## An account of the use, application, and success of the Bath waters in rheumatic cases / by William Falconer.

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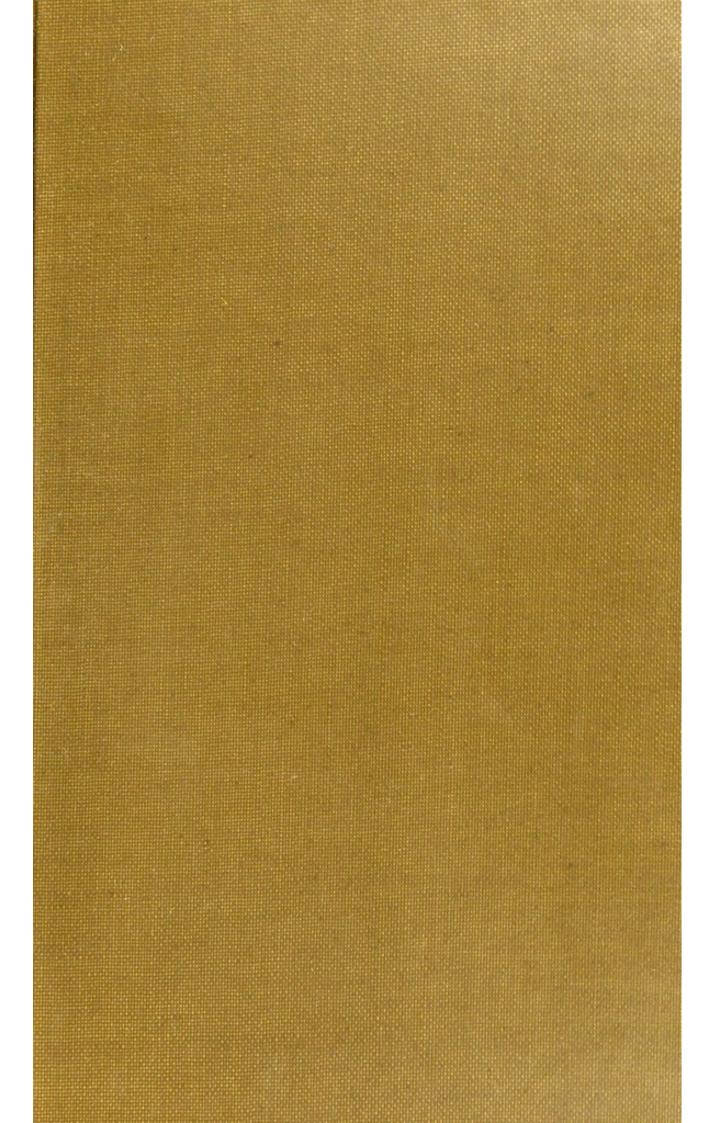
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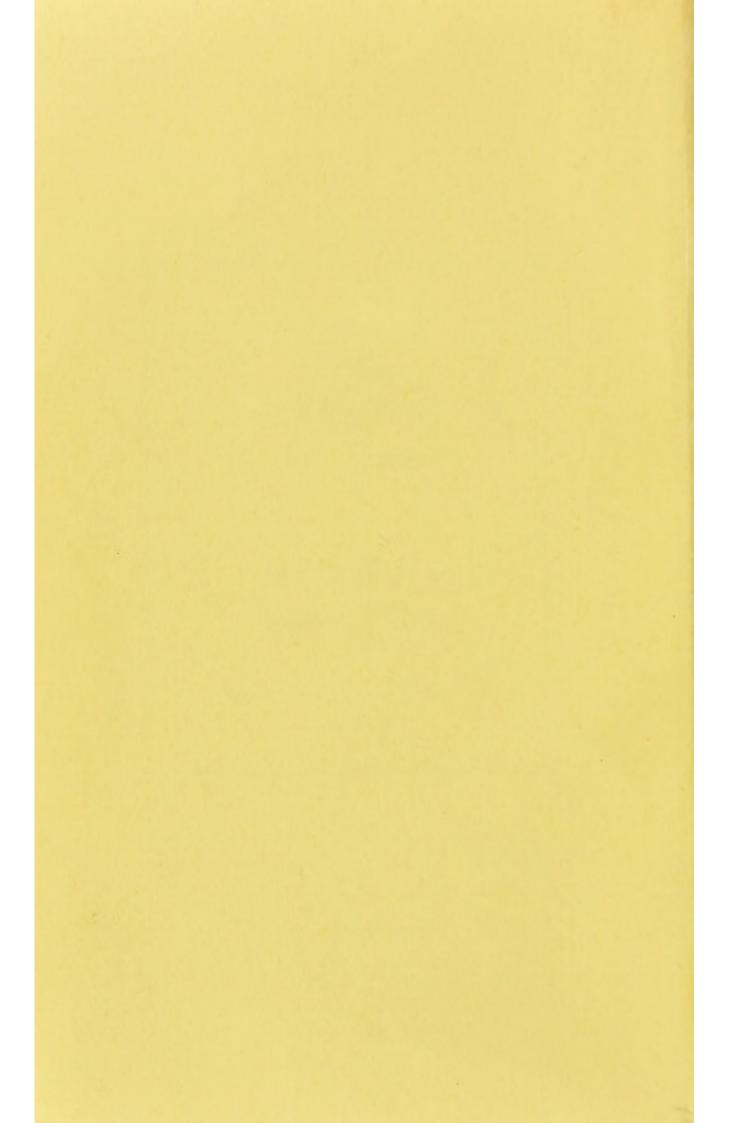
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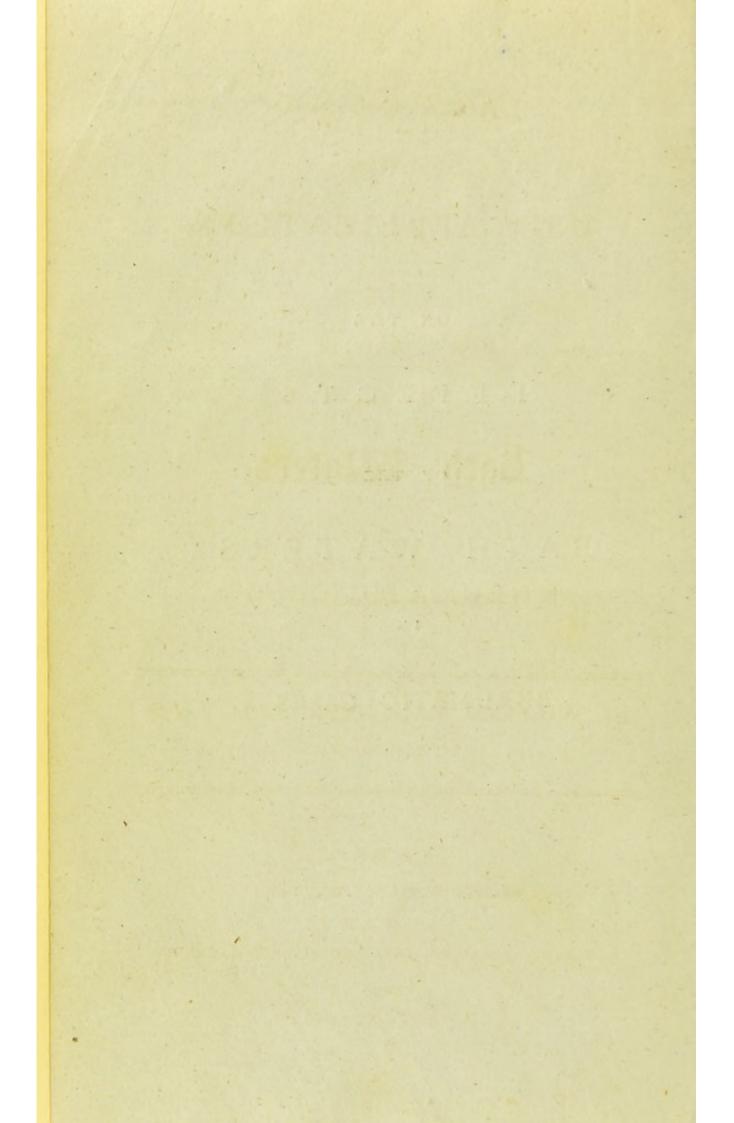
### EFFECTS

OF THE

## BATH WATERS

IN

RHEUMATIC CASES.



### ACCOUNT

OF THE

### USE, APPLICATION,

AND

SUCCESS

OF THE

# Bath Waters,

IN

RHEUMATIC CASES.

BY WILLIAM FALCONER, M.D. F.R.S. PHYSICIAN TO THE BATH HOSPITAL.

BATH:

PRINTED FOR W. MEYLER;

AND SOLD BY

G. G. AND J. ROBINSON, PATER-NOSTER-ROW, LONDON.

M.DCC.XCV.

### PREFACE.

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THE advantages arising from the use of the Bath Waters in rheumatic cases, have scarcely, I apprehend, been noticed as they deserve. This remedy has indeed of late years been generally understood to be applicable to these complaints; but the particular circumstances that lead to, or disfluade from its use, have not, as far as I know, been specifically pointed out.

To determine in what cases, situations, or stages of this disorder, the use of the Waters may be advisable, what seasons of the year are most savourable to their good effects, at what periods of life the greatest relief may be expected, and what continuation of the use of the remedy may be deemed a sufficient trial, is undoubtedly a matter of no small consequence; as it may suggest, on the one hand, the means of relief in a painful malady,

and on the other, fave to those, whose cases may not be suited to the use of the Waters, the trouble and expence, both of which are often important considerations, of undertaking so long a journey.

Such are the motives which induce the Author to publish the ensuing accounts, which he trusts will prove satisfactory, as far as regards the propriety of the attempt. How far he has succeeded in accomplishing what he proposes, he submits to the judgment of the public.

It is proper to apprize the reader, that little more than a plain statement of facts is here meant to be exhibited, together with the addition of such (as he deems) probable analogies as have occurred to him, and which he thinks may conduce to extend the use of the Bath Waters, on reasonable grounds of expectation of success, to other cases which may not precisely tally with those which he has had an opportunity of seeing.

The general account of the diforder which is the subject of this work, is taken in a great measure from personal observation. It may,

may, probably, on that account, be defective; but the reader may be affured, that no fact is related on the authority of the writer, to which he himself has not been an eye-witness. The memorandums of the cases sent to the Hospital, which had fallen under his care, together with the additional observations made at the time of the patients being first visited by the Physician, which are all carefully preserved, have furnished the greatest part of the materials from which the present account is compiled, and the author has the satisfaction of being able to declare, that no testimonials can be more authentic or impartial.

