded to the  
‘ diarrhœa.

IV.

‘ A greater or less tension of the artery,  
‘ denotes a greater or less evacuation by  
‘ vomiting, more or fewer efforts to vomit.  
‘ The length of the intermission simply  
‘ relates to the quantity of the conjoint  
‘ diarrhœa, or the number of stools.

V.

‘ The doctor has never observed a sim-  
‘ ple crisis by vomiting without a diarrhœa,  
‘ or, consequently, whether such a crisis  
‘ has any particular sign, unknown to  
‘ the antients.

VI.

## VI.

‘ A softness of the artery, joined with  
 ‘ the intermission, is a certain sign of a  
 ‘ crisis by urine with the diarrhœa; and  
 ‘ the greater or less quantity of excretion  
 ‘ by urine is denoted, by a greater or less  
 ‘ degree of softness in the artery.

## VII.

‘ Dr. Solano has not observed a simple  
 ‘ crisis by urine, without the complication  
 ‘ of a diarrhœa in some degree, and was  
 ‘ not acquainted with any sign of such a  
 ‘ crisis.’

To compleat Solano's rules of prognostication from the intermitting pulse, there must be added, and applied thereto, the following rules concerning the pulsus dicrotus, or rebounding pulse, which are made common to all the critical pulses. If, therefore, the word *intermitting* is substituted for *rebounding*, and *diarrhœa* for

*hæmorrhage*, Solano's meaning will, I suppose, be obvious.

RULE II,\* *concerning the rebounding pulse.*

‘ When the rebounding pulse appears  
 ‘ at or about every thirtieth pulsation,  
 ‘ the hæmorrhage commonly follows in  
 ‘ four days after, somewhat sooner, or  
 ‘ somewhat later. When it recurs at  
 ‘ every sixteenth pulsation, the hæmor-  
 ‘ rhage supervenes in three days. When  
 ‘ it is observed at every eighth pul-  
 ‘ sation, the hæmorrhage is to ensue in  
 ‘ two days, or in two days and an half.  
 ‘ Lastly, when it recurs at every fourth,  
 ‘ third, or second pulsation, or is conti-  
 ‘ nual, the hæmorrhage is to be expected  
 ‘ in twenty four hours—Therefore, in  
 ‘ general, the shorter the periods of pul-  
 ‘ sation, at which the rebounding recurs,  
 ‘ the nearer the hæmorrhage.’

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\* Treatise, page 2, et seq.

## III.

‘ Sometimes nature runs regularly  
 ‘ through all the fore-mentioned progres-  
 ‘ sions of the critical pulse, from its first  
 ‘ appearance at every thirtieth, down to  
 ‘ every single pulsation, by which the  
 ‘ hæmorrhage is foreseen gradually approa-  
 ‘ ching in the same degree. She some-  
 ‘ times inordinately hastens or delays the  
 ‘ hæmorrhage; and then the rebounding  
 ‘ of the pulse recurs with more or less  
 ‘ frequency in the same proportion. And  
 ‘ when this returns in variable shifting pe-  
 ‘ riods, the time at which the hæmorrhage  
 ‘ is to happen, cannot be exactly deter-  
 ‘ mined.

‘ *Note*, what has been observed of the  
 ‘ rebounding pulse, in the two last articles,  
 ‘ with respect to the various periods of pul-  
 ‘ sation, at which it recurs, and of the  
 ‘ distance or proximity of the crisis, there-  
 ‘ by signified, is to be understood of the  
 ‘ other critical pulses, without any farther  
 ‘ remark



‘ remark on this head, under each of these  
‘ pulses in particular.

VI.

‘ According as the blood flows, the re-  
‘ bounding of the artery gradually slackens,  
‘ until it entirely disappears soon after the  
‘ crisis; and this gradual remission of the  
‘ rebounding, is the sign of an immediately  
‘ preceding hæmorrhage.

‘ This remark is also to be applied, mu-  
‘ tatis mutandis, to the pulses, which de-  
‘ note the other crises,

VII.

‘ If after the hæmorrhage, the reboun-  
‘ ding of the pulse should continue, or  
‘ appear again, it denotes another crisis  
‘ of the same kind, according to the above  
‘ mentioned rules’.

‘ This also is to be applied to the other  
‘ critical pulses’.

THESE are the principal rules, relating,  
or applicable, to the intermitting pulse.

In

In chap. iv. sect. I. of Dr. Nihell's treatise, there are indeed some remarks on the critical pulses in general, which may be applied to this pulse; but, after having transcribed the foregoing rules, those do not seem of consideration enough to be added. What I have extracted, suffice to shew, what were Solano's doctrines concerning this critical sign. How far they are to be depended upon, must be determined by observation and experience. It was from these they were deduced, tho' the conclusions may be too general, as it is Dr. Nihell's opinion that they were; for thus, on the general subject, he closes the last mentioned section and chapter. ' Such  
 ' are the rules for the prognostication of  
 ' crises by the pulse, deduced by Dr. So-  
 ' lano from a long course of observation.  
 ' That he was really supported therein, by  
 ' a great number of authentic and extraor-  
 ' dinary facts, will appear, beyond all doubt,  
 ' in the following pages. But, convinced  
 ' from my own experience, that his infe-  
 ' rences are too large and extensive, I  
 ' deliver this system merely as an historian,  
 ' that

‘ that it may plainly appear how far the  
 ‘ doctor has succeeded, and how far he  
 ‘ has been mistaken. However, it must  
 ‘ be acknowledged that he practised in  
 ‘ places, where a temperate diet, an uni-  
 ‘ form course of life, and an excellent  
 ‘ climate concur to render distempers more  
 ‘ simple, and their crises more regular,  
 ‘ than they are found to be under the  
 ‘ contrary circumstances. And what al-  
 ‘ lowances may be made to the doctor,  
 ‘ on this account, I leave to the judgment  
 ‘ of the judicious and unprejudiced. Be  
 ‘ the fate of his rules of prognostication  
 ‘ what it will, the facts alledged by him  
 ‘ are of a quite different nature; prior  
 ‘ to, and independent of, the consequences  
 ‘ he drew from them, and cannot be affected  
 ‘ by any mistake in his subsequent reason-  
 ‘ ing. The substance of his observations,  
 ‘ to which I now proceed, still remains  
 ‘ in its full force and authenticness; and,  
 ‘ I dare say, are such as must naturally  
 ‘ excite our curiosity, fix our attention,  
 ‘ and urge us to a farther pursuit of this  
 ‘ matter.’

In

In confirmation of the general assertions, in favour of Solano, in the preceding quotation, Dr. Nihell, in the next section of his work, produces several remarkable observations of crises prognosticated from the three critical pulses, the *pulsus dicrotus*, the *pulsus inciduus*, and the intermitting pulse. For the two former the reader is referred to his treatise, and, for the latter, to the succeeding chapter.



## C H A P. II.

*Containing several select observations of diarrhæas, prognosticated from, or connected with, the intermitting pulse, by Dr. Solano, Dr. Nihell, and others. Extracted from Dr. Nihell's treatise, and abbreviated.*

OBSERVATION I. *See treatise, page 26.*

**I**N a consultation between Dr. Solano and two other physicians, they all observed in a gentleman, their patient, an unequal,  
G
intermitting

intermitting, inordinate pulse. Solano said, that next morning early, the patient would feel a great uneasiness, with such an alteration in his body, that the attendants would judge him in the agonies of death; but that all this tumult would be allayed by three or four stools. The two other physicians gave no credit to this prognostication, attributing the disorder to causes quite different from what Solano suggested. But they were strangely astonished at the completion, for, at the time prefixed, such was the anxiety of the patient, that the whole family was alarmed, and thought him really dying; yet having soon had three or four stools, he almost entirely recovered. The same happened to him the next day, but in less quantity, and without any uneasiness, just as Solano had prognosticated.

OBSERVATION II. *Treatise, page 26.*

In another patient, a Franciscan in a convent, was observed an unequal, intermitting pulse, in the exacerbation of a fever.

fever. Solano, in the presence of two physicians, and other reputable persons, abruptly said, ' The patient had no occasion for any remedy, for, after midnight, the fever would terminate by an abundant diarrhœa;' which happened, as he had foretold, and they all saw the patient next day in perfect health.

OBSERVATION III. *Treatise, page 27.*

The physician, who attests the two preceding cases, having observed, in another patient in the convent, who lay sick of a fever and great uneasiness, an intermitting pulse, recurring at the second and third pulsation, told Dr. Solano, that if, in this patient, his prediction was verified, he should acknowledge himself fully convinced of the certainty of his observations. Solano accepted the proposal, and said, that the patient would very soon have a most violent commotion of the belly. Within two hours he felt such a vehement tumult, and rumbling in the intestines, with an eruption of wind so excessive,

cessive, that he thought he should expell his very bowels; to this succeeded a fæcal stool, after which the patient grew easy. The next morning, Solano, perceiving some remains of the intermission in the pulse, ordered a clyster to facilitate the motion of the belly, whereon the intermission of the pulse, and the fever ceased, which equally surprized the physician, the guardian of the convent, the surgeon to the Order, and a great many others.

OBSERVATION IV. *Treatise, page 28.*

An old lady of a cachectic habit of body, with obstructions, labouring under some cares and uneasiness of mind, having from an hypochondriac affection fallen into a malignant fever, with a vomiting up of all nourishment and remedies, a suppression of urine, and astringion of the belly, was attended by Dr. Solano and two other physicians in consultation. They all agreed the case was mortal.\* Solano, by the intermitting

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\* This case is but imperfectly related—Did Solano, among the rest, agree the distemper was mortal, or did

terminating pulse, prognosticated that the patient would have, the night following, two or three large stools, which happened accordingly, between eight and nine that night. Two days after in the evening, says the physician who attests this case, I called to see the patient, and finding an intermission of the pulse, between every third and fourth pulsation, I prognosticated a looseness for the next day.

The next morning, the patient had two large stools, and voided a worm of a quarter of a yard long.

OBSERVATION V. *Treatise, page 29, 30.*

In my attendance, says a physician, on a patient who lay sick of a burning fever, after the use of proper remedies, on the ninth

---

did it prove so? for it is not expressly said what that event was. Compared with other cases, in which the crisis was salutary, one should imagine this was so. The connexion, however, between the sign and the evacuation, is obvious.

day,



day, I observed a regular\* intermission of the pulse. As I felt it with extraordinary attention, a person who was present, said, ' Doctor, you seem to apprehend the patient in danger : I really do, tho' no physician, for his pulse stops'. I answered, I both felt the intermission and foresaw the danger; that the former was a mortal sign, and all farther applications of remedies useless. However, I returned next day to see the patient, and found the intermission more manifest, and more frequent; and thus it continued till the day following. Then, a diarrhœa supervened, whereon the intermission disappeared, and the patient was relieved. He soon after recovered perfectly, by a critical abscess of one of the parotids †.

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\* We are not told, in this case, at what periods this regular intermission recurred. The event, however, confirms, in general, Solano's observations.

† It is probable, if this patient had been purged early, this abscess had not happened.

OBSERVATION

OBSERVATION VI. *Treatise*, page 30, 31.

The same physician relates, that he visited a lady in a fever, who had been despaired of by another physician. That he found her in a lethargy, with an intermitting, weak, and low pulse. He confirmed the other physician's prognostic, and refused to prescribe—But, overcome by the importunity of one present, he ordered some digestives, stomachics, and cephalics. The intermission continued, and a *symptomatical* diarrhœa supervened, which was carrying off the patient: but, by the addition of some astringents to the above-mentioned remedies, the looseness and fever ceased—The intermission disappeared--An imminent apoplexy was prevented, and the patient recovered, to the surprize of every body.

