A practical dissertation on the medicinal effects of the Bath waters / by William Falconer.

Contributors

Falconer, William, 1744-1824.

Publication/Creation

Bath : Printed by and for W. Meyler, 1807.

Persistent URL

https://wellcomecollection.org/works/kntafygx

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

wellcome collection

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

22,173/B

L LXIII 14

47044

A

PRACTICAL DISSERTATION

ON THE

MEDICINAL EFFECTS

OF

THE BATH WATERS.

BY

WILLIAM FALCONER, M.D. F.R.S.

AND PHYSICIAN TO THE BATH HOSPITAL.

DUM DELIBERAMUS QUANDO INCIPIENDUM, INCIPERE JAM SERUM FIT.—*Quintilian.*

THE

THIRD EDITION, WITH CONSIDERABLE ADDITIONS,

RESPECTING THE

USE OF THE WATERS IN HIP CASES.

BATH:

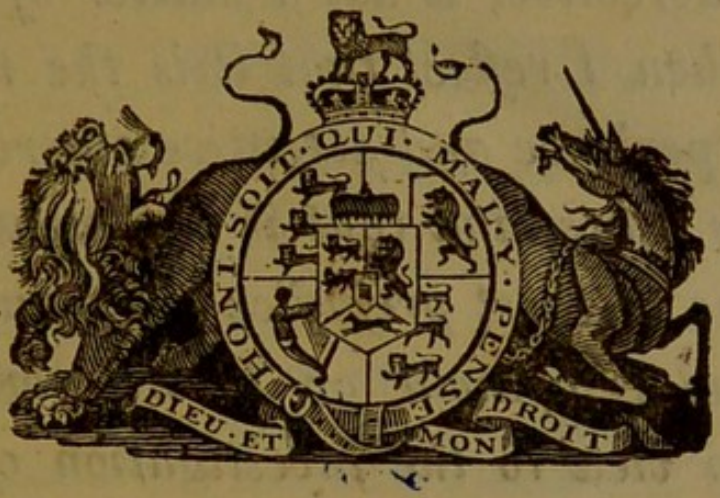
PRINTED BY AND FOR W. MEYLER;

AND SOLD BY

G. ROBINSON, 25, PATER-NOSTER-ROW, LONDON.

1807.

WELLCOME
HISTORICAL
MEDICAL
LIBRARY



TO

THE KING.

SIR,

THE Work I have the honour of your Majesty's permission to present to your notice is, an attempt to investigate from experience the Medicinal Properties of the Bath Waters;—a remedy confessedly of more general efficacy than any that can properly be called the indigenous produce of your native kingdom of Great Britain.

That such a work should be in several instances erroneous, and probably in many more defective, is not a matter of doubt; but when I reflect that it is the result of the experience and attentive observation of twenty years, and that it is composed without the smallest prejudice in favour of any particular opinion or theory, but solely with a view to the investigation of truth, and the promoting of medical information, I do not despair of its finding a favourable reception from your Majesty's candour and benevolence.

That your Majesty's reign may be long and happy, is the wish of none more than of

Your faithful Subject

and Servant,

William Falconer.

Bath, Jan. 1, 1790.

CONTENTS.

PREFACE .. .. ix.

EXPERIMENTS—I. Acid of sugar .... xxiv.

——— II. Salited terra ponderosa .... .. *ib.*

——— III. Phlogisticated alkali .... xxv.

——— IV. .. .. xxvi.

——— V. and VI. .. .. xxvii.

——— VII. and VIII. .... xxviii.

TABLE I. Comparison of the mineral waters, with others used in diet in this City, &c. &c. .... xxix.

TABLE II. Ditto ditto ditto xxx.

Table III. Ditto ditto ditto xxxi.