The Tables which follow the general account of the diforders, are taken from the Hospital Register, and extend from May 1st, 1785, to November 19, 1793, or the space of eight years and two hundred and three days, and comprise the general result of the whole Hospital practice, respecting the disease here treated of, during that period.

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ON THE USE OF THE

## BATH WATERS

IN THE

### RHEUMATISM.



### DESCRIPTION OF THE DISEASE.

BEFORE I treat of the use of the remedy, it will be proper to give some account of the nature and symptoms of the complaint.

The rheumatism is well known to be a painful affection of the muscles, and principally of those parts of them which are in the neighbourhood of the joints. The larger muscles, as those of the thighs, legs, and back, are most subject to be affected; but those of the arms, shoulders, and hands, often suffer, and indeed every muscular part of the body has, in its turn, been liable to this disorder.

The muscles of the neck, perhaps from their being usually more exposed, are more commonly B affected

affected in women than in men, and those of the face are, in young subjects, very liable, in either fex indiscriminately.

This diforder has been generally divided by authors into two kinds or species, the ACUTE and the CHRONICAL, but I think without sufficient grounds for such a distinction, as the disorder is varied only by circumstances respecting the subject it attacks, not by any thing inherent in the nature of the complaint itself.

The acute and chronic rheumatism differ indeed in some of their symptoms, and in the mode of treatment proper for their cure; but these differences are not greater than what take place between the early and the advanced stages of other inflammatory disorders.

I have here spoken of the rheumatism as a muscular pain, whereas most writers describe it as principally affecting the joints; but the truth I apprehend to be, that it is really a muscular affection only, at least at its commencement, but that the pain is mostly felt about the joints, as the muscles are in general inserted there, and the pain is always observed to be most acute where they rise or terminate. This circumstance has occasioned the rheumatism to be termed a disease of the articulations.

It is allowed on all hands, that the pains shoot along the course of the muscles, from one joint to another, and are liable to be aggravated by the action of the muscles belonging to the joints affected.

The pain in the rheumatism is sometimes dull and obtuse, though very fatiguing and troublesome; and at others, especially where the disorder has been aggravated by the admission of fresh cold, during the painful paroxysm, acute and lancinating, insomuch as sometimes to produce spasmodic efforts, and contractions resembling the cramp, especially in the lower extremities.

External marks of inflammation, particularly fwelling, are generally, but not always found at, or near the feat of the pain, but the fwelling is more diffused than in the gout, nor does it assume that deep scarlet, or rather crimson appearance, which generally characterises gouty tumours.

The parts fo affected are mostly fore and tender to the touch; but are not, I think, endued with that exquisite sensibility which attends the gout. I have not observed that rheumatic patients were at any time unable to endure the contact of the bed-cloaths, or any other light covering, which is often the case in the inflammatory stage of the gout.

It may also be remarked, that in gouty complaints, the pain generally, if not always, abates

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when the part affected begins to fwell; but this does not take place in the rheumatifm, either for conftantly, or to forgreat a degree; fince I have often observed the pain to continue as violent after the part had been fwelled, as it had been during any stage of the disorder. Some abatement of the pain is, however, usual in both complaints, on the parts swelling.

At its first attack, and often at several of those succeeding, it is accompanied with considerable signs of sever and inflammation. The heat of the body is much above the natural degree, and the pulse strong and quick, often to 120 strokes, or more, in a minute, with the tongue commonly white, and sometimes, though not generally, rather dry; but the head-ach, depravation or weakness of the mental faculties, prostration of strength, want of sleep, unless from pain, and failure of appetite, do not, as Dr. Heberden \* very justly observes, take place in nearly the same proportion as they do in most idiopathic severs.

The cold stage in rheumatic fevers, I have obferved to be rather indistinctly marked, and to be short, and seemingly disproportionate, to the hot stage that succeeds. Some writers † on the rheumatism speak of the sever as preceding the pain, but in

<sup>\*</sup> Medical Transact. Vol. I. on the Pulse.

<sup>+</sup> Sydenham, Cap. V. Processus integri de Rheumatismo. Clerk de Rheumatismo Thesaur. Medic. Tom. I.

those cases which I have had an oppportunity of observing at the Hospital, the pain seemed rather to precede the severish symptoms. Perhaps at the first attack, which we seldom have an opportunity of seeing at the Hospital, this may be the case; and I think I have remarked it in private practice: but as Physicians are seldom applied to in the beginning of this complaint, which is generally thought not to be dangerous, and as enquiries of this kind are very liable to be misunderstood, I cannot speak with certainty on the subject.

The blood drawn in rheumatic cases attended with sever, is said to be usually covered with a white, sirm, and tenacious crust, such as appears commonly on the blood of pleuritic patients. This exactly accords with my own observation,

The circumstance mentioned by Dr. Clerke, from Payan-Dumoulin, of the inflammatory crust in rheumatic severs being thicker, but not so hard as in pleurisies, has never occurred to my notice, and I suspect has been accidental, and owing to something that took place in the manner of conducting the operation.

The heat of the body, though usually pretty great at times, is rarely constant or uniform. Sweats frequently break out, which are, however, mostly partial, and often confined to the neck and breast; and seldom produce much alleviation of the

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pain and diffres. When, however, the pained parts perspire, which they seldom do until the sweats become universal, the pain abates, and the paroxysm of the disorder usually draws towards a termination.

Some authors represent the partial sweats in rheumatic severs, as of a clammy or glutinous consistence. There may possibly be some soundation for this, though it has not fallen under my observation, as the pain and consequent fatigue are often so great as to produce faintness, which is often attended with a colliquative perspiration, which is well known to consist of the oily and mucous particles, whereas healthy perspiration is thin, and consists of little more than watery fluid.

It is not uncommon for the urine to continue of a natural colour and quantity during the course of the paroxysm. This is, however, variable, as I have sometimes seen it very pale, and at others high coloured. Towards the decline, provided the perspiration be moderate, the quantity of urine is generally increased, and a sediment, mostly of a yellowish cast, is deposited. If the perspiration be profuse, the urine is apt to be high coloured and turbid, often resembling, when fresh made, muddy table beer, and on standing, depositing a heavy and often a dark coloured sediment.

The continuance of the inflammatory stage of the rheumatism is very uncertain, being in a great measure symptomatic, and depending on a local affection. I have seen it last from three or four days, to seven weeks, and to depart at last without any specific or particular criss, but merely in the way of gradual amendment; and, I believe, instances are not uncommon of rheumatic severs of a still longer duration. This sever is said to terminate sometimes satally; but such an instance has never occurred to my observation, either in private practice, or at the Hospital. In the sormer, however, I have seen cases that occasioned, by their long continuance, no small concern for the event.

Rheumatic pains are frequently described as being liable to be translated from one part of the body to another, fomewhat in the fame way with the gout. But the translation is, I believe, far from being fo compleat, as takes place in the gout, nor does it happen on fo flight occasions. When a part remote from the one first affected is attacked with rheumatifm, it does not of courfe follow that the complaint should leave the one first seized, it being agreeable to the nature of the rheumatifm to occupy feveral parts of the body at the fame time, which is feldom the cafe with the gout. The prefence of the rheumatism, in any part of the body, increases indeed the irritability of the whole, and renders it liable to have the complaint excited, in various parts of it, by occasional causes, which, probably,

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at other times, would not have produced such an effect. It is likewise true, that these accumulated attacks are often highly painful and distressing, and often directed to parts of the body which are not the usual seat of the complaint, as the throat, head, and abdomen. In the first of these I have seen it very painful, but it did not obstruct the power of swallowing, and yielded soon to warmth and local applications.

Its appearance in the head is more alarming, as it will fometimes occupy the whole furface of the head, and produce exquisite pain; but I never knew it prove fatal, or even to excite delirium or vertigo. It is likewise attended with great pain, when it attacks the abdomen. It is not, however, accompanied with constipation of the bowels, sickness, vomiting, or other symptoms, that denote inflammation of the viscera; but, like the foregoing, generally soon yields to sweating and warm applications. Indeed, in all these cases the pain may, I think, by accurate examination, be discovered to be superficial, and seated in the external muscles.

Rheumatic attacks, if of long duration, and frequently repeated, diminish considerably the strength of the body in general, but particularly that of the parts affected. This is most observable, when either from inattention, or excess of pain, the limbs have remained long confined to the same posture. From the same causes the muscles of the limbs affected,

fected, particularly those that form the calves of the legs, are subject to waste very much. The joints also, especially those of the singers and knees, are apt to enlarge. The tendons also become rigid and hard, and sometimes, when the inflammation has been communicated to the joint, the disease terminates in an anchylosis of the articulations. When this takes place, and generally sometime before, the pain abates, and for the most part soon ceases, though the enlargement of the joint continues, and the limb remains lame and stiff, and often nearly useless.

It frequently, however, happens, that an induration of the tendons belonging to the muscles that move the joint, is mistaken for an anchylosis; nor is it very easy for one who has not had an opportunity of observing the disorder in its progress, to distinguish them. The sphere of motion of the limb (if such an expression may be allowable) becomes gradually more and more confined, until it becomes immovable, although the joint itself be not injured. It happens not infrequently, in such cases, that immersion in a warm bath will restore the power of relaxation and contraction, and impart a free motion to the joint. This, however, subsists no longer than the part affected continues immersed, as, upon its being taken out, it becomes as rigid as before.

In rheumatic cases, wherein the attacks have been violent and frequent, I have frequently seen the extremities reduced into a state nearly resembling that of a palfy, being nearly deprived of strength, pale, emaciated, and cold, even to a degree that seldom takes place in paralytic affections.

The fense of feeling I have not observed to be extinguished, though indeed it is sometimes diminished; nor is there the same depravation of that sense which is so common in palsies, that of experiencing a prickly sensation on the surface of the skin, when pressed by the singer. Nor have I observed that confusion of sensations from the contact of bodies of opposite temperatures, as that cold bodies should be mistaken for hot, which I have several times seen take place in the palsy. The recovery of strength, slesh, and warmth, was also sexcept in some sew unhappy cases, which I have seen so reduced by extreme hardships, as to be near the termination of life) much quicker than in cases of the true paralytic kind.

Rheumatic limbs, in consequence of repeated attacks, and long confinement with little change of posture, are sometimes liable to ædematous swellings in various parts; but I do not think, from experience, that the original complaint has any direct tendency to produce them, nor, that they occur in rheumatic cases so commonly as they do in the gout.