Dr. Nihell's note on this case seems not ill founded.

' Tho' the doctor, says he, calls this a  
' *symptomatical* diarrhœa, it really appears  
' to have been, in all rigour, *critical*. For

‘ an evacuation, the most exquisitely calcu-  
 ‘ lated to remove the cause of a distemper,  
 ‘ may become pernicious by an accidental  
 ‘ co-incident with an extreme weakness,  
 ‘ which cannot admit of any large sub-  
 ‘ straction of fluids, without a total relax-  
 ‘ ation or collapsus of the vessels. Such  
 ‘ was the case in the preceding observation.  
 ‘ The crisis was performed. The doctor  
 ‘ happily preserved the proper balance, be-  
 ‘ tween the quantity of the evacuation, and  
 ‘ the strength of the patient. He thereby  
 ‘ maintained her fleeting spirits, and the  
 ‘ morbid cause being removed by the crisis,  
 ‘ she quickly recovered. I say this must  
 ‘ have been the case. Whereas, it is evi-  
 ‘ dent, that a few astringents, to which  
 ‘ the doctor attributes the cure, are neither  
 ‘ medicines adapted to the cause, or pro-  
 ‘ portioned to the degree of the distemper,  
 ‘ here mentioned.’

OBSERVATION VII. *Treatise, page 31, 32.*

In a woman of sixty-six years of age, ill of  
 a double tertian fever, with violent symp-  
 toms, the same physician observed the pulse

to

to intermit at the seventh pulsation, and abstained from all remedies, expecting, according to Solano's observations, a critical diarrhœa. The intermission continued three days, and then ceased, without the least diarrhœa. On enquiry into the patient's regimen, it was discovered, that, on the days above-mentioned, she had eaten boiled quinces, and applied, to the stomach and abdomen, a poultice of quinces, wormwood, and bacon. The doctor ordered these remedies to be removed, the patient's diet to be changed; and inciding, attenuating, and laxative medicines to be administered, to counterballance the condensing effect of the former remedies. The humours being thereby thinned, and the solids reduced to their former laxity, the intermission of the pulse appeared again, and twenty-four hours after, the diarrhœa, which, in some measure, relieved the patient. But finding this was not a compleat crisis, the doctor ordered her a slight decoction of tamarinds, by which she had two moderate stools—

H

But,

But, notwithstanding all his care, she grew worse by degrees, and at last died.

The seven foregoing cases appear to be selected by Dr. Nihell, from Solano's book; but, in the second part of his treatise, the doctor gives us some, to which he was either himself witness, or which were communicated to him by his friends. These too seem to be selected from a greater number. I have chosen from them, such as I thought most important, and have omitted some, which, though illustrative of the observations on this pulse, yet seemed not material enough to be transcribed. Those I have inserted, are, in like manner with the preceding, abbreviated.

OBSERVATION VIII. *Treatise, page 128.*

A man of a robust constitution, fleshy, firm habit of body, and about the age of forty, died February 5, 1738, in one of the hospitals of Cadiz, after labouring sixteen days under an acute fever, attended  
with

with thirst, a hard pulse, moist cough, and very intense pains in the right and superior part of the thorax, so that he could not lie down in his bed. He was bled twice, and cupped, and relieved thereby. On the 10th day of his distemper, his pulse became low, unequal, and intermitting, at almost every pulsation.

This is the substance of the account, which the physician of the hospital gave to Dr. Nihell, who says, that on the 28th of January, he was advised of the state of the patient, and visited him—That he found the pulse regularly intermitting at every second and third diastole, and thus it continued till the 5th of February, on which day, after a short agony, he died. From the 28th of January, to the day last mentioned, he had a slight looseness, gripings, a rumbling in the intestines, and eruption of wind downwards.

The few last days the patient complained of a palpitation, and the day before he died, examining the region of the heart,

the doctor felt, at each inspiration, a motion somewhat like the air in an emphysema, or like phlegm in the trachea. On which he concluded, there was an extravasation of some fluid in the cavity of the thorax, or in the pericardium.

On opening of the body, there was found an almost general suppuration of the parts contained in the thorax; from whence plainly appeared the causes of the intermission of the pulse, and that a salutary crisis was not to be expected. Though even in this case, the connexion between the intermitting pulse and the critical motions is, in some degree, evinced. The account of the dissection is curious, but too long to be here transcribed.

Dr. Nihell concludes this history with an observation, which no practitioner should, in these kind of cases, ever lose sight of:

‘ That it is manifest, with what briskness and vigour the progress of internal inflammations is to be opposed, and, of consequence, how greatly the event of

‘ acute

acute, inflammatory diseases, depends upon the methods made use of in their very beginnings; for when the inflammation rises to a certain pitch, not all the power of medicine can prevent a suppuration, nor the combined knowledge of the whole faculty, answer for the consequence of this, when once formed.

OBSERVATION IX. *Treatise, page 134.*

Oct. 14, 1738, when Dr. Nihell was in Antequera, a boy of eleven years of age, after an excess in eating fruit, fell sick of a quartan ague. At nine next morning, his physician observed the pulse to intermit, for the space of a common diastole, after every pulsation, and sent to give Dr. Nihell notice of it. He visited the patient at ten, who, in the mean time, had four stools. The intermission was then less frequent, and decreasing, and it continued irregular, and shifting all the rest of the day—From ten to twelve, he had three ineffectual urgings to stool.

The



The pulse continued in much the same irregular state for the three days following, with a slight looseness, efforts to go to stool, wind, and rumbling in the guts by intervals. The patient was purged the fourth day, and vomited a worm five inches long. The intermissions and stools became thereon yet less frequent, and without any efforts, wind, or rumbling in the intestines, till the 22d of October in the evening. Then the intermissions regularly recurred, at one or the other of the following periods of pulsation; and moved for some time in the same period, before it passed into another—These periods were, every second, third, fifth, eighth, tenth, or eleventh diastole. On this greater regularity of the intermission, tho' not such as is required by Solano's rules, the doctor ventured to prognosticate a diarrhœa—Accordingly, in the course of the night, the patient had three or four stools.

The intermissions became again less frequent, and shifting, and the belly more  
tight,

tight, till both the one and the other came gradually to the natural state.

OBSERVATION X. *Treatise, page 136.*

Last week, says a correspondent of Dr. Nihell's, a physician of Antequera, visiting a patient with another physician, we found her in an acute fever, with an intermitting pulse, in the degree which denotes a diarrhœa, within the space of twenty four hours. The other physician was for bleeding the patient, but deferred this remedy in expectation of the diarrhœa. The next day we were surprized to find the intermitting pulse had disappeared, and ourselves disappointed in our hopes of the diarrhœa. On examining the patient, she told us that, since our last visit, her menstrua had broke out, and still continued. We reasoned variously on this accident, but prescribed no remedies under so critical circumstances. After two days the intermission returned, and was followed by six or seven stools.

OBSERVATION

OBSERVATION XI. *Treatise, page 137.*

Dr. Christopher Solano, soon after his father's death, communicated an observation exactly like the foregoing one, in all its essential circumstances. The intermitting pulse appeared, in an acute fever, after two blood-lettings, and a purge; it ceased on the eruption of the menstua, and returned when these were over, and was this last time attended with a critical diarrhœa.

OBSERVATION XII. *Treatise, page 137.*

Among other observations concerning Solano's discovery, says a correspondent to Dr. Nihell, the following case, which we have yet in our hands, will, we hope, prove agreeable to you. A man of sixty years of age, fell ill of a double tertian ague, attended with the intermitting pulse, but with this particular circumstance, that it accompanied only one of the two distinct fits this ague was composed of; following regularly that with which it began, without ever once appearing in the other during the whole course of the ague. This intermission

mission of the pulse recurred at the third, fourth, and sixth pulsation: It was slight, and regularly brought with it a diarrhœa; by the means of which alone, the paroxysm it accompanied has almost entirely disappeared, and the other, which from the beginning was the more violent of the two, is now very much diminished.

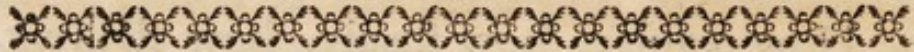
How regular, how steady, how striking, says Dr Nihell very justly, are the motions of nature in these three last observations!

The physician, who communicated the last observation, likewise informs him, that he has observed some cases of the intermitting pulse in which no diarrhœa appeared, but, in its stead, a great tumult and murmuring in the belly, with an expulsion of wind by the anus.

He communicates also an observation of a malignant inflammatory fever, then under cure, in which appeared successively three different crises, the one by sweat, the other by stool, and the third by an hæmorrhage of the  
I nose

nose, each previously indicated by its respective pulse, and the patient was better.

Of this latter kind there is a remarkable instance, in Dr. Nihell's treatise, which fell under the observation of another physician: And, of the former he mentions several, which occurred within his own\*.



### C H A P. III.

*Containing some observations on the intermitting pulse, which have occurred within my own practice, with a remarkable case communicated by a friend.*

#### O B S E R V A T I O N I.

**I**N September 1743, I was one evening sent for from HammerSmith, where I then practised, to a farmer in a neigh-

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\* For these observations, see Nihell's treatise, page 36 and 57; and art. III. on the rebounding pulse, page 11.

bouring

bouring village, about twenty-five years of age. I was informed, that he had been ill some days; that he had fallen into the Thames, and was, the day after, seized with a shivering, succeeded by great febrile heat, which was followed by partial irregular sweats; the usual steps, by which almost all acute fevers approach and proceed, and which are too often hastily determined to be an ague, especially if the original symptoms, ceasing for a time, return again. This was the case here; for, after the distemper had been treated, three or four days, with warm diaphoretics, and remissions and exacerbations had alternately succeeded each other, the cortex, without any previous evacuation, had been liberally administered. The remissions returned no more. The fever became continual. A sort of stupor succeeded, changing, by starts, into a slight delirium. In this situation was the patient, when I first saw him. His tongue also was white; some thirst attended, and his urine was high coloured. The pulse was full and labouring, and intermitted variously,

riously, from every third pulsation to the sixteenth; which were the extremes on either side, during the space of about half an hour that I sat feeling it. I enquired into the state of the intestines, and was informed, that they had been constipated, since the use of the cortex; and perceiving, when I felt, a tension of the belly, and the patient acquainting me, that he had some slight gripings; encouraged by these signs, and relying on the rules, laid down in Dr. Nihell's treatise, just then, from a late perusal, warm in my memory, \* ' That  
 ' the shorter the periods of pulsation were,  
 ' at which the critical pulses recur, the  
 ' nearer the evacuation presaged was at  
 ' hand;' I ventured to predict to the by-standers, that the patient would have some stools in a few hours time: And, that the event might neither be interrupted by, or the accomplishment charged on the

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\* See Rule II. on the rebounding pulse, made common to the other critical pulses, page 36. of this essay.

medicines I prescribed, I forbid the administration of any, till three or four in the morning, it being now about nine at night. But in order to assist nature in promoting the expected discharge, I directed that the patient should drink, by intervals, some small draughts of thin gruel or barley water.

At nine the next morning I visited him, and had the satisfaction of being informed, that, in about three hours after I left him the preceding night, he had a purging stool, and, in the space of two hours, three more; after which he slept near four hours. There remained now not the least intermission in the pulse, and the other symptoms were alleviated.