EFFECTS of the Bath waters internally taken 1

Bath waters stimulant 2

——— astringent 4

——— diuretic .. .. *ib.*

——— diaphoretic 5

——— antispasmodic .. .. *ib.*

Effects of the external application of the Bath waters .. 6

Bath waters as detergents .... *ib.*

Specific powers of the Bath waters 7

Stimulant effects of the Bath waters used externally .... *ib.*

Antispasmodic qualities of the Bath waters used externally 8

Bath waters externally used less diaphoretic than common water 9
Bath waters where indicated 10
———— in Chlorosis 11
Signs of the use of the Bath waters being likely to be successful 13
Signs of the water disagreeing with the nature of the disorder 14
Means by which the waters may be rendered agreeable to the stomach, and serviceable to health 15
What purgatives are proper during the use of the Bath waters 16
Use of the warm bath in Chlorosis 17
Time proper for a trial of the Bath waters 18
Choice of the several springs 20
Season of the year most proper for the use of the Bath waters 21
Exercise proper during the use of the Bath waters 22
Use of the Bath waters in visceral obstructions .. .... *ib.*
Cautions respecting the use of the waters in visceral obstructions 25
Use of the waters externally in visceral obstructions 27
Heat of the bath proper to be used 28
Cautions respecting the management of the waters 29
Bath waters whether likely to succeed in obstructions of the viscera, proceeding from intemperance 30
Use of the Bath waters in visceral obstructions arising from hot climates 31
Use of the Bath waters in palsy 34
Use of the waters in idiopathic palsy 35
External use of the Bath waters in idiopathic palsies .. 39
Quantity in which the Bath waters should be taken, &c. .. 44
Cautions respecting the use of the bath 45

Use of the pump 47
Time of using the baths 48
Season of the year best adapted to a trial of the waters 49
Exercise of the limbs in the bath .... *ib.*
Length of the time proper for the bath to be continued 50
In palsy from an evident cause 52
In palsy from cold 53
In palsy from heat 54
Palsy from external accident .... *ib.*
Distortion of the vertebræ from disease, sometimes attended with palsy 55
Palsy caused by lightning 58
Palsy from mineral substances, viz. lead, copper, mercury, &c. 59-64
Palsy from fever 65
——— rheumatism 68
——— lying-in 69
Use of the Bath waters in gout 75
Stage of the disorder most proper for trial of the waters .. 82
External use of the Bath waters in gout 89
Use of the Bath waters in rheumatism 96
——— the chronic rheumatism 99
——— hip cases 101
——— white swellings of the knee 107
——— weakness of the organs of digestion .. .. *ib.*
——— the hysteric colic 111
——— colic of Poictiers .... *ib.*
——— jaundice from biliary calculi .. 112
Antispasmodic qualities of the waters 113
Use of the Bath waters in hypochondriasis .... .. *ib.*
——— hysterical complaints 114
——— St. Vitus' dance 115

Use of the Bath waters in painful menstruation 116
Diaphoretic qualities of the Bath waters .. .. *ib.*
Use of the Bath waters in the lepra 117
Circumstances in which the Bath waters are contraindicated 125

PREFACE.

THE present Work is meant to be a Practical Account of the Medicinal Effects of the Bath Waters, collected from the experience and observation of more than twenty years. Time has, however, by no means cleared up all the doubts which I entertained, when I first ventured on this arduous subject. In some instances, indeed, the effects of the waters, and the consequent application of them, appear to be more clearly defined; but in many others knowledge seems to extend little farther than such a probability as will warrant or encourage a cautious trial. Nor do they in this respect differ from other powerful medicines. Reasonable conjecture must be the

foundation of the application of the majority of the remedies used in physic; and though, in some instances, repeated experience has enabled us to advance a step farther, those best acquainted with the science, best know how moderate a confidence such experience as can fall to the lot of an individual ought to afford.

Those who have written specific treatises on the virtues of particular remedies, have contributed much to mislead the opinions of mankind concerning their efficacy. Medicinal substances seem to be selected rather as subjects of panegyric, than of impartial examination. Sometimes unworthy motives, and at others the caprice of prejudice, joined with a sanguine disposition of mind, have contributed to cherish this empirical presumption, and to corrupt the fountains of information derived from matters of fact, nearly as much as those that spring from the most fanciful theory. When we peruse the cases which have been the subjects of such trials, we are apt to think the character of the favourite remedy fully established, until melancholy experience replaces it in its true station, by teaching us, that it is possible, by florid description, amplification of

success, and suppression of unfavourable events and circumstances, to mislead almost as effectually as by advancing a positive falshood.

Even those authors who have treated at large of the Materia Medica, and whom we could scarcely suspect of any undue predilection for a favourite remedy, have indulged by far too lavish in commendation of substances, to which the candid and uniform experience of practitioners does not attribute such virtues. Could it be imagined that BOERHAAVE, whose integrity was equally celebrated with his medical discernment, should be so far misled by authority, as to recommend such a plant as *Rue* for its qualities in *curing epilepsis, and expelling poison*; and that the last of these qualities (an indication confessedly of the most indefinite nature) should be in some measure ascribed to the same substance, by such writers as MURRAY and BERGIUS?