Rheumatic limbs are, however, fubject to fwellings of a different kind, which are apt to continue after the fymptoms of inflammation have fubfided. These fwellings are usually in the neighbourhood of the joint, but sometimes appear towards the middle of the limb, and in the course of the muscles, and are often puffy, and yielding to the touch, and when pressed by the singer, give a crackling sensation, somewhat resembling what is felt on pressing an emphysematous swelling, save that it is not perceivable by the ear, and totally distinct from cedematous tumours, in not retaining the impression of the singer.

This fwelling is fupposed, and probably with reason, to be caused by "the effusion of a transpa-" rent gelatinous fluid, into the sheaths of the ten-"dons," as is observed by Dr. Cullen, \* and has been remarked by Storck, † Morgagni, ‡ and others. §

As rheumatic paroxysms seldom prove in their immediate effects mortal, and as this effused sluid seldom requires to be discharged by external openings, but is either soon re-absorbed, or changed in its nature and appearance, sew opportunities have occurred for ocular demonstration, though little doubt can be entertained concerning the fact, it being

<sup>\*</sup> Practice of Physic. Chap. of the Rheumatism.

<sup>+</sup> Annal. Medic. II.

<sup>‡</sup> Epist. Anatom. Medic. LVII. Art. 16, 17.

<sup>§</sup> See Dr. Clerk's Thesis. Thesaur. Medic. Tom. I.

related on the best authority. It may afford grounds for a curious discussion, whether this effused sluid, which is thus lodged in the sheaths of the tendons, be not the efficient and immediate cause of that stiffness and offisication of the tendons which we so often see take place in this complaint. All the Physiologists agree that the bony parts are generated from a gelatinous\* sluid, which is first perfectly clear,† and, as the process of offisication goes on, becomes gradually opake,‡ elastic,§ cartilaginous, and at last bony. The same progress is observable in the formation of a callus \*\* in a fractured limb; and

\* Initia omnium offium gelatinofa funt.—Halleri Phyfiolog. Lib. XXIX. Sect. IV. § XXIII.

+ Invenies os femoris & sic reliqua ex chrystallino gelu facta.—Ibidem.

‡ Paulo post nondum apparente sanguine tamen in medio osse longo, aliqua particula opaca apparet.—Ibidem.

§ Quam primum aliqua adest opacitas, slexilitas ossis jam multum imminuta est, ut elatere aliquo resiliat, seque restituat, quando slexisti.—Ibidem.

Quando nunc offa elastica funt, tunc puto pro cartilagine

haberi posse cui sunt simillima .- Ibidem.

I Ex glutine cartilago & ex ea os .- Ibidem.

\*\* Succus offeus effluit de offe in fracturis, ejusque progressus in singulis deligationibus apparet & os reparet. Ex sisso offe gluten exiisse constat, quod crustæ modo offi adnascebatur, deque fracto offe ex omnibus fere punctis, mucilaginem quæ os consolidaret exsudasse legimus.—Lib. XXIX. Sect. IV. § XXV.—Roridæ guttæ, quasi cruoris, sunt calli initium, quæ sensim durescit in marmoris speciem. Gluten videas ex diploe prodire quod vulnera cranii conferruminet, & ex cellulis ofseis gelu emergere quod callum faciat, cum simili a tendinibus veniente

and what is more to our purpose in anchylosis,\* which, especially that of the knee-joint, and sometimes that of the wrist, we know to be no uncommon consequence of rheumatism. This sluid appears, in the cases just mentioned, to be essued from the secreting parts, when in an instance state, which is also the case in rheumatism, in which this sluid is probably poured forth from the surface † of the tendons, and detained within the sheaths that envelope them, and is liable, by its remaining there in a stagnant state, to contribute towards the offsication of the tendons, by its being absorbed into their substance.

Whilft the powers of nature remain unimpaired, there feems to be a provision in the fystem to abforb this sluid into the general mass, and probably to discharge, by the proper outlets, such parts as are redundant, or improper to remain. To effect this, however, motion and exercise of the limbs and parts affected, seems necessary, perhaps to prevent the stagnation or decomposition of the mucous liquid, and to preserve it in a sluid state.

But when by repeated attacks the parts are

veniente gelatina. Succus ex tibiæ membranis exfudans, primo mucus, dein gluten, porro callus, demum os factus, jacturam complevit.—Ibidem.

<sup>\*</sup> Anchyloses ex eodem succo siunt qui coarticulata ossa conglutinet.— Ibidem.

<sup>+</sup> See note \*\*, p. 12.

weakened, and their motion obstructed by pain and swelling, the power of absorption begins to fail, and in consequence, therefore, this sluid is lest to remain in contact with the tendons, which take their rise from the periosteum,\* and are intimately united or connected with the bones, and have a disposition themselves to become bony, which is probably accelerated by the contact of this glutinous sluid, which contains, in its own substance, the materials as it were of offisication. But to return to the subject.

At the first attacks of this disorder, and particularly when it appears in young subjects, the pain is generally aggravated by warmth, and that of a bed particularly; but after repeated attacks, or if the disorder continues a long time, and especially if evacuations have been liberally employed, warmth becomes gradually more tolerable, and, in time, even agreeable, as it procures some abatement of the pain and uneasiness. About the same time the patient experiences some relief after taking victuals, which before seemed to increase his uneasiness. In a short time, animal food and fer-

<sup>\*</sup> Quando vero periosteum in homine increscente ad os vehementius adhærescit, non sine consusione osseæ substantiæ, & periostei & tendinis, tunc quidem videntur sibræ tendinæ ex ossium soveolis cristisque prodire, non quod perios teum persorent, sed quod cellulosa pereostei natura, cum tendine, cumque osse, eodem loco inseparabili nexu nunc conserbuerit.—Haller. Phys. Lib. XI. Sect. I. § XVII.

mented liquors, which during the former stage excited disgust, become acceptable to the palate. Next the patient begins to find his pains easier, during the night, which was before the season of their aggravation.

Notwithstanding these flattering appearances, the pain still continues, though its exacerbations are less acute, and on the whole not so harrassing and satiguing as before, as they afford some respite during the night.

The colour of the pained parts gradually declines from a dull red to a pale yellowish hue; the swelling abates, though it seldom disappears altogether, and the temperature changes from a troublesome degree of heat, to an uncomfortable and damp coldness, attended with an apparent languor of the circulation, both of which are most observable in the lower extremities. When these symptoms, which are always accompanied with an abatement, though not constantly with the cessation of the fever, take place, the complaint is denominated the chronic rheumatism, which Dr. Cullen \* has, I think, with perfect propriety, stated to be a stage in the progress of the disorder, rather than as a different genus, or even species.

In young fubjects, and where the attacks of the

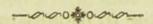
<sup>\*</sup> Rheumatismi sequela est Arthrodynia, Rheumatismus chronicus auctorum,

diforder have either not been very violent, or frequently repeated, the above fymptoms appear but in a fmall degree, and continue but a short time after the termination of the acute paroxyfm; but every return of the complaint marks their presence more ftrongly, and prolongs their duration; until at last, especially if due attention be not paid to the patient's fituation, the inflammatory stage feems to be abforbed into the chronical, and, like what fometimes takes place in the gout, a dull and heavy, but lasting pain succeeds, in place of one that is acute but temporary, until stiffness and offisication, often combined with great distortion of the joints affected, the fingers especially, put an end to the painful fuffering, but leave the patient, and fometimes at an early age, in a ftate of incurable lamenefs and imbecility. This termination of the complaint, however unfortunate it may feem, is lefs diffressful than some of its other consequences. It is observed, that "rheumatic swellings differ from " the nature of others of the inflammatory kind,\* " in not being liable to terminate in fuppuration." This account of them must, however, be understood with confiderable limitation. Rheumatic fwellings in the head, the trunk of the body, and upper extremities, rarely, if ever, produce suppuration; but rheumatic pains may, and not unfrequently do, after occupying various parts of the body, fettle in the hip or knee joint, and there produce a most painful, deep-feated, and dangerous abfcefs. But of this

<sup>\*</sup> Cullen's Practice of Physic.

this I mean to fpeak more particularly in another work.

This complaint fometimes terminates unfortunately in another way. When violent attacks of the rheumatism come on at an early period of life, the irritability of the body feems fometimes to be increased to such a degree, that the slightest occasional cause will produce a renewal of the inflammatory paroxyfm. Under these circumstances the patient is feldom free from the complaint, and the diffress arising from this unremitting pain and torture are fuch, as to wear out the strength and fpirits, and bring on an hectical disposition, which foon puts an end to life, already nearly exhaufted by fatigue, diffrefs, and anxiety. This happens the more frequently, as the circumstances of the patient are unable to afford the comforts of a warm dwelling, fufficient cloathing, nourishing diet, and an exemption from violent labour.



### CAUSE OF RHEUMATISM.

Cold has been affigned, by all the writers who have treated of this complaint, as the PRINCIPAL cause. This, I think, might be extended farther, as I am satisfied it is the only cause, though it is by no means improbable that the application of cold may excite rheumatism in some constitutions and states of the body more readily than in others. Cold however is a term of considerable latitude, and

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it is proper to explain under what circumstances cold is most liable to produce this disorder.

The fudden application of cold to the body when in an heated state, has been affigned as the \* most usual and powerful cause of the rheumatism. But I have not found that the fudden application of cold to the body, however heated, provided the application of cold be transient only, is apt to produce this effect. Cold fo applied is indeed by no means void of danger, but it feldom produces rheumatism. When it does not affect the health by any fudden or immediate effect, the leprofy, a difease that bears no fimilarity in fymptoms to the rheumatism, is the ufual confequence. No application of cold can be more immediate, than the drinking largely of cold liquids. This I have known to be the evident and acknowledged cause of the leprosy in literally more than an hundred inftances; and indeed there are fo few exceptions, that I am fatisfied that this or fome other fudden and transient application of cold is the only cause of † leprofy, and that in the few instances

\* Hac ut plurimum occasione nascitur, æger scilicet sive exercitio aliquo vehementiore, sive alio modo excalesactus, mox repentinum frigus admisit.— Sydenh. Cap. de Rheumatismo ad initium.

Calefacto corpori subito admissum frigus.—Boerhaavii Aph. 1491.

Nulla inter causas rheumatismi frequentior est, nulla validior.

-Van Swiet. Comm. in Aphorism. precedent. Vol. V. p. 647.

† I never faw, except in two cases, rheumatism and lepra conjoined; and I had reason to think that the two disorders were contracted at different times. in which it could not be traced, the patients were either unwilling to acknowledge their rafhnefs, or that the circumftance had escaped the memory, which might easily happen, as the disagreeable confequences of such imprudence do not manifest themselves until some time after.