Had I now, excited by curiosity, attended altogether upon nature's proceedings, it is probable the intermission of the pulse would have returned again, and ceased on the recurring of the diarrhœa\*:

But,

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\* Instances of this alternate succession are to be found among the preceding observations in chap. II.  
and



But, considering that the patient was a plethoric young man; that no artificial evacuations had been used; and that nature, besides, had been, probably, interrupted in her endeavours towards a cure, by the improper, tho', without doubt, well intended administration of the cortex, I thought it neither prudent, nor just, to trust the cure to nature's management alone, on the credit of this partial crisis; which method, I apprehended, might, at least, prolong the illness. For these reasons, therefore, and agreeably to the practice I should have followed in this case, had no intermission of the pulse appeared, I directed bleeding to about the quantity of ten ounces, and prescribed some laxative medicines, with the purging waters. These remedies were continued a few days, and the patient recovered, without any return of the intermission of the pulse, or of his ri-

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and an intimation, that it is to be expected, is given in the VIIth article, on the rebounding pulse, made common to the other pulses; see page 38 of this essay,

gors,

gors, and without any occasion to have recourse to the cortex.

### OBSERVATION II.

A man about fifty years of age, short of stature, of a hale constitution, and ruddy complexion, was seized in the month of August 1744, with an acute fever, in the course of which, he had been three times bled, had taken some laxative, and other cooling remedies, with diluting drinks. The symptoms were pretty much abated, but still some fever remained—Visiting him one evening, about eight o' clock, I perceived an intermission in his pulse, recurring at different periods, from the sixth to the twentieth pulsation. I had not observed in him this pulse before, nor had his apothecary, who visited him more frequently than myself, taken any notice of it; so, probably, this was the first day of its appearance, as he was visited by us both every day. I prescribed a draught with half a drachm of pulv. rhei, to be taken immediately, and desired the apothecary, to let his assistant visit the patient, early in the morning, to observe the state of his pulse.

I visited him, myself, about nine next morning, and was informed by this person, that he saw him at six—That his pulse had, then, variable intermissions, from the third to the eighth pulsation, which it did not exceed: before this hour of six, from the time of taking the draught, with the pulv. rhei, the preceding night, he had not had one stool: But, between the hours of six and nine this morning, he had purged three times. His pulse, when now I felt it, was regular, and free from intermission. I persisted in the use of laxative remedies, intermingled with temperate cordials, which, I think, are necessary, while a cure is conducted by evacuations of this sort, as is, likewise, a somewhat generous diet, and the patient soon recovered, the intermission of the pulse returning no more. There happened, in this patient's case, at the latter part of his illness, an occurrence, which seems worth relating. I had prescribed one evening a purging infusion, for the next morning, of sena, tamarind, and manna. About six hours after this medicine was taken, I vi-

sited him, and found him in a profuse sweat, which he had gone into, within an hour after taking the purging draught, which had not moved him once by stool, tho' he was easily purged before ; nor did it operate in the least afterwards. Whether this sweat was occasioned by the medicine entering the lacteals, instead of stimulating the intestines, or was a critical sweat, which it might be fortunate that the purge did not interrupt, I do not take upon me to determine ; but the event seems somewhat extraordinary.

### OBSERVATION III.

A servant maid, about forty years of age, of a full make, and sanguine habit, was seized with a shivering, succeeded by great heat, and attended with violent pains in the back and loins, and some reachings to vomit. She had been ill about a week, when I first visited her. Her tongue was white, and her urine of a dark coffee colour, like that, sometimes made in a nephritis. Her pulse was much oppressed, and intermitted frequently, but at irregular periods.

K

Before

Before I saw her, the case had been treated with cordials, and a general warm regimen. Both bleeding, and purging, had been strictly avoided, from an opinion, as the family informed me, that her pains and reachings were hysterical, and her general distemper a nervous fever; a term, I doubt, frequently used without any settled meaning. I directed that ten ounces of blood should be taken away immediately, not terrified by the intermission and oppression of her pulse, which I judged were occasioned by a plentitude of the blood-vessels, as well as by a collection of impure humours in the first passages. The blood appeared instantly fizy. I changed the whole regimen, and prescribed some laxative remedies.

The next morning, finding that these medicines had not operated, and that the intermission of the pulse still continued, I directed a purging infusion of fol. senæ, et manna, to be taken immediately. In the evening I visited her again: the purging medicine, contrary to my expectation, had moved her near twenty times, and yet, as  
the

the patient herself informed me, she was in better spirits during the operation than before, and the intermission of the pulse totally disappeared. But as the purging medicine had operated so liberally, I thought it right to prescribe for her an anodyne, going to rest.

The next day the patient had no stool, and the pulse again intermitted. I directed a draught, with pulv. rhei gr. xxv, to be taken in the evening at bed-time. The next morning at eleven, I visited her. The medicine had moved her four times since the evening before, and the intermission of the pulse again disappeared. The day following, she complained of some sickness at her stomach, and the pulse again intermitted, irregularly. I prescribed an emetic of the pulv. ipecacuanhæ, and the draught, with pulv. rhei, every other night, for a few times. The emetic operated well; the pulv. rhei kept her body duly open. The intermission of the pulse returned no more; and she soon recovered a good state of health.

## OBSERVATION IV.

This case was attended constantly, from the 20th of April 1752, by Dr. Macaulay and myself; and by Dr. Hunter, and Mr. Torr, occasionally with us.

Mr. N. Page, steward of the British Lying-in Hospital, in Brownlow street, aged about sixty four years, and of a full habit of body, was attacked, in the beginning of February 1752, with rheumatic pains in his knee, and other parts, for which he was twice blooded, took some mercurial purges, and grew better. About the beginning of April following, he was much subject to faintness, and partial sweats, frequently recurring, and attended with a difficulty of breathing; which symptoms prevailed, at times, to about the 20th of that month, when he took cold, and his complaints were in general increased—On the 22d, ten ounces of blood were drawn from his arm, and his breathing became more free.

On

On Thursday the 23d at noon, we first observed a very irregular, interrupted pulse, with an intermission, for the most part, at every third or fourth pulsation, rarely passing beyond the eighth—The intermissions were also various, as to degree and duration; sometimes a compleat stroke was wanting; sometimes less. The vibrations of the artery, between the intermissions, were sometimes tremulous and undulating; sometimes distinct, full, and labouring; generally the latter. The sweats, with a remarkable faintness, likewise continued. He had this morning taken a purging infusion of fol. senæ, &c. which had yet operated but little. He was directed to take, between whiles, some volatile drops, if very faint. The succeeding night he passed unquietly.

On Friday, the 24th, at noon we visited him, and finding the intermission of the pulse, and the other symptoms, much the same, and that the purging medicine, taken  
yesterday,



yesterday, had operated no more, we prescribed the following cathartic pills.

R. pil. ex colocynth. cum aloe. ʒfs.  
merc. dulc. sublimat. gr. xij. M. f. pilulæ  
quinque, quamprimùm sumendæ.

We also directed that the following anodyne should be in readiness, and be taken, in case the pills should operate too much, and he should become faint.

R. aq. fontan. ʒifs. nuc. moschat. ʒiij.  
fyr. croc. ʒj. tinct. thebaic. gr. xx. M.

On Saturday, the 25th, at noon we again visited him, and were informed, that he did not take the purging pills, the day before, till four in the afternoon; that they did not begin to move him before ten at night, and, from that time, gave four stools in the space of two hours; after which he had a quiet night, sleeping well, and without the anodyne. Whether the intermission of the pulse left him after those stools, we do not know, as he could  
give

give no account of it himself. In the morning of this day, about seven, he arose, thinking himself well enough to go abroad about some business; but finding himself faint, he altered his intention; and, imagining the anodyne draught he had by him was intended only as a common cordial, he took about two thirds of it. The symptoms, when we saw him, at this our visit, were much the same as the day before, except being accompanied with flushing heats on the left side of his face, left leg, and left arm. The pulse intermitted alike in both arms, as it had all along done before. It was now full and labouring, and attended with some palpitations of the heart, which, though a symptom one might generally expect, we had not taken notice of before, nor have I observed it a constant attendant on the intermitting pulse.

Judging that the present symptoms might arise from plenitude and obstruction of the blood-vessels, as well as a saburra of the primæ viæ, as Dr. Nihell expresses it, we  
directed

directed that nine ounces of blood should be immediately taken from the arm, the rather too, as it was our design to order him an emetic. His pulse was freer while he was bleeding, till we had drawn off about seven ounces, when he grew faint. We desisted, and he soon revived. We prescribed the following emetic.

℞. Vin. ipecacuanhæ ℥iſs, oxymel. scillit. ℥iij. M. f. potio, cum regimine, quamprimùm sumenda.

This operated moderately. In the evening at seven, we found the intermission of the pulse very frequent, the flushing heats and faintness still returning by intervals—We prescribed as follows,

℞. pulv. rhei ℥ſs. sal. absynth. gr. v. aq. puræ ℥jſs nuc. moschat. ℥iij. fyr. caryoph. ℥j. M. f. haustus hora somni sumendus.

℞.

℞. aq. puræ ꝑvij. nuc. moschat. ꝑjss. conf.  
cardiac. ꝑjss. fyr. croc. ꝑij. M.—capiat  
cochl. iv. sexta quaque hora.

We also directed, that a sharp epispastic should be in readiness, to be applied in the night, if he should be faint, unquiet, or much troubled with the palpitations; but it was not applied.

When we visited him at noon next day, Sunday the 26th, we found him chearful, and his pulse free from intermission. We were informed by him, that he had taken the draught with pulv. rhei, the night before at eight o' clock; that at nine, he had one stool; probably a natural one, as the medicine could scarcely have acted so soon. Between the hours of nine and eleven, he had three or four stools more; then slept quietly a couple of hours; afterwards had about the same number of stools, by seven in the morning, but slept, in all, three or four hours in the intermediate time. We

L directed

directed that he should take ʒss. of pulv. rhei, next morning.

On Monday, the 27th, at noon, his pulse was free from intermission. He had rested well the preceding night, and had a plentiful diaphoresis. We ordered the pulv. rhei, for two or three successive mornings, which was accordingly taken. The intermission of the pulse returned several times, in the course of this week, but always ceased when he had stools.

On Saturday, May the 2d, at noon, finding the intermission of the pulse again upon him, we directed, that the emetic should be repeated. It was taken next morning, Sunday, the 3d; operated four times upwards, but purged downwards near twenty times, from what cause, we could not determine. In the evening he was faint, from the excess of the operation, but rested well the following night.

On Monday at noon, May the 4th, there was no intermission of the pulse, but, for  
some

some days following, it returned by intervals; the intermission, however, tho' frequent, was of shorter duration than usual, and the pulse retained a good degree of strength. He now complained, that he was troubled with acid eruptions, and that he, now and then, threw up some spoonfuls of acid phlegm; which complaints continuing upon him, we prescribed, on Thursday, May the 7th, the following absorbent mixture.

R. aq. puræ ꝑ̄xiv. nuc. moschat. ꝑ̄ij. test. ostreor. pp. ꝑ̄j. sach. alb. ꝑ̄iij. M.—Capiat cochl. quinque ter in die.

We also directed, that the pulv. rhei should be repeated every morning, for a few days. The acidities were gradually corrected; he had moderate stools, and the intermission of the pulse by degrees ceased. To strengthen his stomach, and habit in general, we prescribed the following electuary.

R. conf. ros. rub. cort. peruvian. pulv. ana ꝑ̄ss. fyr. carioph. q. s. f. elect—cujus, bis in die,  
L 2
sumat

sumat q. n. m. superbibendo mixt. absor-  
bent. præscript. cōchl. quinque.