Amid such profusion of applause, Mineral Waters have not been neglected. Not those only whose moderate encomium time and experience have, in some circumstances of health justified, have been

"*High above desert renown'd*;"

but nearly the same virtues have been attributed to others on scarcely any better grounds than that they were unfit for use in diet, or other domestic purposes.

Providence has, no doubt, scattered remedies of this kind (as well as other blessings) in various places, which may in many instances conduce to relieve disease ; but prejudice and interested motives have so disguised the narratives of their efficacy, as to embarrass to a great degree the choice of them among those whose profession entitles them to recommend their use. It would be prudent, as well as conscientious, in those who write such encomiums, to reflect that mineral waters, like other medicinal substances, are appropriated to certain indications only, and that the more powerfully they fulfil these, the greater mischief they are capable of producing if improperly administered. The latter of these considerations is, however, seldom attended to. Successful cases are carefully noticed, but those wherein they have been observed to be injurious, are generally concealed. This mode of procedure may induce more persons to make the trial, but must diminish the proportion of benefit received.

Mineral waters, like other medicines, are not adapted to disorders at large, but to certain stages and situations of them; and what may be of the greatest service in one stage, may be utterly improper in one that is more advanced. Disorders likewise are often combined, and a remedy that may suit the one, may be hurtful in the other. No satisfactory information concerning such remedies can therefore be had, unless observations be with equal care collected and related, concerning the bad as well as good effects that they produce. If mineral waters are described as capable of doing good only, without the power of doing harm, we may be satisfied either that the account is misrepresented, or that their qualities are too insignificant to merit notice.

Whether, in the ensuing work, I may not have committed the same faults I have so freely condemned in others, I leave to the judgment of the public to determine. I can only allege, that I am not conscious of any misrepresentation, and have endeavoured to guard against it as much as possible. In many disorders the number of instances of the success of the waters is related together with that of

their failures, from an unquestionable authority, the register of the General Hospital of this city, in which I can assert, from personal knowledge, that the utmost candour is employed in representing the effects of these waters.

Such sources of information have no doubt improved, and (if duly attended to) will unquestionably continue to improve our knowledge respecting the disorders to which this remedy is adapted, and the proper management of its efficacious powers; but to what part of its impregnation, or to what combination of medicinal influence arising from the combined properties of the impregnating parts, such wonderful effects as we see here every day produced are owing, knowledge has, I apprehend, supplied, as yet, subject for conjecture only.

Chemistry informs us, that the Bath waters contain a small portion of common salt, a larger proportion of selenites, perhaps some unneutralized earth, a portion of fixible air, and some sulphureous gas, or inflammable air, together with a slight chalybeate impregnation; all which substances, either combined or separately taken, we have no reason to believe

possess in the quantity they can here be administered, medicinal powers at all adequate to the effects we so frequently see produced by the Bath waters, and are moreover contained in several mineral waters of slight efficacy or activity in much larger quantity than in those of this place.

Chemical analysis therefore, as far as it has hitherto been prosecuted, seems to give us a very imperfect view of the methods by which these effects have been produced; and this circumstance has induced several persons to deny the truth of the facts altogether, or to represent them as highly exaggerated, and that such advantages (if any) as might in truth be received, were owing to collateral circumstances of uncertain and indeterminate efficacy, as change of air, diet, manner of life, and the like.

That the regularity of regimen usually practised here, compared with that generally followed in the polite circles of London, may on many occasions contribute to health, is highly probable; but to attribute all the good effects we see produced here, to observances that refer to general health, I cannot but regard

as a proceeding no less irrational than presumptuous. Scarcely any facts in natural philosophy are better ascertained, than the effects of the Bath waters, in many cases of a local and specific nature, far beyond the reach of any of the attentions above referred to; and we might on similar grounds deny any of the best known processes in nature, (vegetation for instance) because we cannot comprehend the means and steps by which it is conducted.

Whether farther light may not be thrown on this subject by some chemical discoveries that are daily advancing, or whether it may remain among the secrets of nature too deep for our successful investigation, I do not presume even to offer an opinion. Many discoveries have no doubt been made, that were beyond our expectations, and even hopes; and, perhaps, repeated diligence may discover some hidden agent in these wonderful compositions of nature, to which a large share of their powers may be with more plausibility ascribed, than to any at present known. With a view to promote such inquiry, I have, at the end of this Preface, subjoined some chemical experiments, in addition to those I formerly published in the

Essay on the Bath Waters, together with a pretty accurate account of the specific gravity of the Bath mineral waters, compared with that of distilled water, and the other waters used in diet in this city.