But in looking over the accounts of more than 300 rheumatic cases, I find such a cause assigned in FOUR of them only, though the disorder was, in the other instances, almost always ascribed to cold under some other mode of application. Besides, out of the above sour, two were affected after drinking largely of cyder, a liquor apt enough, from accidental impregnation, to produce pains resembling rheumatism,\* but which are in reality of a quite different kind. It is therefore, I think, highly probable that the real cause was overlooked in these instances.

Nor is it necessary to the production of the disorder, that the body should be in an heated state at the time when the cold is applied. It often indeed happens that this is the case, from the impatience of rash, unthinking people to get rid, as soon as

possible,

<sup>\*</sup> Sometimes it shoots into the scrotum, groins, thighs, and legs, or, mounting into the breasts, shoulders, or arms, resembles a violent sit of the rheumatism, always leaving so great a degree of soreness in the external muscles, that the weight of the bed-cloaths, or the slightest touch of the singer, is painful.

—Medic. Trans. Vol. II. p. 69.—Dr. Warren on the Colica Pictonum.

possible, of the uneasiness arising from excess of heat; and it is probable that the effect of cold so applied may be more likely to produce rheumatism, than it would, had it been applied to the body when moderately cool; but it is nevertheless true, that cold, long continued, will produce rheumatism, when the body, to which it is applied, is in the most temperate state. Thus rheumatic pains are frequently caused by sleeping near an open window, and by other partial exposures to currents of air, which seem to be more injurious than a general exposure to cold.

The bad effects of cold appear to be aggravated by its being combined with moisture, probably from the constant evaporation rendering the impression of cold more permanent, by keeping it continually in a state of renewal.

Hence damp beds are with justice assigned as frequent causes of rheumatism; and, what is nearly allied thereto, lying down, and often sleeping, on the moist ground, a piece of imprudence common enough, especially in time of harvest, and what often produces disorders of a more dangerous kind.

Those likewise who are obliged to labour in the open air, in rainy seasons, or in grounds overslowed with water, as frequently happens in agriculture; those who work in mines of coal or of other minerals, washer-women, and others employed where moisture

moisture is concerned, are particularly liable to this difease.

A liberal or free diet \* has been introduced by fome writers among the causes of rheumatism, but I think without reason.

Some years ago, it feems to have been usual with the writers on medicine, to lay almost every complaint to the charge of luxury and excess in diet.

The catalogue of diforders, which may be justly ascribed to these irregularities, is sufficiently large to serve the purpose of caution in a moral view; but to ascribe every complaint to such indulgences, betrays want of observation, and an absurd acquiescence in the rotin of declamation, and indeed furnishes arguments in savour of those who are disposed to practise such excesses, by shewing that some of the bad effects they are said to produce, were wrongfully ascribed to that cause.

\* Rheumatismi & Arthritides eos maxime affligunt qui in lautâ fortunâ consenuerunt. — Morton Prolegomena ad Pyretologiam.

Victus lautior .- Boerh. Aph. 1491. - Sic too Van Swieten's Comment.

Crapula, pocula.-Home Principia Medic.

Dr. Buchan, with more propriety, fays, that "the rheumatism is most common among the poorer sort of peasants, who are ill cloathed, live in low damp houses, and eat coarse unwholesome food, which contains but little nourishment, and is not easily digested.—Domestic Medicine, Chapter on the Rheumatism.

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If cold be properly affigned as the cause of rheumatism, it is obvious, that the poor (who are little exposed to the temptations of luxury) must be more liable to suffer by cold, than those who can afford a liberal diet, who can, in general, also furnish themselves with defences against the inclemency of the weather, by dry and well-built houses, fires, and warm cloathing, conveniences of which the poor are in great need, and of which they are often totally destitute.

The state of the Bath Hospital assords a strong confirmation of what is here advanced. From the sirst day of May, 1785, to November 19, 1793, 444 rheumatic cases, and about 278 hip cases, a disorder nearly connected with rheumatism, and often proceeding from the same cause, were admitted.

The whole number of patients, of every description, admitted, during that period, amounts to 2689, which sum divided by 722, the aggregate of the rheumatic and hip cases, gives 3.7244 nearly; so that the rheumatic and hip cases amount to considerably more than one-fourth of the whole. From this calculation it must, I think, appear, that so large a number of persons, and so large a proportion of the whole, could scarcely have applied for the use of this remedy, had the disorders been confined, in any degree, to persons in the higher ranks of life.

Obser-

Observation leads us to think, that a liberal and even free diet of those who are most exposed to the causes which produce rheumatism, provided such indulgence does not degenerate into intemperance, tends rather to prevent, than to invite attacks of the rheumatism. Warm food and fermented liquors, if not taken in over proportion, form the best desence against cold and moisture, by supporting the strength, and keeping up a regular perspiration; and it is owing in no small degree to such accommodations, that hospitals are enabled to remedy the bad effects such hardships are apt to occasion.

It is probable that this miftake may have originated from another, which is the confidering gout and rheumatifm, which undoubtedly refemble one another in many of their fymptoms, as being derived from the fame or nearly fimilar caufes. However close the refemblance may appear in many circumstances, the nature of the two diforders varies very materially.

They are produced by almost opposite causes, affect opposite ranks of people, and admit of considerable distinction in their respective remedies. Indolence, high living, warm apartments, together with other indulgences of ease and pleasure, undoubtedly often, and indeed generally, produce gout; whilst hard labour and fatigue, spare and poor diet, thin cloathing, and cold lodging, almost as certainly produce rheumatism. Of course the

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gout must be deemed the disorder of the rich, and the rheumatism that of the poor.

It is almost unnecessary to add, that this propofition must not be understood as universally true. Exceptions on each side will occur; but the proportion shews sufficiently, that the observation, considered as a general one, is sounded in fact.

I have also observed that when the gout appears among the lower ranks of people, it is almost always combined with symptoms of rheumatism. During the period above mentioned several cases of the gouty-rheumatic kind were admitted into the Bath Hospital; but though the Waters are well known to be equally adapted to the relief of both complaints, the number of rheumatic cases wherewith the gout was intermixed, have been comparatively small.

Whilst the number of simple rheumatic cases amounted to 444, those of gout conjoined with rheumatism were no more than 29, or somewhat less than one-sisteenth part.

The review of the account of patients at the Bath Hospital, suggests a melancholy reflection on the number of disorders occasioned by imprudence and rashness, the danger of which there was, to appearance, little temptation to incur.

It is foreign to the present subject to speak of more than a part of these, namely, those occasioned by unnecessary and wilful, or, at least, careless exposure to cold, which, it should be observed, is no more than one out of many forms in which imprudence may manifest its dangerous consequences.

Besides the above-mentioned 444 simply rheumatic cases, there were 451 others of persons afflicted with pain and stiffness of the limbs, lumbago, hip and knee cases, a large proportion of which derived their origin from the same source with rheumatism. If we suppose one-half of them to be owing to cold, which will not, I think, be an unreasonable calculation, it will amount to 225, which added to the rheumatic cases, make in all 669 in number. I would not, however, be understood as suggesting that ALL these disorders could have been avoided or prevented by any care that could be expected to be taken by persons in such a situation.

Labour is indifpenfable in employments of a hazardous nature to health, as well as in those of a fafer kind; and this necessity renders danger unavoidable; and where danger is necessarily present, some mischief must, in a succession of events, take place.

But I am, nevertheless, of opinion, that a large proportion of the number of persons so afflicted, might have remained free from their complaints, had they used such caution only as is in every person's power to employ.

A necessitous person may, indeed, suffer an attack of the rheumatism, from want of sufficient cloathing, fcarcity of fuel, by being obliged to labour in cold wet feafons, or in moift ground, or in other employments exposed to the viciflitudes of heat and cold; but neither poverty, not any duty a man owes to his employers, obliges him, when heated by exercife, or by the weather, to pull off what cloaths he has, and to expose himself, when at rest, to a current of air, to plunge into cold water, to drink enormous draughts of cold liquors, or to lie down, and even to fleep on the moift ground, and often in the autumnal feafon; all which, and many fimilar inftances of rashness, are so common, that I am convinced more than two-thirds of the rheumatic and hip cases, mentioned above, might be traced to fuch causes. Many of these causes are affigned in the cases of the patients sent to the Hofpital; others I have discovered by the confession of the parties themselves; and many more, I had reason to fuspect, were owing to fimilar causes, which shame or obstinacy induced the parties to diffemble.

Did fuch exposures to danger take place from ignorance of the mischievous consequences likely to ensue, we might spare our censure, however we might be concerned for the unfortunate event. But the truth is, that they who commit these acts of imprudence know the danger of them, as well as those whose business it is to direct the remedy.

The bad effects of a chill, or a furfeit, by the former of which they mean a rash exposure to cold, and by the latter the drinking cold liquors when the body is heated, are almost proverbial among that rank of people; but I am convinced, that the hazard attending such irregularities is no small reason why they are practised.

The apprehension of reproach for timidity, effeminacy, or imbecillity, induces many to neglect even the most common and obvious precautions for avoiding danger.

The abuse of a principle so nobly and generously sounded, and the sacrifice of the lives and health of so many of our countrymen to such misplaced exertions of courage and resolution, is a just subject of concern!

If the computation before-mentioned be just, 446 persons out of 669 must have incurred this complaint through their own misconduct or neglect; a melancholy proof, though it includes a single

fingle instance only, how much indifcretion and obftinacy are capable of adding to the unavoidable misfortunes of life!

We must not, however, conclude that rheumatic complaints, and hip cases, are the only confequences of fuch irregularities. Fevers, both intermittent and continued, pleurifies, inflammations of the brain, of the bowels, and of the other vifcera, palfies, and many other diforders, might be added to the catalogue. Among these, I mention the leprofy particularly, of which loathfome difease no less than 239 cases have been brought to the Bath Hofpital within the space of time above-mentioned; nearly all of which, I am perfuaded, might have been avoided, as the difease owes its rife entirely to the fudden application of cold to the heated body, and is occasioned, in a great majority of instances, by the drinking of cold liquors in fuch a state, which no one can alledge to be a necessary circumstance.

On the whole, I am perfuaded, that the indolence, luxury, and pleafures of the higher ranks of mankind, though fufficiently numerous, and each of them contributing to injure health and shorten life, are, notwithstanding, by many degrees, less mortal than the indiscretions of the lower ranks.—
Were the catalogue of these, and of all their confequences, collected, and laid before the public, it would astonish the world, by exhibiting a source of mortality

mortality hitherto little noticed, but, perhaps, equally fertile with mischief with any hitherto discovered.