He took this electuary a few days, and was soon restored to his usual good state of health.

The general directions given him concerning his diet, during this indisposition, were, that he might take any food of easy digestion, observing only a due moderation as to quantity.

The four preceding cases were put into the form, in which they now appear, in the year 1752, some few alterations only being made in the expression; it having been my design, about that time, to have published them. To the last of these cases, some farther observations are now to be added.

The history of this patient's case concluded about the middle of May 1752, with observing, that he soon recovered his  
usual

usual good state of health. But this re-establishment was not of long duration. The succeeding summer he had indeed no very capital complaints. The intermission of the pulse, however, frequently returned: But, though I kept no minutes of what accounts he, from time to time, gave, yet I well remember his declaring often, that he always found the intermissions less pressing, when he had an open belly. They, nevertheless, continued, and even became habitual, and were gradually attended with various other complaints, till his death, which happened in October 1757.

In 1756, about midsummer, he was discharged from his office of steward to the hospital, both on account of his ill state of health, and for other reasons, which rendered his stay there expensive and incommodious. For the last two or three years of his life, perhaps longer, he had indulged himself in very plentiful eating, of flesh chiefly, and that in the evenings, as well as at noon, and had not a little accustomed himself to drink spirituous liquors;



liquors; he was naturally too of a choleric disposition.

It happened one morning, about four o'clock, that he was seized with an acute pain of his stomach, to which he had been frequently subject. He arose, his wife got him something to eat, and he drank a glass of some spirituous liquor, his usual remedy on such occasions. He went to bed again, but could not rest; arose again at six o'clock, and took another glass. He had but barely got to bed again, when, conceiving some sudden disgust, he fell into a passion, stretched himself out, gave a sigh, and instantly expired.

His body was opened, three or four days after, by Dr. Hunter and his brother, Dr. Macaulay, and myself, being present. Here follow the observations, made on the dissection, as sent to me by Dr. Hunter.

*An*

*An account of the appearances in opening the  
body of Mr. Page.*

**I**T was not opened till the third or fourth day after he died, so that putrefaction was so far advanced, that the skin was become green, and the veins brown all round the neck, and the cellular membrane, in most places, become emphysematous.

The whole body, and especially the abdomen, was loaded with fat.

The gall-bladder contained two small gall-stones of the size of nutmegs, and a great number of small angular ones.

The lungs adhered considerably on the right side.

The heart was very large and flaccid. There was scarce any liquor pericardii; but no adhesion of the pericardium to the heart.

The

The heart was so tender in its substance, that it could be crushed with the fingers, like the liver or spleen. It contained scarce any blood, and all its valves were in a natural state.

There was no cord of coagulated blood, or polypus, either in the aorta, or in the pulmonary artery.

The aorta was remarkably empty, and to the extremity of the iliacs; for it was not traced farther. In all that course, its coats were very much diseased, and so tender, that they were easily torn with the fingers. Internally, and through their substance, they were chequered with white, and black, parts. The white were thickened, raised up on the inner surface of the artery, and seemed to be schirrous. The black were shrunk, and hollow internally, dry, and brittle in their substance, as if mortified.

The

The coats of the artery seemed, in general, to have lost a great part of their natural elasticity.

### OBSERVATION V.

November 15, 1756, in the afternoon, I was sent for to a young lady at Kensington, who had been ill six or seven days of a fever, which had seized her, after having been much fatigued with walking. Previously to this illness, she had been much subject to costiveness. Her first symptoms, as described to me, were a shivering, succeeded by great heat, acute pains of the head, and much thirst. She had been twice bled; had a blister applied to her shoulders, and taken some medicines from her apothecary.

The symptoms, at the time of my visit, were much oppression on the breast, and anxiety; she was very thirsty; her tongue was white and furred, and she complained of a putrid, bitterish taste

M in

in her mouth and throat; her pulse was quick, but low, and intermitted at irregular periods, between the third and the twentieth pulsation, which were the limits, on either side, during the space of near half an hour that I examined it; for a few days past, but chiefly in the night, she had had four or five costive stools.

As she was but of a tender habit of body, and somewhat subject to hysterical complaints on any reduction of her strength, I was diffident of administering purging remedies; nor did I judge it prudent to give any warm cardiacs, but thought it best to attend to the intimations of nature, without aiming at too much by medicines of efficacy: I therefore only prescribed for night, and the following morning, a bolus of pulv. rhei et nuc. mosch. torref. et coral. rub. cum syr. è mecon; and the julepum cretaceum.

On the 16th and 17th, the symptoms were much the same, as on the day I first visited her; she had, each night, about the same number of stools, but they were costive,

tive, and excluded with much pain, and the pulse, each day, intermitted in the same irregular manner as it had done before. On these days she took some temperate cordial remedies of conf. cardiac. et pulv. contrayerv. comp.

On the 17th, at eleven at night, I was sent for in haste to visit her. I found her in much hurry of spirits; her pulse intermitted almost continually, and was weak; and she breathed with difficulty; she had also this evening some slight hysterical symptoms. Induced by these appearances, I prescribed some warm alexipharmics with castor and volatiles, and directed the application of two blisters to her legs.

She passed the succeeding night unquietly, and had, the next day, much heat, with great anxiety, and oppression on her breast; her pulse was quick and low, and the intermission frequent. In the course of the last night she had five motions by stool. The last prescribed remedies were repeated,

On the 19th, the fever appeared much heightned; her thirst was increased; her tongue was dry, rough, and of a brownish colour; her pulse was still quick, but yet low, and intermitted in the same irregular manner, as it had hitherto done.

On weighing all these circumstances together, I began to judge, that these symptoms were the effect of oppression; and obstruction; that, consequently, I had been pursuing an improper method, in treating the distemper with stimulants; and that the increase of the fever was owing to their too liberal use; that, on the contrary, I ought to have followed the method, which nature seemed to point out, and which, according to my own doctrine, the intermitting pulse likewise indicated, viz. to have promoted the intestinal discharge by laxative glysters, or gentle purges. I therefore began gradually to change my method, omitted the alexipharmics with castor, &c. and directed some of a more  
temperate

temperate kind ; ordered an emollient glyster to be injected ; and softning, diluting drinks to be taken freely.

On my next day's visit, the 20th of November, I found the fever abated ; the tongue was moister and not so brown, nor was the thirst so great as on the day before, and she had rested better the last night, than for several preceding ; the glyster had produced a plentiful fæcal stool, which was succeeded by a few others, more laxative than they had hitherto been. The pulse still intermitted irregularly, but was, as to strength, much as it had been.

On the 22d I visited her again ; she had been restless, the two preceding nights, and had sweat somewhat profusely ; but, instead of being relieved by these sweats, she was uneasy while in them, and left languid when they were over ; they might therefore be judged to be the effects of heat, and symptomatical, rather than of concoction, and critical. She still continued to have stools in much the same number, in the space of  
twenty



twenty four hours, as before, but they were laxative, and her pulse intermitted as it had done, but it was fuller—I now totally laid aside all warm cordial medicines, determining to trust to the method, which nature seemed to be pursuing, with the interposition only of a few grains of pulv. rhei et nuc. mosch. torref. twice a day, and a soft emollient diet. From this time her complaints began to abate; the fever grew more moderate; the sweats were temperate; her stools continued, and were laxative, and did not exceed above three or four in a day and night—Some boils, which had broke forth, a few days past, in different parts of the body, matured, discharged, and healed up.

She went on in the above-mentioned method till the 27th, except that twenty grains of pulv. rhei were once administered, and produced three laxative motions, which much relieved her; the intermission of the pulse grew daily less frequent, and the pulse was fuller. On the day last mentioned, the menses appeared, and continued moderately  
about

about three days, the intermission of the pulse, of which, till this day, there were some remains, now totally ceased, and returned no more, and the intestinal discharge also gradually abated.

To recruit her strength, I directed for her ordinary drink, a decoction of rice, and hartshorn shavings, with one third part of fresh milk, and that she might eat any light animal food she liked. To this regimen was added, about a week after, a decoction of cortex, of which she took a wine glass twice a day; and she was, by degrees, restored to a good state of health.

#### OBSERVATION VI.

May 31, 1757, I was called, about ten at night, to a tradesman in Covent Garden, who had been ill about eight days.

I found him restless, thirsty, and complaining of great pains in his left shoulder, which, by intervals, darted round to each side. His pulse was quick, full, and remarkably tense, and intermitted at almost every

every period, between the third and the twentieth pulsation. From this tension of the pulse, I was almost induced to have had him blooded, but it being late at night, and hoping too, that laxative medicines would relieve him, I postponed the bleeding, and directed a solution of ℥vj. of mann. with ℥ss. of ol. amygd. d. to be taken every fourth hour till morning.

I visited him next day, June 1, at ten in the morning. I was informed that he had taken but one of the laxative draughts, at eleven the night preceding; that he had been restless, had much oppression on his breast, and anxiety, till about three in the morning, when he vomited once, and purged twice downwards, the stools plentiful and fæcal; after which he slept near three hours. He complained this morning of the pain in his shoulder, and about his side, and his pulse intermitted, in much the same manner as when I saw him the night before, but it was not so full, and the tension was abated.

When

When I perceived this tension, at my first visit, it did not occur to my mind, that Solano had made it, when it accompanied the intermission, a sign of a critical vomiting \* superadded to the diarrhœa—Had this patient vomited soon after taking the draught with manna et ol. amygd. one might have suspected this medicine to have caused that vomiting; but it did not happen till four hours after; probably, was, therefore, an effort of nature: Nor can one, I think, well determine, whether the stools he had were the effect of the medicine, or, with the vomiting, critical motions, according to Solano's doctrine; it seems to have been rather the latter; for one should not have expected, at another time, that ʒvj. of manna with ʒss. of ol. amygd. would have so soon produced two plentiful stools. But, from whatever cause these proceeded, I hoped the stools might be continued, by giving him the pulv. rhei in small doses.

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\* See page 34 of this essay. Art. III.

I therefore prescribed some draughts with  
 conf. cardiac. ℥j. pulv. rhei gr. viij. to be  
 taken every sixth hour—All this day, and  
 the succeeding night, was spent with much  
 inquietude.

June 2, at ten in the morning, I visited  
 him; found the intermission of the pulse  
 still continuing, and the pains of his shoul-  
 der and side remaining. He had had no  
 stool since those at three in the morning,  
 June 1st. I now prescribed the following  
 draught.

℞. pulv. rhei ℥ij. tart. solub. ʒj. aq. puræ  
 ʒjss. nuc. mosch. ʒij. syr. carioph. ʒj. f. hau-  
 stus, quamprimùm sumendus.

At six in the evening, I visited him, and  
 was informed, that, since I saw him in the  
 morning, he had had three purging stools.  
 His pulse was now regular, nor did I per-  
 ceive in 120 pulsations a single intermission:  
 I stopped a few minutes, and felt his pulse  
 again to 60, without finding any inter-  
 mission. His apothecary coming in at this  
 time,

time, I desired him to feel the pulse, and he went on to 70 pulsations, without one intermission. I now prescribed some draughts with conf. cardiac. pulv. contrayerv. et tinct. thebaic. gtt. vj. to be taken every sixth hour, and directed him to drink, by intervals, some draughts of thin white wine whey, in hopes of promoting, after the purging, a gentle diaphoresis, and thereby discussing some flatulent, or spasmodic pains he complained of, in his stomach and bowels.