#### METHOD OF CURE OF THE RHEUMATISM.

THE method of cure, or, rather, the application of the Bath Waters to that purpose, remains now to be considered.

It feldom happens that patients are brought to the Bath Hospital during the continuation of the inflammatory stage of the rheumatism. The delay occasioned by the conditions of admission, and the waiting for a vacancy, together with the known impropriety of using the Bath Waters in any form during the continuance of a feverish state of the body, from whatever cause it may proceed, prevent the admission of patients in general until the inflammatory paroxysm has subsided.

It happens, nevertheless, sometimes, that a fresh attack, occasioned often by some accidental circumstance taking place during the patient's stay in the Hospital, will exhibit nearly the same appearances as the original seizure; and in such cases the usual remedies for sever must be employed.

Of these, bleeding, the most effectual of any, is sometimes necessary. As, however, the disease is mostly in an advanced state when it comes under our care, bleeding by the arm is less frequently used than bleeding from the part affected. Cupping is employed for this purpose, and is often repeatedly used as symptoms may indicate, and in general with good effect.

When the part affected is too fore and tender to endure the fuction of a cupping-glafs, which is not an uncommon circumstance, a large number of leeches, as ten, or more, applied as near as possible to the feat of the pain, will commonly serve the same purpose.

The indolent life, the confinement, and want of free air in an hospital, situated in a town, do not suit large and sudden evacuations by bleeding. The state of chronical debility comes on sufficiently fast, without its being precipitated by artificial means.

Purging is fometimes employed for the fame purpose, and, where costiveness is a symptom, often with good effect; but the frequent use of purgatives is inconvenient, both on account of the necessary motion of the pained parts, and the hazard of contracting fresh cold. We use on this occasion mostly the Infus. Sena, with the addition of Glauber's Salt, and

and find it to be most fuccessful when it acts as a diuretic as well as a purgative.

Antimonial medicines, as the Antimonium Tartarifatum, James's Powder, and the Pulvis Antimonialis of the London Difpenfatory, are also employed with an antiphlogistic intention, and mostly with fuccess. Some years ago, on account of the high price of James's Powder, I attempted to form a substitute for it, by mixing one grain of Tartar Emetic, as it was then called, with fifteen grains of powdered starch, which proportion admitted a convenient division into aliquot parts of the grain.

The mucilaginous quality of the ftarch appeared to abate the ftimulus of the antimonial, without depriving it of activity; and I found this composition useful, particularly in acute complaints, wherein some active operation, provided it was not too sudden and violent, was desirable.

Since the Pulv. Antimonialis has been discovered, and fold at a more moderate price, the use of the above substitute has become less necessary, and I have seldom used it of late.

The effect of these remedies, as indeed of all antimonials, is well known to be extremely uncertain. No observation I have ever been able to make, has enabled me farther than to conjecture, which has often proved fallacious, what effect even

a fmall dofe, e.g. three or four grains, of either the Pulvis Antimon. or of James's Powder, would produce, or indeed whether either of them would produce, any effect at all.

This uncertainty, however, provided some operation of the evacuatory kind take place, and that not too violent, is of less consequence to the patient than might be apprehended. Every practitioner in medicine has witnessed the good effects of antimonial medicines in abating sever, whether their operation be by stool, vomiting, or as diaphoretics.

I have no prepoffessions in favour of either James's Powder, or the Pulv. Antimonialis, so as to induce me to believe that the use of either of them in severs is nearly so universal as the empyrical and inconsistent recommendations given with James's Powder would lead us to believe; but candour requires me to say, that in simple severs, although the vomiting, sickness, and evacuation downwards, which is caused by these remedies, be highly distressing for the time they continue, yet that their duration is seldom very long, that they appear to diminish the strength much less than might be expected, and that the appetite for food returns sooner after the sickness has subsided, than could well be imagined.

The above effects, joined with the confequences of them, namely, the abatement of the fever, have caused the James's Powder formerly, and of late the Pulvis

Pulvis Antimonialis, to be much in use at the Bath Hospital in such cases, wherein the support of the strength is so necessary, in order to enable the patient to go through the chronical stage that usually succeeds.

When, by means of the above or fimilar remedies, the fever is abated, the feafon for the trial of the Bath Waters in general commences, even though the pain and fwelling should in a good measure continue.

The progress of the symptoms furnishes a pretty obvious as well as accurate criterion of the time when the use of the Waters may with propriety begin.

When the inflammatory disposition has so far subsided, that warmth begins to be agreeable, or even tolerable, to the pained parts, we have reason to believe that a cautious external application of the Waters is proper, whatever may be the state of the other symptoms.

On such occasions we often recommend the use of the Cross \* Bath, which being of a lower temperature, admits of being used at an earlier

\* It must be understood, that what is here said is meant to refer to the Hospital-practice only. I have often found, in private practice, that a lower degree, as eighty-eight or ninety, is still beneficial at the first trial; but such varieties of temperature cannot be accommodated to the patients at the Hospital, though they may be had at the private Baths.

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stage of the complaint, than would be proper for the trial of the hotter springs. At the commencement of its use, it is employed as a simple Bath only, and the patient's stay is usually limited not to exceed ten minutes, or one quarter of an hour; and no more motion is directed to be used in the Bath, than is consistent with ease.

A temperately warm Bath fo applied, is generally favourable, not only to the abatement of the particular pain, but also as affording a wonderful refreshment to the fystem in general, by relieving the foreness, lassitude, restlessness, and general uneasiness, which a long series of painful sensations never fails to induce.

The fpirits are no less relieved than the bodily feelings. The diffress and anxiety which the fatigue of pain long continued is fure to bring on, is generally removed, and the natural functions of the body, which always fympathife with those of the mind, regain, in a good measure, their activity. As the recovery proceeds, a longer stay in the Bath, to twenty minutes, or half an hour, may be indulged, but not longer; as I never knew any that reaped benefit by a longer stay. When this stay can be borne without fatigue, or uneasiness, it is usual to direct the use of the Pump on the parts affected, to the number of fifty or one hundred strokes, each time of bathing. This being used at first, when the patient is in the Bath, the

C. S. a.l.

the contact of the furrounding fluid abates the force of the stream, and renders its application perfectly mild and easy.

The Bath and Pump are thus used, one, two, or three times a week, according to the symptoms and state of the patient. As the amendment advances, the Hot Bath, which is warmer than the Cross Bath, is employed; and on the intermediate days the dry Pump,\* as it is quaintly called, is used, to the number of from sifty to two hundred strokes at a time.

If the body has been regular, and fymptoms of gradual recovery have appeared, I have feldom used any other remedy, and have generally been gratified with a favourable event in the course of a few months. But a progress so uniformly favourable does not always occur, even in cases where the event terminates in the patient's recovery.

It is not uncommon for the perspiration to remain obstructed, after the feverish stage has in a good degree subsided.

\* The stream of water passes through a flexible leather tube, which admits of being applied either in a direction perpendicular to the part, or at any angle that may be desired; of course the force with which the water strikes, may be varied at pleasure.

To restore perspiration, as the pain seldom departs until this can be accomplished, diaphoretic medicines are often necessary.

Two medicines \* have been principally in use for this purpose at the Hospital, namely, the Pulv. Ipec. compos. and the Pulv. Antimonialis of the last edition of the Pharm. Londin. Both these act powerfully as diaphoretics. I think the former the more certain, as it seldom operates unless by the skin, whereas Antimonials will sometimes operate by stool, or by vomiting. When, however, the sever is not entirely reduced, I think the Antimonial preferable, on account of its effects in reducing the pulse; but in dryness of the skin, unattended with sever, I think the Pulv. Ipec. comp. more efficacious.

\* Several other remedies have been occasionally given with this intention at the Bath Hospital, as the Volat. Tinct. of Guiacum, the Volatile Alkali by itself, or in composition, and other things of less consequence. I believe, however, no great dependance has been placed on any of these, as I have never been able to trace any benefit from their use. The Volat. Tinct. of Guiacum particularly, whose efficacy in large doses has been so extolled of late years, has by no means answered my expectations. Indeed, I have never been able to give half an ounce at a dose, the quantity recommended, without much trouble, difficulty, and inconvenience; and where it has been taken, it totally destroyed the appetite for food the day it was given.

The Antimonial is given from two to fix grains at a dose, sometimes twice a day, but generally at night only, and continued often for several weeks. The Pulv. Ipec. comp. is administered in the same manner, and in quantity from gr. 5 to 21; but I have seldom directed more than ten grains, as I have found that quantity, and often a smaller one, answer sufficiently the purpose of a gentle diaphoretic, which produces less hazard of getting cold, and is more effectual towards the cure, than a violent sudorific.

I have feveral times given the two remedies above mentioned in combination, but cannot fay that I have found them fucceed better than when feparately administered.

Formerly there was a large confumption of James's Powder at the Bath Hospital; and it was in use for about three years after I became Physician to that charity; but little or none has, I believe, been purchased during the last seven or eight years, as the professional persons have had reason to be satisfied with the effects of the substitute.

In order to gain the most complete information on this head, I have repeatedly enquired of the Apothecary to the Hospital (a most intelligent and candid man), if he could perceive any difference between the effects of James's Powder, and the Pulv. Antimonialis of the London Pharmacopæia,

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a question he was well qualified to answer, from his large experience as well as his judgment; fince for feveral years after his coming to the Bath Hofpital, James's Powder was in use, and during the course of the last eight years, eight pounds and a half of the Pulv. Antimonialis has been administered. His opinion is, that the Pulvis Antimonialis shews somewhat, but very little, more of a purgative tendency, than James's Powder; but that in other respects, and in every beneficial consequence, it feemed to be fully equal. I am disposed to pay much respect to the above opinion, but am confident that the difference in this respect from James's Powder must be very small, as I have paid attention to this circumstance in several instances; but fuch an effect has not yet occurred to my observation. If the advantages to health of the two remedies are equal, as I am induced to think them to be, from the most candid enquiry and pretty confiderable opportunities of observing their comparative \* effects, the difference of price is a material confideration in large charitable inftitutions. The eight pounds and a half in weight of the Pulv. Antimonialis, which was confumed at the Bath

<sup>\*</sup> The proportion of benefit received in rheumatic cases was rather greater, in proportion, from May 1, 1785, to Nov. 19, 1793, than from the beginning of the year 1775, to the end of the year 1779; yet, during the last mentioned period, James's Powder was much in use at the Hospital, and in the other, the Pulv. Antimon. was substituted in its place. See Observations on Table I. towards the end of this work.

Hospital, in the space of about eight years, cost that charity 9l. 9s. only, at the rate of twenty-two shillings per pound. Had the same quantity of James's Powder been used, which would have been the case, as both the medicines have been given in equal doses, it would have cost the charity upwards of 177l. so that by this substitution the charity has saved no less than 167l. 11s.

Mercurial medicines have been pretty largely administered, internally, at the Bath Hospital, in cases of chronic rheumatism. Whether they have been given with a view to promoting perspiration, or any other evacuation, or with a specific intention, I cannot determine. The Calomel Bolus, I obferve, has been generally used, and a purgative given the next morn, and this has been repeated three or four times. The account of the recovery of those who have tried it, appears to be favourable; but from my own perfonal experience, I could not perceive any benefit which might not be procured by milder means, and on that account have fcarcely used it. I would not, however, be understood to offer any determination of the question respecting the effects of mercurials in rheumatism, as they appear to meet with the approbation of fome of the profession, for whose opinion I have the greatest respect. If a trial is to be made of their efficacy, it can never be done to greater advantage than at the Bath Hospital, where the use of the D 4

the warm Bath contributes to obviate the most difagreeable effects attendant on the use of mercury, without any diminution of the advantages to be received from a trial of it.

But to return to the fubject: It happens fometimes that the stimulus of the Bath Waters, externally applied, begins, by long use and frequent repetition, to lose its effect. In such cases some external applications have been found of advantage. The most usual, and indeed the most powerful, are Blifters, which are, for the most part, laid as near as possible to the parts affected. These are particularly ferviceable in fwellings, which do not go off together with the fymptoms of inflammation. These swellings, blisters contribute to diminish, not only by their effect in promoting absorption by their stimulus, but also by the drain they occasion from the feat of the difease. When the blifter is healed, recourfe may again be had to the Pump, which will generally, after fuch an interval, exhibit nearly the same good effects as at first.

It is not uncommon, in obstinate cases, to repeat the blister once or twice, and to return again to the use of the Waters; and a course of this kind is often attended with success.\*

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<sup>\*</sup> In some cases, both in private practice, and that of the Hospital, I have made trial of the Emplastrum Calidum, but have never been able to proportion the quantity of Cantharides

In delicate cases, wherein the application of a blifter might prove too satiguing and irritating, I have made use of the Tinct. Cantharidum, made of treble or quadruple the common strength, rubbed diligently upon the part, which is often of service, and seldom proves so stimulant as to require any interruption of the use of the Waters.

In private practice I have employed the Linimentum Volatile, and Horse-radish, fresh scraped, rubbed in considerable quantity on the part affected, but think both of them inferior in good effect to the Tincture of Cantharides.

In rheumatic fwellings of the joints, which refift the above applications, we have often recourse to the \* Lime Poultice. This, if dexterously managed, will generally produce a considerable discharge, without breaking the skin, and is often of great service in resolving obstinate tumours. If much inflammation ensues on its use, it is seldom found to answer.

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in such a manner as to produce a discharge without raising the skin. It either acted as a blister, or produced no sensible effect.

\* The Lime Poultice is made of one part quick-lime, that has been exposed to the air and is fallen into powder, and of two parts of oat-meal, made into a poultice with hog's-lard.

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It is, however, necessary to employ, in this stage of the complaint, stimulant remedies, internally as well as externally. Of these, the Bath Waters are the chief; and these, drank with caution and moderation, are often of the greatest service in assisting the recovery of appetite, of slesh, strength, and spirits, and in restoring free and equable perspiration. Their use is, however, improper, whilst the tongue continues white or surred, or whilst the pulse beats more than ninety pulsations in a minute.

But the Bath Waters, it is well known, are apt, by long use, to nauseate and disagree with the stomach, and in cases of such a chronical nature as those of rheumatism, cannot be continued during the patient's stay, whilst at the same time some medicine of a similar efficacy is required.

When therefore the Bath Waters have become less agreeable to the palate or stomach than they were when first tried, I have often employed a preparation which goes under the name of In-

This is spread upon a cloth, to the thickness of half an inch or more, and renewed every twenty-four hours; and is often continued for a month, or longer. I have in such cases sometimes employed a scruple of the stronger Mercurial Ointment rubbed in twice or thrice a week, or oftener, and in some few cases with advantage; but I think it has failed much more frequently than it has succeeded.

FUSUM

FUSUM PARALYTICUM, \* to the quantity of four or fix ounces, twice a day; and this often fucceeds, either as a fubfitute for the Bath Waters, or in cases wherein they do not originally agree with the stomach.

It fometimes happens in the Bath Hospital, and, I presume, in others, wherein complaints of a chronical nature are received, that patients, after a stay of some months, although they had been in a progressional state of amendment for some considerable time after their admission, begin at last to lose slesh, strength, and spirits, and often to be affected with a hestic fever.

When these symptoms first appear, the Peruvian Bark is often a good remedy, and will obviate most of the worst symptoms: but if they recur, as they sometimes do, nothing will be of service, save a return to the samily and domestic occupations of the persons affected, which will in general be effectual towards a cure.

\* Infus. Paralytic. Pharm. Bathon. Nosoc. R Radic. Raph. rust. rasi. rec. Zii. Sem. Sinap. contus. Zi. Rad. Valer. sylv. Zs. Aq. bullient Biis.

Stent simul per horas ij. in vase clauso & cola. Colat liquori adde aq. raph. comp. Ziv.

Whether this diforder be owing to the confined air of an hospital, to an indolent life, or to the separation from their friends and acquaintance, which the patients of an hospital must necessarily experience, I cannot pretend to determine. I am inclined to attribute it to the last-mentioned circumstance, joined to a manner of life necessarily indolent and uninteresting; which last is the general source of that mental infirmity which goes under the name of Tædium Vitæ, a distress more unsufferable than, perhaps, any positive disorder whatsoever.

I have often reflected that those so afflicted must have received from it one of the best moral lessons possible in favour of industry and activity, blessings of which most of those who are constrained to partake, have but an imperfect idea.

Virgil's rustics, whom he describes as wanting nothing to complete their happiness, except the being sensible of \* it, owed more to the constant employment of their minds † and bodies, than to the beauty of the objects with which they were ‡ sur-

\* O fortunatos nimium, sua si bona norint, Agricolas.—Virg. Georg. II. 458.

+ At patiens operum, exiguo adfueta, juventus, — Ibidem, 472.

\$\frac{1}{2} \quad \text{at latis otia fundis,} \\
Speluncæ vivique lacus; at frigida Tempe, \\
Mugitufque boum, mollefque fub arbore fomni, \\
Non abfunt.\(----Ibid.\) 468.

rounded, or any other of the circumstances, a good \* conscience alone excepted, which the elegant pen of the Mantuan Poet has described as concurring to their felicity.

It is somewhat remarkable, that I have scarcely ever observed in the Bath Hospital any person who was desirous to prolong his stay, for the sake of enjoying a portion of idle time, which the lower ranks of people, in many situations of life, seem so much to desire; and which, in other hospitals, as I have myself witnessed, often occurs.

The length of stay, which the cases sit for the Bath Hospital require in a great majority of instances, makes the persons who are there confined more sick of inactivity, than they had been before of labour, and willing to sly, as a relief, from plentiful diet, warm rooms, comfortable accommodations, and a life without employment, to hard fare, cold apartments, scanty cloathing, and incessant labour.

It is worth notice, that this complaint, if it may be so termed, resembles, in many of its characteristical marks, the Nostalgia, so common among the Swiss, and is cured by nearly the same means.

At secura quies & nescia fallere Vita.—Ibid. 467.

Sacra Deum, sanctique patres, extrema per illos

Justitia excedens terris, vestigia fecit.—Ibid. 478.

I remarked, in the former part of this work, the mistake respecting a free diet producing this disorder. It is proper to mention here, that a nourishing warm diet, with the moderate use of fermented liquors, is as necessary in the latter stage of this complaint, as in any disease with which I am acquainted. Great pain is an exercise of the most violent kind, and produces much fatigue and exhaustion of the spirits, as appears by the tendency to sleep, which constantly accompanies the cessation, or even the abatement of pain.

Violent exercise requires strong and powerful support, and food is the only method by which support can be afforded. The hectical cases which we sometimes witness in this disorder, when it has been of long continuance, often owe their rise, as I have before observed, to a want of the necessaries of life.

Nothing that is here faid mnst be interpreted into an apology for excess of any kind. Such intemperance frustrates the end of food, and converts support and refreshment into the causes of debility and sickness. This is especially the case when spirituous liquors are employed as the means of indulgence, as they invariably tend both to embitter and to shorten life, and frequently produce, among other mischievous essects, pains in the limbs, very similar in appearance to those of the rheumatism,

tifm, but proceeding from a very different and much worfe cause.

The prevention of this diforder is an important confideration, not only in the light of humanity and general benevolence, but also in a political view.

Those to whom the defence of this country is entrusted, must, from the nature of their situation and employment, and the unavoidable hardships incident thereto, be especially liable to this disorder, which, though less destructive to life than the dysentery, or other infectious diseases incident to camps, equally tends to disable them from performing the duties of their station. Fortunately, warm cloathing is perhaps the most effectual remedy for the disorders in general which are attendant on a military life.

The good fense and humanity of our countrymen has led them to furnish a large supply of such articles to their brave defenders, and there is reason to think that no contributions could be more beneficially or economically expended. The care of the health of persons engaged in these arduous services, is far less expensive to the country than the procuring others to fill their places, whilst it contributes to obviate the depopulation which is one of the principal mischiefs of war.

Nearly the same arguments are applicable to those who have the care of the poor. By furnishing such persons with sufficient warm cloathing, they might be enabled to exert their industry, and to contribute towards their own maintenance, which exposure to cold disables them from doing, and of course enhances the expence of their support.

# CALCULATIONS

RESPECTING THE

#### USE AND SUCCESS

OF THE

# BATH WATERS,

IN

#### RHEUMATIC CASES;

EXTRACTED FROM THE

Register of the General Hospital

OF THAT CITY.

EXTENDING FROM

MAY 1, 1785, to NOVEMBER 19, 1793.

# TABLE I.

OF THE NUMBER OF PERSONS RECEIVED INTO THE BATH HOSPITAL FOR RHEUMATIC COM-PLAINTS, FROM MAY 1, 1785, to NOVEMBER 19, 1793, WHO DID OR WHO DID NOT RECEIVE BENEFIT FROM THE USE OF THE WATERS.