June 3, at ten in the morning, I visited him, and was informed by his apothecary, that at ten the night preceding, his pulse intermitted at different periods, between the 20th and 37th pulsation. He had had no stool in the night, but was much griped, and had expelled a great deal of wind. Probably, the last prescribed remedy had checked the stools. But, he had sweated but little, and had been restless. His pulse, however, this morning was free from intermission. I directed that the draught with pulv. rhei,

&c. should be taken immediately, and the diaphoretic draughts repeated.

June 4th, at ten o' clock, I found his pulse still free from intermission. He had yesterday two purging stools, and had slept in the evening about four hours, but had not much rest in the night, nor had scarcely any sweats. He complained still of pains just below the shoulder blade, and round to the breast. He had pains too in his bowels, which he said always abated when he expelled wind. In the night too he had been much troubled with the heart-burn.

I now prescribed the following draught.

R. aq. menth. simpl. et piperit. ana ʒvj.  
pulv. test. ostreor. pp. ℥ij. sp. lavend. comp.  
gt. xv. volat. aromat. gt. xx. syr. bals. ʒj. M.  
f. haustus sexta quaque hora sumendus.  
And the draught with the pulv. rhei for  
next morning.

June 5, at eleven in the morning, I found his pulse regular, and free from intermission.

termiffion. The opening draught had been taken at fix this morning, and he had already purged twice. He had not fleep much in the night, but had lain pretty quiet, and fweat a little, and was much freer from his pains, both of the foulder and bowels. He faid he had expelled a great deal of wind, foon after taking each carminative draught, which were, therefore, continued.

I vifited him next day, found him free from the intermiffion of the pulse, and his general fymptoms abated. I directed, that the draught with pulv. rhei, &c. fhould be repeated, a few times, on the alternate or third days, and, as there might be occafion, the carminative draughts. His belly was thus kept moderately open. The pains of his foulder, fide, and bowels, in a few days, entirely left him. He remained free from the intermiffions of the pulse, and, in a fhort time, recovered his ftrength, and a general good ftate of health.



## OBSERVATION VII.

August 23, 1757, I was sent for, to a lady in queen-square, Westminster. She had been ill of a fever about five days, attended with head-ach, and shifting pains about her breast, side, and loins. She had been once blooded, and taken some mild diaphoretic remedies—She had, for two days past, had four or five laxative stools each day, but not considerable in quantity.

Her symptoms, when now I visited her, were, some pains and weight on her head, slight pains in her side, and gripings in her bowels. Her tongue was white, but she complained but little of thirst. Her pulse was quick, but of a moderate strength, and intermitted, at different periods, between the third and the thirtieth pulsation.

She was of a thin habit of body, and, in general, of a tender constitution. I judged, therefore, that, as on one hand I ought not absolutely to stop this diarrhœa,  
which

which might be only a kind endeavour of nature to throw off the peccant humours, the confining of which might heighten the fever; so, on the other hand, I apprehended it would not be right, in the view of following nature, to use purging remedies, which her strength might not be able to support.

On the first day of my visiting, therefore, I directed some boles of pulv. contrayervæ comp. conf. cardiac. et pulv. rhei parùm tost.

The next day, the 24th, I found her pulse still intermitting, and the diarrhœa continued. But as there appeared no extraordinary weakness consequent thereupon, nor indeed, through the whole case any threatening febrile symptoms, which were probably kept down by this very diarrhœa, I suffered it to go on, prescribing only remedies of a middle kind, neither too warming or restraining, nor too refrigerating or evacuant—The same medium  
was

was likewise observed in the regulation of her diet.

I proceeded in this method of treatment till the 3d of September, the diarrhœa still continuing in much the same manner, as at the first of my visiting, but without any other alarming symptoms; and I had the satisfaction of finding her original complaints gradually to go off, the intermission of the pulse to become less frequent; and, by the day last mentioned, entirely to cease, as did the diarrhœa.

I prescribed now a decoction of the cortex, to be taken twice a day, and the asses milk, and country air. She went, for a few weeks, a small distance out of town, and soon recovered a better state of health than she had enjoyed for some years past.

I have mentioned, at the close of the fourth observation, page 72 of this essay, that those, which had preceded, were drawn up with an intention to have had them

published in the Year 1752. The following case was at that time communicated to me, by an ingenious friend, Dr. Layard, of Huntingdon ; and had the former been published, this would have been added to them. The letter, and the short remarks I had subjoined to it, stand now in the form in which they were then given.

*S I R,*

**I** Received your favour of the 23d instant ; and that I might, in the speediest manner, comply with your desire, I have subjoined as clear and circumstantial a relation of the case I mentioned to you, when in town, as I could collect, both from memory and written observation. Mr. Desborough, surgeon and apothecary at Bugden, four miles from hence, the patient, and many in the family, can testify the symptoms hereafter described.

May the 7th, 1752, a servant maid in the family of a person of distinction, a few miles from this place, about twenty-five  
 O years

years of age, of a plethoric constitution, but general good habit of body, walking on the wet grass at the time of her menses, was suddenly seized with violent pains of the cholic, insomuch that she was obliged to sit down on the grass for some time, before she could recover sufficiently to return into the house. From this time the menses ceased.

I was sent for to her May the 20th; she had a strong, quick pulse, difficulty in breathing, rigors, pains in the abdomen, chiefly in the hypogastric region, attended with spasmodic affections of the nerves. I had her bled copiously in the foot; a laxative glyster, deobstruents, and opiates, were administered.

May the 22d, the fever became continual; she complained of a violent pain in the right hypogastrium, where a tumour, tho' not prominent, was plainly to be felt, with great heat and pulsation, and attended with rigors and nausea. She was again bled. I directed the saline mixture

with tinct. castor et sp. lavend. and a bladder, half full of warm water, to be kept constantly on the affected part.

Her pains, nevertheless, continued with great violence, attended with convulsive motions of the uterus, and spasmodic contractions of the tendons: These symptoms affected her from eleven at night, till five in the morning, during which time she was almost continually screaming out, from the extremity of the pain.

On the 29th, in the evening, her pulse intermitted at every eighth and tenth pulsation, during the space of a whole diastole, with a tension of the artery, and, in the night, a suppression of urine came on.

On the 30th, she vomited a large quantity of bile. The pulse this day intermitted at every fifth or sixth pulsation, but was softer than on the preceding day.

On the 31st, the pulse still continued to intermit, as on the day before. To procure a  
 O 2 stool,

stool, and to alleviate the suppression of urine, which still continued, a glyster was injected—In the night a diarrhœa came on, when a large quantity of *pus* was discharged in about twelve stools, and in a great deal of urine. A profuse sweat immediately ensued.

June 1st, I found the pulse quite regular. Some matter was daily discharged by urine, during the space of a week ; and, with the use of suitable medicines and regimen, she gradually grew better, and is now perfectly recovered.

In this case it evidently appears, that an abscess must have been formed in some part of the right hypogastrium, the matter of which being absorbed into the blood, was discharged, by the assistance of nature, through the common emunctories.

How far these remarks may correspond with Dr. Solano's, Dr. Nihell's, or your own, I know not. I have not time at present to compare them with the former,  
and

and you will be the best able to judge of the latter. Should the observation afford you any satisfaction, let me have that of assuring you, that,

Huntingdon,  
July 26, 1752.

I am, &c.

D. P. Layard.

*Remarks on this observation.*

**T**HIS case manifestly evinces the strong tendencies of nature in acute diseases, towards a crisis, and much confirms Solano's observations concerning the intermitting pulse, as a sign of a critical diarrhœa. The hardness and softness of the pulse, succeeded by the bilious vomiting and the excretion of the *pus* by urine correspond, in some measure, with the following rules\*. 'A  
' tension of the artery, joined to the inter-  
' mitting pulse, is a certain sign of a critical  
' vomiting superadded to the diarrhœa—A  
' softness of the artery, joined with the in-  
' termiffion, is a certain sign of a crisis by  
' urine with the diarrhœa.'

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\* See the present essay, page 34 Rule III; page 35 Rule VI.



Van Swieten, in his commentary,\* de abscessu, remarks, that we are taught by fundry observations, that matter, formed in the cavities of the body, may be re-absorbed thro' the little mouths of the veins, and mingled with the blood; and quotes a singular case, from Belloste's chirurgie d'hospital, of a nobleman wounded in battle with a leaden bullet. The os cubiti was fractured; a continual fever ensued, attended with many severe symptoms, and a large abscess was formed about the part. When the surgeons were preparing to open this abscess, now compleatly matured, the patient was taken with a diarrhœa. The tumour immediately subsided, and a large quantity of *pus* was found excreted in the stools—Fresh matter was again formed in the part, and again evacuated by stool; and in this manner was this dangerous wound healed.

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\* Tom. I. § 406. pag. 706.



## C H A P. IV.

*Containing some practical Remarks on the  
Whole.*

**I**T appears, from the several examples which Dr. Nihell has produced from Solano, concerning the three pulses mentioned by him, to have been the principal scope of Solano's observations, to establish them as significative of particular crises.

His declarations concerning the intermitting pulse, to which I confine myself, are explicit on this point. Nor is there to be found, in Dr. Nihell's treatise, except, perhaps, by implication, any intention of Solano's, to extend his doctrines concerning this pulse any further to practice, than in establishing it as a SIGN of a diarrhœa.

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That

That he was supported in his general deductions by strong facts, is manifest; but that they are too extensive, Dr. Nihell declares as his opinion, in several parts of his treatise; in the quotation particularly, which we have given at the end of the first chapter of this essay.

In a chapter, containing the result of his own observations on this pulse, he thus expresses himself\*.

‘ Of *twenty-three* persons, in whom I  
 ‘ have observed the intermitting pulse, *one*  
 ‘ only had the intermission regular and  
 ‘ permanent; and, in this person, the di-  
 ‘ arrhœa answered my expectation, ac-  
 ‘ cording to the rules laid down by Dr.  
 ‘ Solano.

‘ In the other *twenty-two*, the inter-  
 ‘ mission of the pulse was irregular and  
 ‘ shifting; and tho’ the diarrhœa, thereby  
 ‘ signified, could not, according to the  
 ‘ doctor, be positively depended on, yet

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\* Treatise, page 56.

‘ *eighteen* of them were pretty regularly  
 ‘ attended with one or more of the fol-  
 ‘ lowing symptoms ; gripings, rumbling  
 ‘ in the intestines, the piles, looseness, and,  
 ‘ in a few, an extraordinary costiveness,  
 ‘ or an indigestion.

‘ In two of the remaining *five* cases,  
 ‘ the correspondence of these symptoms  
 ‘ with the intermission of the pulse, was  
 ‘ more irregular and equivocal ; in a *third*,  
 ‘ insignificant ; yet, with this remarkable  
 ‘ circumstance, that after the patient was  
 ‘ purged, the intermission gradually dimi-  
 ‘ nished and disappeared.

‘ Lastly, of the whole number, the *two*  
 ‘ remaining cases, of the five mentioned  
 ‘ in the last paragraph, are the only which  
 ‘ were free from any of the above-men-  
 ‘ tioned symptoms.’

But though this account of things should  
 seem to lessen the weight of Solano’s ob-  
 servations, by shewing their insufficiency

to authorise an absolute prognostic in all cases; yet, irregular as this pulse often is, and wanting the conditions which his rules make requisite for such prognostic, it nevertheless appears, even from this last quotation, as well as from many of the cases before recited, that this pulse is still to be considered, in general, as a sign of a diarrhœa; at least, of some tendencies towards a diarrhœa. However, as it is not always to be depended upon as so certain a token of this crisis, as Solano apprehended it was; it will be making a right application of his discoveries relating to this pulse, to endeavour, while we allow them their due weight, to extend them to other practical uses, than what he appears to have proposed from them.