THE whole number of Patients admitted for this complaint, amounts to	
Of these were Cured 154)	
Much Better 167	386
Better 65)	
No Better 53	= 58
Dead 5)	
Total 444	

Of those included under the article No Better, were as follows:

Deemed improper for the use of the Waters, as being hedical, having ulcers, or what rendered confinement in an Hospital improper	13
Discharged at their own request, con- trary to the opinion and advice of the professional persons who attended them	3
Eloped from the Hospital	. 2
Total	. 18
	Of

# TABLE I. CONTINUED.

Of those included under the article  Dead, one died of the Small Pox, and  another of an intestinal disorder, to  which he had been long subject	. 2
To these add the eighteen before speci-	18
Total	20

These twenty Patients therefore, as they furnish no conclusion respecting either the efficacy or the inefficacy of the Waters, should be struck off, and the account of No Better and Dead, will then stand as follows:

No Better Dead	
	1000
Total	38

The whole account then, so corrected, will appear much more favourable to the efficacy of the Bath Waters.

Cured       154         Much Better       167         Better       65		-	386
Better	}	=	38
Total 424	,		

#### TABLE II.

OF THE STAY OF PERSONS ADMITTED FOR RHEUMATIC COMPLAINTS INTO THE BATH HOSPITAL.

THE number of days stay of the whole number of patients admitted, except as above mentioned, amounts to 47851.

This fum divided by 424, gives 112.86, or nearly 113 days for the average stay of each person indiscriminately.

The stay of the patients Cured in the Hospital, amounts in the whole to 13667 days. This sum divided by 154 (the number cured) gives 88.747, or nearly 88 days and \$\frac{2}{3}\$ for the stay of each person.

The stay of the patients discharged Much Better, amounts in the whole to 22120 days. This divided by 167 (the number discharged Much Better) gives 132.45, or nearly 132 days and ½ for the stay of each person.

The stay of the patients discharged Better, amounts in the whole to 8334 days. This sum divided by 65 (the number discharged Better) gives 128.22, or rather more than 128 days for the stay of each person.

The stay of the persons Benefited, being the aggregate of the foregoing three numbers, amounts in the whole to 44121 days. This sum divided by 386 (the number benefited) gives 114.3, or rather more than 114 days for the stay of each person.

The stay of the persons discharged No Better, amounts to 3620 days, and that of the three who died in the Hospital to 110 days. The sum of these is 3730 days, which divided by 38, gives somewhat more than 98 days for the stay of each person.

## TABLE III.

SHEWING THE PROPORTION BETWEEN THE SEXES

OF PERSONS ADMITTED FOR RHEUMATIC COMPLAINTS INTO THE BATH HOSPITAL.

NUMBER admitted in general, with exceptions as above fpecified	Men	278 146 424
Cured	Men 110 Women 44	154
Much Better		
Better		
No Better	Men 19 Women 16	35
Tead		3
	Total 4 TAB	24 LE

TABLE IV.

AGES OF RHEUMATIC PATIENTS RECEIVED INTO THE BATH HOSPITAL.

## CURED.

Class of Ages.	Ages of Individuals found in each Class.	Number of Perfons of each Age.	Number of Individuals in each Class.
CLASS I. Under 10 years old.	9Years old.	1	í
CLASS II.	10	1	
From 10 inclusive	12	1	6
to 15.	13	1	
	14	3	
CLASS III.	15	3	must be
From 15 inclusive	16	3	A Wall
to 20.	17	5	18
10	18	4	
	19	3	
CLASS IV.	20	9	
From 20 inclusive	21	3	
to 25.	22	3	26
	23	7	
	24	4	
CLASS V.	25	8	
From 25 inclusive		7	
to 30.	27	2	26
	28	6	1
	29	3	1
(	Carried up .	77	

#### CURED CONTINUED.

Class of Ages.	Ages of Individuals found in each Class.	Number of Persons of each Age.	Number of Individuals in each Class.
	Brought up	77	
CLASS VI.	30	8	
From 30 inclusive	31	2	
to 35.	32	8	26
- A	33	3	64-12
	34	5,	CHARLES AND
CLASS VII.	35	1	CLAS.
From 35 inclusive		3	our mount
to 40.	37	5	16
	38	5	LASS .
	. 39	2	Tr. mm T
CLASS VIII.	40	8	.63 63
From 40 inclusive	41	2	11
to 45.	42	2	14
	44	2	1.38.03
CLASS IX.	45	3	
From 45 inclusive	e 46	3	
to 50.	47	1	10
	48	2	
	49	1	
CLASS X.	50	5	
From 50 upwards	. 51	1	
	53	1	A STATE OF
	55	1	11
	56	1	
1	60	1	
	60	1 1	1
To	otal Cured _	154	

#### TABLE IV .- CONTINUED.

#### MUCH BETTER.

Class of Ages.	Ages of Individuals found in each Class.	Number of Persons of each Age.	Number of Individuals in each Class.
CLASS I. Under 10 Years old.	0	0	0
CLASS II. From 10 inclusive to 15.	12 14	2	3
CLASS III.	16	3	
From 15 inclusive	18	3	8
to 20.	19	2	
CLASS IV.	20	5	
From 20 inclusive	21	3	
to 25.	22	3	19
	23	3	-
	24	5	
CLASS V.	25	3	
From 25 inclusive	26	7	
to 30.	27	1	21
	28	6	
	29	4	Trum, so
CLASS VI.	30	9	
From 30 inclusive	32	6	26
to 35.	33	6	
	34	5	
Carried up 77			
			The second second second

## MUCH BETTER CONTINUED.

<i>up</i> 77  4  5  2  18  6  2
2 2 1 3
1 7 2 2 1
8 4 3 1 1
1 2 4 3 2 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2 1 2 1 2 1

## TABLE IV .- CONTINUED.

#### BETTER.

Class of Ages.	Ages of Individuals found in each Class.	Number of Persons of each Age.	Number of Individuals in each Class.
CLASS I. Under 10 Years.	7	1	1
CLASS II. From 10 inclusive to 15.	10	1	. 1
CLASS III. From 15 inclusive to 20.	16	1	1
CLASS IV. From 20 inclusive to 25.	20 22 23 24	1 2 2 3	8
CLASS V. From 25 inclusive to 30.	25 27 29	3 2 2	7
CLASS VI. From 30 inclusive to 35.	30 31 33 34	6 1 1 4	12
Ca	arried up	30	

#### BETTER CONTINUED.

Class of Ages.	Ages of Indi- viduals found in each Class.	Perfons of	Number of Individuals in each Class.
	Brought up	30	
CLASS VII.	35	1	State of the state
From 35 inclusive	36	2	
to 40.	37	1	7
	38	2	
	39	1	
CLASS VIII.	40	7	2400
From 40 inclusive	41	1	AND ADDRESS
to 45.	42	1	11
. —	43	- 1	
	44	1	
CLASS IX.	45	1	
From 45 inclusive		1	
to 50.	47	1	4
	48	1	
CLASS X.	50	3	
From 50 inclusive	52	3	
upwards.	54	1	13
1	57	2	
	62	I	- C.
-	63	3	
Tot	al Better	65	

# TABLE IV .- CONTINUED.

### NO BETTER.

	2.2			
Class of Ages.	Ages of Individuals found in each Class.	Number of Perfons of each Age.	Number of Individuals in each Class.	
CLASS I. Under 10 Years.	0	0	0	
CLASS II. From 10 inclusive to 15.	0	0	0	
CLASS III. From 15 inclusive to 20.	18	1 1	2	
CLASS IV. From 20 inclusive to 25.	21	1 1	2	
CLASS V. From 25 inclusive to 30.	25 26 28 29	1 1 1	4	
CLASS VI. From 30 inclusive to 35:	30 31 32 33	2 2 1	6	
Carried up 14				

### NO BETTER CONTINUED.

Class of Ages.	Ages of Individuals found in each Class.	Persons of	Number of Individuals in each Class.		
	Brought up.	14			
CLASS VII. From 35 inclusive to 40.	36 37	2	3		
CLASS VIII.	40	2			
From 40 inclusive		2	5		
to 45.	43	1	and the second		
CLASS IX. From 45 inclusive to 50.	45 49	1	2		
CLASS X.	54	2			
From 50 inclusive		2			
upwards.	56 58	1	8		
	61	1			
	64	1			
Total No Better 32*					

<sup>\*</sup> The ages of three of the patients discharged No Better, were omitted in the Hospital Register. Those likewise that died are not included in this account.

## TABLE V.

OF THE SEASONS OF THE YEAR AT WHICH THE BATH WATERS APPEAR TO HAVE BEEN MORE OR LESS SUCCESSFUL.

Number of Patients admitted during the Course of each Month.

	Cured.	Much Better,	Better.	No Better.
January	7	16	2	3
February	11	12	5	3
March	15	10		4
April	13	7	4 2 8	2
May	19	12	8	4 2
June	15	13	6	2
July	13	18	4	4
August	13	16	4	0
September	15	14	11	5 2
October	11	14	8	2
November	9	19	7	4
December	13	16	4	2
Total	154	167	65	35

Average Stay of Patients admitted during the Course of each Month.

	Cured Stayed.	Much Better.	Better.	No Better.
	Days.	Days.	Days.	Days.
January	82.57	119.25	122.75	108.66
February	96.36	124.9	115.2	115.
March	78.6	123.5	107.	121.8
April	93.92	121.57	116.	42.
May	86.68	141.08	87.25	76.
June	84.53	138.08	113.	67.5
July	72.3	121.17	159.2	84.25
August	18.8	148.75	149.5	-
September	107.05	138.	123,27	89.6
October	87.72	131.37	141.5	167.
November	99.67	105.3	154.28	155.
December	91.3	170.1	126.2	41.5

AVERAGE STAY OF PATIENTS ADMITTED DU-RING THE SIX SUMMER AND THE SIX WINTER MONTHS, EACH TAKEN COLLECTIVELY.

Six Summer Months.

Cured Stayed.	Much Better.	Better.	No Better.
Days.	Days.	Days.	Days,
83.481	132.358	121.99	65.258

Six Winter Months.

Cured Stayed.	Much Better.	Better.	No Better.
Days.	Days.	Days.	Days.
94.115	131.49	130.525	112.63

The fix Summer Months are accounted to be, March, April, May, June, July, August.

The fix Winter Months, September, October, November, December, January, February.

### OBSERVATIONS

RESPECTING THE FOREGOING CALCULATIONS.

### TABLE I.

THE Table here referred to affords a full and decifive testimony of the advantage to be reaped from the use of the Bath Waters in rheumatic cases. The safety of the remedy is manifested as well as its esticacy. Few, if any persons, appeared to have their complaints materially aggravated by the trial of the Waters, and the proportion of cases that terminated unfavourably, is smaller than could well be supposed. That the period here stated may not be thought to be selected as one that was particularly savourable to the essential estimated to the selected as one that was particularly favourable to the essential published, of sive years duration, and the result of each will appear as similar as could be expected in the natural sluctuation of such events.