Now, the doctrines which would seem naturally to result from what has preceded, though they were only offered as a matter of speculation, and we had no experience to support them, are the following:

1. That

1. That the intermitting pulse, in acute diseases, the diarrhœa not being present, indicates the use of purging remedies.

2. That when the diarrhœa is present, and is accompanied by the intermitting pulse, the appearance of this symptom prohibits the administration of astringent remedies.

3. If this symptom, the intermitting pulse, has been usually found to cease, on the access or continuance of a natural diarrhœa, or one procured by art; and if, with its disappearance, a train of other threatening symptoms have, likewise, ceased, and the patient has recovered of the general distemper, by means of this diarrhœa; THAT then it may, from analogy, be inferred, that a disease, attended with the same symptoms, arising from the same cause, though not accompanied by the intermitting pulse, may be expected to yield to the same method of cure.

These propositions have a manifest correspondence with one another. They will, nevertheless, require a somewhat separate consideration.

And FIRST—It has been observed, that the principal point which Solano appeared to have in view, was the establishing the intermitting pulse as the sign of a critical diarrhœa, and that there was not to be found, in Dr. Nihell's treatise, any direct profession of his having intended any thing beyond this.

There is, indeed, a general intimation given by Dr. Nihell, which, though it does not amount, even in him, to an immediate recommendation of the use of purging remedies, under this pulse, yet it does seem to countenance the practice.

‘ As my observations ’ (says he, meaning, I suppose, those last quoted) ‘ on the  
 ‘ intermitting pulse are few, and tolerably  
 ‘ uniform, they require no recapitulation  
 ‘ here. The reader must retain a fresh

' idea of the looseness, and symptoms with  
 ' which it was attended. In confirmation  
 ' of this connexion between the inter-  
 ' mitting pulse and a diarrhœa, it may be  
 ' proper to add here, what I have been  
 ' assured by Mons. Ferren, an eminent  
 ' physician of Paris, viz. that he has ob-  
 ' served this pulse so regular a symptom of  
 ' a saburra of the primæ viæ, that, on  
 ' purging the patient, the intermission dis-  
 ' appears; and that, from his repeated  
 ' experience thereof, he looks on the in-  
 ' termitting pulse, in acute fevers, as a  
 ' real indication for purging. An obser-  
 ' vation very analogous to Dr. Solano's  
 ' and mine. This hint may be further  
 ' corroborated by a known practical re-  
 ' mark, which is, That the intermitting  
 ' pulse is no uncommon symptom of  
 ' worms in the primæ viæ: Be the cause  
 ' of this what it will, the fact is mani-  
 ' festly to my purpose.\*

It may be observed, that Dr. Nihell, in  
 this place, speaks with caution. He does

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\* Treatise, page 63.



not directly, and from his own experience, propose the practice of purging, as indicated by this pulse, but only mentions that he has been assured of its usefulness by *Monf. Ferren*. The observation, indeed, he says, is very analogous to *Dr. Solano's* and his own. I have read over *Dr. Nihell's* treatise very often; two or three times purely to find out what observation of theirs was analogous to this of *Monf. Ferren's*; but I do not discover such a one, expressly delivered, as his is. From a few instances in their practice, may, indeed, be implied their approbation of the use of purging remedies, as an assistant to nature, but not as a professed method of cure; for example,

In one observation, just quoted, \* among those which *Dr. Nihell* delivers, as the result of his own experience on this pulse, he speaks of the correspondence between the symptoms and the intermission as insignificant; yet, with this remarkable cir-

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\* See page 105 of this essay.

cumstance,

cumstance, That after the patient was purged, the intermission gradually diminished and disappeared.

In the third case, recited in Chap. II. page 44 of this essay; after the success of a prediction from the intermitting pulse, Solano next morning perceiving some remains of the intermission, ordered a clyster to facilitate the motion of the belly: this was followed by a laudable evacuation, whereon the intermission of the pulse, and the fever, ceased.

In the seventh case, in the same chapter, page 49, laxative and other medicines were ordered, to take off the effects of some restraining applications, which had caused the intermission of the pulse to cease; and the event was, the return of the intermission, which was succeeded by a diarrhoea; but, as the physician observes, who relates this case, the crisis was not compleat; on which he ordered a slight decoction of tamarinds, which produced two moderate stools. The event, however, was unsuccessful. Had laxative remedies

medies been administered, on the first appearance of the intermission, joined with suitable restoratives, both in diet and medicine, a contrary event had, perhaps, ensued.

The case which Dr. Nihell quotes, in the following words, from Wierus \*, is much in favour of our doctrine. ‘ A nobleman fell into what the author calls a malignant fever, which was from the beginning attended with several evident signs of a saburra of the primæ viæ, bilious vomitings, and eructations, together with an unequal pulse. On the sixth day the fæces alvinæ were very bilious and fœtid: the following night brought on a violent exacerbation of all the symptoms; and the seventh day, in the morning, the pulse began to intermit at every third pulsation: but notwithstanding the appearance of a symptom so generally pronounced mortal, by the writers in physic, WIERUS, from the favorable

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\* Nihell's treatise, page 47.

' state of all the other signs, prognosticated  
 ' the patient's recovery; and observing him  
 ' very uneasy at the stomach, and fre-  
 ' quently puking, he ordered him for the  
 ' next day, viz. the eighth, a purge, which  
 ' abundantly wrought, and entirely relieved  
 ' him—The intermission disappeared on  
 ' the ninth, and the patient remained free  
 ' from his complaints.'

Dr. Nihell, on this case, makes some  
 remarks, which appear intended, both to  
 strengthen Solano's observations on this  
 pulse, and to shew the regular attempts of  
 nature in bringing about the critical revo-  
 lutions on their proper days. But as the  
 disease and the intermission of the pulse  
 were jointly removed\*, as is his own ex-  
 pression, by the purge on the eighth day;  
 this event gives no small weight, in gene-  
 ral, to the doctrine I am advancing concer-  
 ning purging, and justifies this particular  
 question; whether, if this practice had been  
 instituted earlier, the disease might not have  
 been cured as effectually by anticipating  
 those critical efforts?

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\* Nihell's treatise, page 49.

The ninth case, in chap. 11 of this essay, page 53, furnishes another instance which fell under Dr. Nihell's own observation; in which Solano's observations on this pulse, as the sign of a diarrhœa, is strongly supported, tho' the intermission was not so regular, as his rules required: But the same case pleads as strongly too in favour of the practice of purging. ' The pulse, says Dr. Nihell, continued in much the same irregular state \* for the three days following, with a slight looseness, and efforts to go to stool, wind, and rumbling in the guts by intervals—The patient was purged the 4th day, and vomited a worm five inches long. The intermissions and stools became thereon yet less frequent, and without any efforts, wind or rumbling in the intestines, till the 22d of Oct. &c. &c.'—Does not the same kind of question, as was hinted on the last case, naturally offer itself here; viz. Might not the continuance of purging re-  
medies

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\* See the context, in the case itself.

medies have removed the intermission totally, and have shortned this case?

But Dr. Nihell seems, in general, to be of a contrary opinion, as to the efficacy of 'MEDICINAL HELPS'. In his chapter on crises, whose chief tendency is to establish the superior sufficiency of nature, in curing diseases, above any attempts of art, he thus expresses himself; 'THESE indeed have often produced extraordinary effects, and visibly given a favourable turn to desperate cases, but their efficacy is limited to this, and perhaps has not once extended to an immediate and perfect removal of a smart acute fever \*.'

I am well convinced, from the candour every where apparent through Dr. Nihell's treatise, that the single view he had in all his observations, and in his reasonings upon them, was to discover the surest and most easy methods of restoring health to the diseased; which ought, with every one, to

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\* Treatise, page 98.

be the primary object in his exercise of the ART. I profess the same benevolent view, yet I cannot, altogether, agree with him in sentiments on this head. I do not deny the power of nature, nor am I an advocate for the infallibility of art. The power of nature is, to be sure, great, and often extends even to the repairing the errors of art. But nature too is, frequently, insufficient; may be assisted in her right endeavours, and sometimes controuled in wrong. Instances of both kinds occur among the observations in Dr. Nihell's treatise. The first observation of my own, in the 3d chapter of this essay, page 58 et seq. pretty clearly evinces the efficacy of medicinal helps. Scarcely any crisis of nature could have more speedily, or effectually, removed the danger of an acute fever; for the spontaneous diarrhœa, which I ventured to prognosticate, did but alleviate the symptoms. Some of the subsequent cases prove the same position; nor would it be difficult to produce instances in illustration of this matter, where these critical signs have not been at all concerned. The cure of a true  
inflammatory

inflammatory pleurisy, by liberal venæ-section, is certainly to be considered, as principally the act of medicine; but when the inflammation, thro' the timely use of this blood-letting, joined with other suitable remedies, is so far resolved, as that the danger of the disease is removed, should nature, by proper signs, point out her sufficiency to perform the rest of the cure, no prudent physician, to use Dr. Nihell's emphatical phrase, would be 'so incontinent of prescription' as to hazard the putting her out of her course, by the continuance of these Herculean remedies, as the doctor calls them, tho' he might still consistently persevere in assisting her salutary endeavours.

' But the efficacy of medicinal helps, the doctor observes, has not, perhaps, once extended to an immediate and perfect removal of a smart acute fever.

If the terms immediate and perfect are taken in their strictest sense, few cases will, I apprehend, be found instantaneously, and compleatly, cured, either by nature or art.

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When such do occur, the disease is slight, and removed by a slight crisis, or remedies of no extraordinary efficacy; or, it is important and vehement, and the natural crisis strong; or the artificial helps bold, and their effects proportionate; and, if the separate instances were fairly drawn out, I am of opinion, with all the deference due to nature, that the power of art would, in many cases at least, be found to emulate, if not exceed, her strongest efforts and successes.

‘ But granting our remedies,’ says the doctor,\* ‘ an efficacy equal to that of a good crisis, they should only come into play, when nature does not manifestly and regularly proceed to such a crisis. For when she does, they must be held useless, if not immediately dangerous: useless, because, at best, they are only supposed of equal efficacy with a good crisis; dangerous, because they forcibly alter or weaken the general tendencies of the body, and disorder the whole machine, to shift it to another determination, &c. &c.’

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\* Treatise, page 99.

I design no light, or un-candid, comment on any thing, so deserving and well-intending a writer has offered. But if the sentiment of this paragraph was to be reversed, it might be made to speak, perhaps as favourably, in behalf of the efficacy of remedies instituted by art, as of the critical efforts of nature. With respect to the practice of purging under the intermitting pulse, it certainly might; for it is by no means an useless, or dangerous, practice; nor does it forcibly alter or weaken the general tendencies of the body; nor disorder the whole machine, to shift it to another determination; but corresponds with those tendencies, relieves the whole machine, and pursues the same determination as nature does, and, perhaps, with less uncertainty.

But I have no occasion to dwell on this point: What I have already offered, has been with a view of giving to nature as just applause, for the tendencies of her operations, as to art, for the effects of her

her intentions: and, however a manner of expressing, or not accurately ascertaining our thoughts, may seem to constitute a difference of opinion, I am convinced, that Dr. Nihell's sentiments, and my own, are not, in reality, very remote from each other; as I think will appear from the following paragraph, which, tho' long, I must beg leave to transcribe, as it seems to sum up the whole argument, in a manner, which I am very willing to subscribe to myself, and doubt not most other readers likewise will.

‘ What I have, says he, hitherto alledged’  
 (viz. in the foregoing pages of his chapter on  
 crises) ‘ does by no means exclude a vigorous  
 ‘ method of cure. It indeed requires, in a  
 ‘ physician, a nice and continual attention  
 ‘ to all the minute circumstances of critical  
 ‘ signs, but claims his inaction then only,  
 ‘ when by these he foresees a future happy  
 ‘ crisis. He is, in the beginning of an  
 ‘ acute fever, entirely at liberty to use the  
 ‘ most efficacious means our art suggests, to  
 ‘ prevent the consequences of an inflama-  
 ‘ tion, a plethora, or a saburra of the primæ  
 viæ.

' viæ. This, according to reason and ex-  
 ' perience, is the time of a brisk and vigo-  
 ' rous action, before the distemper takes  
 ' root, and the strength of the patient, so  
 ' necessary to bear the effort of remedies,  
 ' is impaired. This precious occasion, on  
 ' which almost entirely depends the happy  
 ' or unhappy event of acute diseases, lies as  
 ' open, at such a distance from the critical  
 ' periods of the distemper, to the observer  
 ' of crises, as to the physician who neglects  
 ' them; nay, the former will think himself  
 ' fortunate, if at this time he can so master  
 ' the morbid causes, as to prevent the ne-  
 ' cessity of a crisis, and bring the dis-  
 ' temper to a spontaneous resolution. In  
 ' the riper periods of the disease he is under  
 ' no restraint, besides that which arises  
 ' from an exact vigilance, in observing all  
 ' the circumstances of the disorder, a nice  
 ' attention in distinguishing thereby such  
 ' revolutions in the patient, as are determi-  
 ' natively critical and salutary, from such  
 ' as are noxious; and lastly, a prudent  
 ' abstinence from all powerful remedies  
 ' under the prevalence of the former. This

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' is

' is no more than the indispensable duty of  
 ' every physician, while nature is acknow-  
 ' ledged to have any share in the cure of  
 ' distempers: and I scarce believe that any  
 ' gentleman of the faculty would be  
 ' thought so incontinent of prescription, as  
 ' to complain of that inaction which is  
 ' pointed out to him by the self-sufficiency  
 ' of nature. In all other turns of the dis-  
 ' temper, such, I mean, as he finds purely  
 ' morbid, of evil tendency, or, tho' salutary  
 ' in themselves, yet unequal to the great-  
 ' ness of the disease, he may, and should,  
 ' exert himself, with all the vigour, and  
 ' all the powers, of the Herculean method.  
 ' This, in reality, seems the medium  
 ' between that absurd, pusillanimous prac-  
 ' tice, which, from an injudicious appre-  
 ' hension of disturbing the order of nature,  
 ' and its critical tendencies, weakly aban-  
 ' dons the patient, to the violence of the  
 ' distemper, and that precipitate method  
 ' which confounds the operations of nature  
 ' with the more morbid symptoms, and,  
 ' by striking at either indistinctly, perverts  
 ' the regular course of distempers, produces  
 ' new

‘ new morbid complications, and destroys  
 ‘ the most natural, and most efficacious  
 ‘ means of recovery.’\*

From what has been said, under this first head, concerning the good effects of purging remedies, in the several instances relating to the intermitting pulse, which we have quoted from Dr. Nihell’s treatise; in those of a similar nature, recited in the third chapter of this essay, as having occurred within my own practice; we may, I think, fairly conclude, for it is totally a matter of experience, that when this pulse happens in acute diseases, every as favourable consequence may be expected to ensue from a judicious exhibition of purging remedies, as could arise from attending upon nature, and, in expectation of a diarrhœa, leaving her to conduct the cure.

This seems the least that may be urged in their favour; but, I own, it appears to me, that the inference may be much farther extended, and that, by an early application of these remedies, not only the inter-

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mitting

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\* Treatise, page 100, et seq.

mitting pulse may be removed, but the disease shortened, and many threatening symptoms anticipated—Past experience has confirmed me in this opinion, and I shall esteem it my duty, to persist in the practice, till the future experience, either of my own, or others, shall induce me to change it for a better.

Our second proposition was, That when a diarrhœa is present, and is accompanied by the intermitting pulse, the appearance of this symptom prohibits, generally, the use of astringent remedies.

This inference so naturally arises from what has preceded, that, was not the practice supported by experience, as several cases in this essay evince it is\*, the arguments for purging, or for suffering a diarrhœa, predicted from its sign, to go on, would as necessarily conclude the propriety of abstaining from restringents in

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\* See particularly obs. vii. chap. iii. page 94.

the present circumstance: For, in one case, the diarrhœa should be suffered to proceed, if nature is to be trusted, till the salutary event is produced: In the other purging remedies, which create an artificial diarrhœa, are to be interposed, till the purpose of their exhibition is answered, unless weakness, or other symptoms, indicate the contrary.

So, when on first visiting a patient, we find a diarrhœa already present, and accompanied by the intermitting pulse; tho' we cannot, perhaps, get information, when this pulse first appeared, or, whether the diarrhœa was preceded by this sign; yet we might, from our observation on other cases, conclude, that this diarrhœa is the cure attempted by nature, and, if the patient has strength to bear it, it should be equally suffered to go on, as in the former instances—And thus every doctrine, that may be applied to a diarrhœa brought on, either by nature, or art, and continued, will, as reasonably, be applicable to the present case, and plead the prohibition of astringents.

We



We proceed now to the consideration of our third and last proposition, viz. If this symptom, the intermitting pulse, has been usually found to cease, on the access or continuance of a natural diarrhœa, or one procured by art, and if, with its disappearance, a train of other threatening symptoms have, likewise, ceased, and the patient has recovered of the general distemper, by means of this diarrhœa; **THAT** then it may, from analogy, be inferred, that a disease, attended with the same symptoms, proceeding from the same cause, tho' not accompanied by the intermitting pulse, may be expected to yield to the same method of cure.

This proposition, like the former, is offered by way of inference; but it is not to be taken in a mere speculative light, and as an inference only; like those, it stands supported by sufficient experience from my own cases, and even from Solano's and Nihell's, either expressly, or by implication;

implication ; for the narrations of their facts are not always circumstantial, as to the symptoms which appeared in each case.

In the first case of chap. II. page 41 of this essay, the diarrhœa happened, which Solano had predicted from the intermitting pulse, and was preceded, as he had pronounced it would, by such agonies, as alarmed the family, and made them think the patient was really dying, which circumstance implies the disease to have been acute.

In the second case, page 42, the intermitting pulse was first observed in the exacerbation of a fever : its precise symptoms are not mentioned, but may be conceived, as the case was a fever. But, whatever they were, they were removed by the diarrhœa.

In the third observation, page 43, the patient is said to lie sick of a fever and great uneasiness. Solano, from the intermitting pulse, prognosticated that a violent com-  
 3 motion

motion of the belly would soon ensue; within two hours it happened, and was excessive: after a faecal stool the patient grew easy; and after a laudable evacuation, promoted by a glyster, the fever, whose symptoms are not particularized, ceased with the intermission of the pulse.

The fourth observation, page 44, exhibits the case of an old lady, of a cachectic habit of body, labouring under cares and uneasiness, and from an hypochondriac affection falling into a malignant fever, with a vomiting up of her nourishment and remedies, a suppression of urine, and a striction of the belly. She had an intermitting pulse, which was succeeded by a diarrhœa, and the ejection of a worm: But it is not said, whether she recovered by this diarrhœa, or not; if she did recover, as I apprehend she did, it was from an assemblage of symptoms, no less important than that of the intermitting pulse.

It is not necessary to recapitulate here all the cases which illustrate this point:  
What

What are mentioned may serve as hints, which may be applied to most of the other cases, both those which I have extracted from Dr. Nihell, and what I have given, as having fallen under my own observation. In these latter, the inference on this head is strongly confirmed ; for, under every case, there appeared several important symptoms, as well as the intermitting pulse, which were all removed by purging medicines, or a natural diarrhœa.

But there is one case communicated to Dr. Nihell, which much deserves to be here repeated. It is the 12th observation, in chap. II. of this essay, page 56 ; the case (then under the care of the relator) of a man of sixty years of age, afflicted with a double tertian ague, attended with the intermitting pulse, which accompanied only one of the two distinct fits, following regularly that with which it began. This intermission was succeeded by a diarrhœa, by the means of which alone the paroxysm it accompanied had almost entirely

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tirely

tirely disappeared ; and the other, which from the beginning had been the more violent of the two, was much diminished. Thus was this ague, in a great degree, removed by the diarrhœa, and, probably, afterwards totally ceased with the intermission of the pulse. And, according to the doctrine I am now supporting, an artificial diarrhœa would have had the same effect, whether the cure here was partial or compleat. I am the more inclined to this judgment on the case, because I have experienced in agues of all denominations, the good effects of purging remedies, in moderating the paroxysms, and, not seldom, totally curing : at least, this method has paved the way for a more successful administration of the cortex. In sanguine, plethoric habits, I have more than once directed liberal blood-letting in the height of the hot fit : and, on the decline of the sweats, at the end of the paroxysm, have administered purging remedies ; and, after their operation, an opiate. The event has been, either a total resolution of the disease at once, or by persisting

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ing in the moderate use of these purging medicines, the succeeding paroxysms have, as in the former case, been rendered milder, and the disease easily cured by the cortex.

But this practice is to be limited to the habits just specified, as far as relates to venæsection ; for purging remedies, of some kind or other, warmer or cooler, may be adapted to almost all cases. In those agues which are endemial to moist, cold, marshy countries, blood-letting seems, in general, to be improper, tho' the warmer purges may be useful. In these situations, the cortex itself usually requires the additional help of aromatics and chalybeats : and in low, impoverished, habits of body, the same improvement of this remedy will be necessary in all places : but, it is the condition of the disease itself, the nature of the symptoms, and the constitution of the patient, more than the peculiarity of the climate, or the frequency of the distemper, which give the indications of cure.

I could easily illustrate and confirm this doctrine concerning purging in fevers by many instances, which have occurred within my own practice, both of late years, and, more particularly, in the epidemic fever of 1741, concerning which, in that year, I published some observations, and whose symptoms were such\*, as have usually given the names of low, influent, nervous, malignant, &c. to the fever, in which they have appeared; and which symptoms have, generally, been treated with warm medicines, and a warm regimen, without the evacuations of bleeding and purging,

Now in this fever (I speak of it, as distinguished in this city, and according to my

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\* These symptoms were slight, irregular, shiverings, faintness, weariness, giddiness, an obtuse pain in the fore-part of the head, weight on the breast, sighing, anxiety, inquietude, a low oppressed pulse, profuse sweats, petechial eruptions, both florid, and of a purple cast, and, sometimes, miliary eruptions. These were the general symptoms; they were not, however, constant, but varied much, according to the treatment in the beginning of the distemper.

observation)

observation) purging appeared to be the principal remedy; venæsection, indeed, was generally premised, and, in some cases, several times repeated. In the progress, however, of my enquiries, I had frequent experience, that if the body was kept soluble, by the daily exhibition of some gentle laxative; if the diet was light, cooling, and rather subacid; if the chamber of the sick was kept duly ventilated, according to the season, by the admission of fresh air, and the patient was not constantly confined to his bed, nor early sweats encouraged, the cure of the fever might be accomplished in a few days, and without such re-iterated bleedings, as I at first thought necessary. In slighter cases, a mere regulation of diet was sufficient, and it was seldom that I had occasion to administer, what are commonly called cordials, tho' sometimes improperly; for, under certain circumstances, the evacuations of bleeding and purging are the best cordials.