During the period from May 1st, 1785, to November 19th, 1793, the proportion of Cured, Much Better, Better, and No Better, was to the whole number admitted, with the exceptions as above specified (424), as follows:

The persons Cured, were to the whole, as 1 to 2.7532
Those discharged Much Better, as 1 to 2.5389
Those discharged Better, as 1 to 6 5231
Those discharged No Better, as
Those who received Benefit were to the whole,
as 1 to 1.0984
Those who received Benefit, were to those who
received No Benefit, as 10.158 to 1
During

<sup>#</sup> Medicinal Effects of the Bath Waters, p. 148.

During the period from the beginning of the year 1775, to the end of the year 1779, including the space of five years, three hundred and fixty-two patients were admitted into the Bath Hospital. Of these, one hundred and twenty-seven were Cured, one hundred and forty-sour were Much Better, forty-two were Better, forty-one were No Better, and eight Died, sour of whom died of the Small Pox. This last circumstance reduces the whole number, from which any calculation should be drawn, to three hundred and fifty-eight. The relative proportions of these numbers are as follows:

The number of persons Cured, is to the whole,

1		
as as a second	1 to	2.8189
Those Much Better, as	1 to	2.4861
Those Better, as	1 to	8.5238
Those No Better, as	1 to	8.7317
The number Benefited is to the whole, as		
The number Benefited is to them who received		1
No Benefit, as	6.0	556 to 1

The fuccess of the Bath Waters, during the two periods above mentioned, does not materially differ. The proportion of persons Benefited, is considerably greater in the period which is latest in point of time; but the two most important articles, namely, of those who were discharged Cured, and those discharged Much Better, are nearly on a level.

Both these accounts prove the advantages of the Bath Hospital to the improvement of the knowledge of the effects of the Bath Waters, as well as to the immediate relief of many suffering individuals.

I have been informed by the late Mr. Wright, who was appointed Surgeon to this charity, at its first institution,

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about the year 1741, and was a most unexceptionable authority, that it was then proposed to exclude rheumatic cases from the Hospital, on the idea of their being unlikely to receive benefit from the Bath Waters; and that it was with difficulty that he and some other of his friends could prevail so far as to have a trial made. We may fairly presume that this opinion was sounded on very partial experience, and trust that no doubts will again arise on this subject, as long as the Bath Hospital, or its records, are suffered to remain.

#### TABLE II.

THIS Table requires no explanation. It affords, however, a very important piece of information, respecting the time of stay necessary to reap the advantages of this remedy. How few of those afflicted with rheumatism, who resort to this place for relief, exclusive of the Hospital Patients, make a stay of 57 days, which is no more than one-half of the average time of stay of the persons discharged Benefited! It is not therefore extraordinary that more persons, in proportion, should receive benefit in the Hospital, than in private practice.

#### TABLE III.

IT is observed by Hoffman, that women \* are more liable than men to complaints of this kind. The proportion that men bear to women in this table, would lead to an opposite conclusion, the number of men admitted being to that of women, as 1.9041 to 1.

It is however observed that women, perhaps from a shyness and modesty natural to their sex, are less forward in general to apply for admission into Hospitals, than is the case

<sup>\*</sup> Medic. Rat. Syst. de Rheumatismo.

case with men. There are, accordingly, sewer beds for women than for men, in the Bath Hospital; nevertheless the balance is kept pretty exact in point of satisfying all the applications from both sexes. The success of the Waters is rather in favour of the men, but the difference is not considerable. On the other hand, three men died, which was not the case with any women.

### TABLE IV.

THIS Table may require fome explanation. It is arranged, like the others, under the heads of Cured, Much Better, Better, and No Better. The first column of each head towards the left, contains the ages of the persons admitted who are ranked under that head. Thefe are divided into ten classes; the first containing all under ten years old, and proceeding upwards, by intervals of five years each, to fifty years, all beyond which are accounted as one class only. The fecond column contains all the ages found in each class; the third contains the number of persons of each of the ages fet down in the fecond column; and the fourth column expresses the whole number of individuals collectively, which are contained in each class. Thus, if we look at the third class, under the head of Cured, we find in the first column, that it contains all the ages from 15 inclusive to 20. The second column indicates, that there were under this head persons of the ages there set down, namely, of 15, 16, 17, 18, and of 19 years of age. The third column informs us, that there were three perfons

† As 146, the number of women admitted, is to 130, the number benefited, so is 278, the number of men admitted, to 247.53, which last would be the number of men who received benefit, supposing the proportions to have been equal. But the real number of men benefited was 256, which does not amount to a difference of proportion greater than as 31 to 30.

of 15 years old, three of 16, five of 17, four of 18, and three of 19. The fourth column gives the fum of these (namely 18), being all the persons of the ages specified in Class III. under the head of Cured.

This Table points out a period of 15 years, namely, that which extends from 20 inclusive to 35, as the most liable to the rheumatism, and at the same time the most capable of receiving relief from the Bath Waters. We find that 78 persons, out of the 154 Cured, which is rather more than one-half, were within these limits of age. Of those discharged Much Better, 66 out of 167 were comprised within the same bounds, which is in the proportion of nearly two parts out of five. Of those discharged Better, 26 out of 65 were contained within the same limits, which is exactly the proportion of two-fifths. Of those discharged No Better, 12 patients out of 32 are within these limits, which proportion is less than two-fifths, but more than one-third. It should however be observed, that this head of the Table is set down as imperfect. If we take the whole number Benefited (namely 386), we shall find that 171 of these were within the ages of 20 inclusive and thirty-five years. This proportion is nearly as 221 to 10.

If we reflect that the interval from 20 to 35 years of age, includes the most vigorous, active, and enterprising stage of life, and the one of course most exposed to inclemency, fatigue, and hardship, it will sufficiently account for the frequent appearance of a disorder which originates from such causes; and the same vigorous and active period will account for the numerous recoveries that are observed to take place from the use of a remedy, so well calculated to restore strength, and to excite the powers of life.

But though recoveries and amendments may be more frequent at the stage of life just mentioned, it is comfortable

to reflect that this disorder, even at an advanced period of life, is not incapable of relief. Eleven persons, of fifty years old and upwards, received a complete cure, and two of these were 60 years old. Under the head of those discharged Much Better, the report is considerably more flattering. Forty-one persons, all of them upwards of 50 years old, 16 of whom were above 60, two of 74, and one of 75 years of age, received great benefit, and were indeed nearly cured.

Besides these, 13 persons, all of them upwards of 50 years of age, received evident and real benefit, though not to the degree of those included under the two former heads.

Eleven persons only, upwards of 50 years old, were discharged No Better, and three died.

The proportion of those of the above age, and upwards, who received Benefit, to those who received no Benefit, is nearly as 4.6428 to 1, or somewhat more than 4½ to 1.

### TABLE V.

THE intent of this Table is to affift our judgment refpecting the feafons of the year at which the trial of the Bath Waters, in this difease, is most likely to prove successful.

We may form our judgment on this question from two circumstances, one referring to the numbers cured or relieved at particular seasons, and the other referring to the time of stay necessary to complete the cure, or produce the amendment.

I mean to examine, though in a curfory manner, each of these separately.

We find in the preceding Tables, that the numbers Cured (of those admitted during the six months of Spring and Summer) amounted to 88; whereas of those admitted during the Autumn and Winter months, 66 only were Cured, the proportion between which is nearly as 1.33334 to 1, or somewhat less than as 4 to 3.

The month of May is, as might be expected, found to be the most favourable, as the warmth of the weather at that season is, for the most part, permanently set in, and there is the longest prospect of its continuance.

The account of Patients discharged Much Better, is less favourable than the former, to the above supposition respecting the advantage of warm seasons.

Seventy-fix persons only were discharged Much Better, who were admitted during the Spring and Summer months; whereas 91 were discharged in the same state, who were admitted during the Autumn and Winter.

The account of those discharged Better, rather corroborates, in fact, what had been before advanced, respecting the advantage of warm seasons: 28 persons out of 65 having been discharged in this state, of those admitted during the Summer months, whilst 37 were so discharged of those admitted during the Autumn and Winter. The impersect nature of the relief afforded may possibly be in part owing to the unfavourable season.

Of those discharged No Better, 16 were admitted during the Spring and Summer months, and 19 during the Autumn and Winter, which in some measure corroborates the opinion before held.

The number of Patients Benefited (of those admitted during the Spring and Summer months) amounts to 192, and those not Benefited to 16. The proportion of these is as 12 to 1.

The number of Patients Benefited, of those admitted during the fix Autumn and Winter months, amounts to 197, and those not Benefited to 19. The proportion of these is as 10.393 to 1.

But the number of Patients discharged Cured, or otherwise Benefited, is not the only criterion on which our judgment respecting the seasons of the year, which are most favourable to the use of this remedy, should be founded. The time of stay necessary to procure this relief should also be taken into consideration, it being obvious, that the shorter the time in which the benefit is procured, the more effectual the remedy.

On comparing the above Table with the one now properly under examination, we shall find that the stay of the Patients dismissed Cured, who were admitted during the months of February, April, September, November, and December, exceeds the average of the Patients Cured by somewhat less than 1-10th part, whilst the remaining months fall short about 1-18th part. Also, that sour out of the five months above specified, fall in the Autumnal or Winter division. Also that the average of stay of the persons discharged Cured, who were admitted during the six Summer months, falls short of the general average about 1-17th part, whereas the stay of those admitted during the six Winter months

months exceeds it rather more than that proportion. That the whole difference of stay between those admitted during the Summer, and those admitted during the Winter months, amounts to full ten days, a time sufficient to authorise a decided opinion in favour of the former.

The time of stay of those discharged Much Better, varies but little from the general average.

Under the head of Better, the time of stay amounts to about 1-12th part, or nearly ten days, in favour of the Summer months.

If then we take both the above circumstances conjointly, namely, the difference of the number of Patients, and the difference of the time of stay, it affords sufficient foundation for our judgment respecting this question.

I have thus finished what I meant to say on this subject. Little more than a plain statement of facts was meant to be delivered, and these expressed in as plain and intelligible a manner as I was able. This has, I apprehend, rendered the style less agreeable than might be wished, from the repetitions which are often necessary to render the sense unambiguous. If, however, the meaning be clear, the reader will, I trust, be disposed to excuse the other desect in a work which aims professedly at no more than being a narrative of events, with the addition of such conclusions only as were natural and obvious.

FINIS.