I could, likewise, support this practice in fevers by the sentiments of several physicians;



ficians; Sydenham\* especially: but this undertaking I postpone at present, as it would anticipate an intention I have of republishing those observations, and adding to them some notes, with the view of explaining, confirming, or limiting, the practice I have, in that treatise, recommended; for it is, by no means, my opinion, that it is to be applied, indiscriminately, to all kinds and conditions of fevers: this would be to prescribe to the name of a fever, not to the character, or the distinction of its symptoms †; the part of a mere empiric only, not of a rational physician.

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\* In his *schedula monitoria*, on the fever of 1685, written after the experience of almost his whole life, he professedly defends this practice, in opposition to the then regning methods of treating fevers by hot sudorifics, and a hot regimen, in order to expell some supposed specific malignity.

† On febrile symptoms, their various causes, and the different treatment they require, Van Swieten's commentaries on Boerhaave's aphorisms, tom. II. eminently deserve to be perused, and studied, those particularly on the *anxietas, debilitas, sudor, et exanthemata febrilia*.

But

But to return to the more immediate business of this essay.

The reader will observe, that throughout the preceding pages, I have considered the subject, of the intermitting pulse, altogether in a practical light, not so much as allowing myself in any attempts to establish a theory on phenomena, which seem so obscure, and difficult to be ascertained, as to their causes. Dr. Nihell himself was aware of this difficulty, as appears from the following passages. The quotation I rather make, because it lays down some restrictions concerning this pulse, which it would have been otherwise necessary, that I should have mentioned myself.

\* ' I come now, says the doctor, to some  
' general remarks, on the intermitting  
' pulse. As this is much more easily per-  
' ceived than the rebounding pulse, it has

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\* Treatise, page 66.

‘ been the object of many curious obser-  
 ‘ vations, while the latter lay almost en-  
 ‘ tirely neglected. The dissection of such  
 ‘ as have laboured under an habitual in-  
 ‘ termitting pulse, has brought to light  
 ‘ the causes, which produced it in various  
 ‘ disorders and impediments of the heart,  
 ‘ neighbouring blood-veffels and lungs\* ;  
 ‘ and mechanical theory has enabled us to  
 ‘ demonstrate, from them, the intermission  
 ‘ of the pulse. All cafes of this kind,  
 ‘ which every intelligent phyfician must be  
 ‘ acquainted with, are evidently fo many  
 ‘ exceptions to the rule, by which Dr.  
 ‘ Solano eftablifhes the intermitting pulse  
 ‘ a fign of a critical diarrhœa. But fuch  
 ‘ cafes, the doctor, who was very limited  
 ‘ in his reading, had no knowledge of,  
 ‘ or did not attend to. It is evident, in  
 ‘ general, that an habitual pulse cannot  
 ‘ be critical.

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\* See this effay, chap. ii. obf. viii. page 50.  
 chap. iii. obf. iv. page 79.

‘ Besides

' Besides the known causes of an habi-  
 ' tual intermission in the pulse, we can,  
 ' from evident principles, demonstrate some  
 ' causes of a transient, fleeting intermission,  
 ' entirely foreign to a crisis; such as,  
 ' spasms, convulsions, inflammation of the  
 ' heart, weakness, an extraordinary reple-  
 ' tion or inanition, with a few others  
 ' equally obvious, in which a judicious  
 ' physician cannot be mistaken. Such  
 ' cases are, also, as many exceptions to Dr.  
 ' Solano's general rule on the intermitting  
 ' pulse.

' But it is certain, in matter of fact,  
 ' that the appearance of this pulse is not  
 ' confined to such causes, as I have hitherto  
 ' mentioned. Hence various other causes  
 ' have been guessed at by theorists, but  
 ' none plainly demonstrated, or applicable  
 ' to particular cases, with any tolerable  
 ' degree of certainty: They must, there-  
 ' fore, remain in the class of mere ab-  
 ' stracted possibilities, with which men  
 ' of real knowledge have no concern.

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' Whence

‘ Whence it is plain, that, in all such cases,  
 ‘ we are not, in the present state of know-  
 ‘ ledge, furnished with sufficient reasons  
 ‘ to deny the intermitting pulse a signifi-  
 ‘ cancy of a diarrhœa. This depends en-  
 ‘ tirely upon experience, and is thereby to  
 ‘ be determined, tho’ the mechanical  
 ‘ causes of the relation of this pulse to a  
 ‘ diarrhœa, or of the other critical pulses  
 ‘ to their respective evacuations, should for  
 ‘ ever remain a mystery, as we must now  
 ‘ confess them to be,’ &c. &c.

But a few pages onward, after con-  
 jecturing, from his observations on the  
 reciprocal shiftings of the critical pulses  
 from one wrist to another, that they do  
 not proceed from any cause limited to  
 the heart, or general system of the blood-  
 vessels, and adding his reasons for such  
 conjecture, he concludes, ‘ that there re-  
 ‘ mains no other, to which this phæno-  
 ‘ menon can properly be attributed, but to  
 ‘ the nerves, the prime original mo-  
 ‘ ving powers of the body, which we  
 ‘ know, both from common experience  
 ‘ and

‘ and anatomy, have an independent action  
 ‘ in their distinct distributions, and may  
 ‘ differently affect the one and the other  
 ‘ side of the body at the same time. A-  
 ‘ mong some other differences, says he, I  
 ‘ have observed the rebounding and inter-  
 ‘ mitting pulses, which were equal before  
 ‘ in both wrists, to disappear totally in the  
 ‘ right wrist for some hours, nay, for a  
 ‘ whole day, while they persisted with  
 ‘ their usual evidence in the left, and then  
 ‘ again shift from this to the former:  
 ‘ Whence it may be very probably in-  
 ‘ ferred, that not only the shiftings and  
 ‘ other differences of these pulses, but also  
 ‘ the pulses themselves, proceed from an  
 ‘ immediate influence of the nerves on the  
 ‘ heart, and its appending vascular system,  
 ‘ &c.’

Dr. Fleming, mentioned in the intro-  
 duction to this essay, page 17, has offered a  
 theoretical solution, and explication, of So-  
 lano's doctrines on the three critical pulses,  
 according to the received laws of the animal  
 oeconomy. I shall not venture my own

opinion on his theory, but shall only quote that part of it, which relates to the intermitting pulse; and, in the language in which it is published; as I would not risque the weakening, or even changing, his sentiments by a version.

\* ‘ Secundus nunc Solani inventorum  
 ‘ articulus, qui circa pulsum intermit-  
 ‘ tentem dictum, ejusque præfagia versatur,  
 ‘ expendendus venit. Hanc pulsus speciem  
 ‘ ille, ut supra expositum est, in morbis  
 ‘ criticas alvi solutiones portendere sagax  
 ‘ vidit, eo quidem futuras copiosiores, vel  
 ‘ numero, vel mole dejectionum, quo  
 ‘ longiora intermissionum spatia deprehen-  
 ‘ duntur. Prognosim verò hanc non minus  
 ‘ ipsis rerum naturis, et œconomix anima-  
 ‘ lis legibus congruere, quam eam, de qua  
 ‘ modo agebamus, me ostensurum confido.

‘ Prius autem pulsus intermittentis natu-  
 ‘ ram et causas consideremus. Si ab una

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\* Pag. 18, et seq.

‘ aliqua arteriosi systematis contractione  
 ‘ sanguis non adeo prompte et copiose finui  
 ‘ venoso et auriculæ cordis dextræ immit-  
 ‘ tatur, ut impleti ambo eum continuo et  
 ‘ absque mora, consueto temporis spatio  
 ‘ in cor dextrum propellendo urgere possint,  
 ‘ tunc subsistet aliquantisper pulsus, et inter-  
 ‘ missionem patietur. Donec enim satis  
 ‘ distendantur immisso sanguine sinus et  
 ‘ auricula, non satis ad contractionem  
 ‘ uterque poterit irritari; si vero moram  
 ‘ trahat ventriculi dextri impletio, utique  
 ‘ differri sanguinis per pulmonem trajecti-  
 ‘ onem, et ad cordis sinistra reditum; tum  
 ‘ ejusdem per aortam propulsionem, adeoque  
 ‘ insequentem arteriarum diastolem necesse  
 ‘ est.

‘ Mora igitur longiori, quam ordinario  
 ‘ contingit, impletionis sinus et auriculæ  
 ‘ cordis dextræ facta, pulsus edetur qualem  
 ‘ intermittentem appellant medici. Hanc  
 ‘ vero ejus pulsus speciem, quæ absque  
 ‘ anxietate aut molestis aliis symptomatis fit,  
 ‘ causis modo memoratis omnino effici ex  
 ‘ eo patet, quod, si impedimentum pro-  
 gressus



‘ gressus sanguinis vel in ipsis cordis thalamis,  
 ‘ vel in trajectu per pulmonem subsisteret,  
 ‘ utique deberent palpitationes cordis,  
 ‘ anxietates, spirandi difficultates inde con-  
 ‘ cinnari: quæ omnia abesse supponimus.

‘ His rite perpensis, utique manifestum  
 ‘ apparebit, dum natura fluxum ventris  
 ‘ gnaviter molitur, pulsus, si omnino ab  
 ‘ hoc molimine mutetur et turbetur, ad  
 ‘ intermittentis speciem debere inclinari, ex  
 ‘ secessione nimirum succorum ex vasis  
 ‘ rubrum sanguinem ferentibus in lateralia  
 ‘ humores serosas capientia, et in internam  
 ‘ amplam intestinorum superficiem ducen-  
 ‘ tia. Ita enim fraudabuntur parte suorum  
 ‘ liquidorum canales sanguiferi; unde minus  
 ‘ justo implebitur utriusque venæ cavæ trun-  
 ‘ cus, et proinde sinus et auricula cordis  
 ‘ dextra non satis prompte distenta et irritata  
 ‘ sanguinem suum in dextrum cordis ven-  
 ‘ triculum tardius justo projicient, et reliqua  
 ‘ supra memorata ordine procedent.

‘ Quo vero est copiosior succorum ex  
 ‘ vasis sanguinem rubrum ferentibus, in  
 ‘ lateralia

‘ lateralia diarrhœæ materiem advehentia  
 ‘ secessio; eo intervallum inter binas arte-  
 ‘ riarum dilatationes erat diuturnius, quod  
 ‘ cum Solani observatis ad amuffim  
 ‘ congruit.

‘ Sed monendus hic ferio lector, ut non  
 ‘ omne pulsus intermittentis genus ab ista  
 ‘ secessione humorum in vasa serosa oriri,  
 ‘ ita nec diarrhœam criticam, aut eam  
 ‘ ciendi conatus semper ei succedere. Signa  
 ‘ itaque reliqua debent in ægroto simul  
 ‘ perpendi; recte consulente, et Solanum  
 ‘ hac in re corrigente, Nihello.’

I have now offered all that occurs to me,  
 at present, on the subject of this essay. Should  
 any farther lights be thrown upon it  
 by any future experience of my own, I  
 shall esteem it my duty, to communicate  
 what I may observe, and retract any error  
 I may discover. I shall, therefore, hold  
 myself obliged to any practitioner, who  
 shall point out, wherein I may have been  
 mistaken; of course, I shall reap satisfaction  
 in finding my observations confirmed by  
 the

the experience of others. Any information, of either kind, will be received with thanks, and, on a future occasion, have due respect paid to them.

Haymarket, St. James's,

Feb. 18, 1758.

*F I N I S.*