Mineral waters, however, though their value be frequently exaggerated, sometimes have it equally unreasonably depreciated. The good effects arising from their use require some time of trial in order to manifest themselves.

This is particularly the case with the Bath waters, and must be in some measure with all remedies that are employed for chronical complaints. This circumstance, however, together with that of their seldom producing any immediate or visible operation on the body, has induced many persons to despair of success, before a sufficient trial of their efficacy could be had; and to represent them as unserviceable in disorders, wherein we know from experience they are in most instances capable of being highly beneficial. Every medical practitioner in this city will, I think, agree with me, that a very large proportion of those who visit this place on account of their health, do not stay a sufficient time to reap the

whole of the advantages that the remedy is capable of imparting; and many scarcely long enough to determine if the nature of the disease was at all suited to the use of the waters. The time of stay (and of course the space of time in which a cure or considerable relief is expected) is generally determined previously to the patient's setting out; and this period is often so unalterably settled, that no future contingencies (extreme necessity excepted) prevail upon them to alter their plan and arrangement.

Nor is this calculation of the time of stay derived in general from any consideration of the nature of the disease, or its violence or inveteracy, but much more frequently from motives of mere caprice. To many who resort hither, the expense necessarily attending a long stay must be an important object of consideration; but in my experience, I have usually found such persons more disposed to give the waters a fair trial in point of time, than those with whom such expense was a matter of no moment. Nor is this difficult to be accounted for. Those who possess riches and plenty are but too apt to over-rate their influence, and to

imagine such advantages capable of commanding circumstances over which they have no power; and of course to bear disappointments worse than those whose inferiority in these respects leads them to make a more moderate estimate of the advantages attending their own situation.

It is commonly observed, that nothing contributes more than impatience to frustrate its own endeavours. Unreasonable expectations are apt to lead us to contemn or forego such advantages as may be really attainable by time, patience, and perseverance. It would be conducive to the health of the body, as well as the ease of the mind, if invalids, (those especially who are afflicted with chronical complaints) would reflect, that every degree of amendment is worth acquiring, and that ease and mitigation of the most urgent and troublesome symptoms may be valuable, when a cure is not an object of expectation, or even of reasonable hope.

A due attention towards keeping the mind from sinking into despair, and from indulging extravagant expectations, (two mental complaints, however apparently opposite, in

reality nearly allied) would scarcely contribute less towards securing the enjoyment of life than to the prolonging of its duration.

It must indeed be acknowledged, that several complaints for which the Bath waters are advised, are such as in their natural consequences affect the mind and temper very considerably, and tend particularly to produce impatience and uneasiness. Reflection and due consideration may, however, moderate, if not subdue this disposition, and incline the sick to take no steps that may disappoint reasonable expectations of benefit, although the degree of it should not correspond with their too sanguine hopes.

The situation of a physician is in such cases particularly delicate. No man who sets a proper value on his professional, or even his moral character, will give those assurances of success which the vehemence of impatience, stimulated by *disease* and doubt, is apt to demand as a condition to even a reasonable trial of the efficacy of the waters.

The rational and moderate hopes of amendment, which alone are justified and dictated by prudence, reflection, and experience, appear

to such persons too uncertain or too remote to compensate the tediousness of expectation, and the imperfect nature of the relief they are taught to expect.

Quacks and their connections are seldom wanting in vigilance to seize the favourable opportunities which this state of the mind offers, and some officious *pretended* friend of the sick but *in reality* of the quack, is ever ready to intrude, and to vouch for the efficacy of some nostrum in cases *exactly* similar to that of the patient, be that what it may. Those who apply for such assistance would do well to observe, that amendment and mitigation are words not found in an empirical vocabulary. Their promises never fall short of a complete cure, and every amendment beneath that point is deemed unworthy their regard. Experience has confirmed the lucrative policy of such conduct, however unworthy it may appear, and it is now I believe universally practised.

The manifest improbability of any events taking place, is often the cause why it finds credit, if supported with vehement assertion and audacious impetuosity. The weak and timid are overborne and confounded by the

violence of asseveration, and those who pretend to think for themselves, are often deluded by the argument (common enough indeed, but daily refuted by experience) that no man would risque his character on such bold assertions unless they were founded in truth.

Medical observation indeed furnishes instances sufficient of the failure of empirical promises; but such frauds (for they merit no better name) are seldom resented with the indignation that might be expected in a matter of such consequence. The cause of this I take to be, that few are willing to expose themselves to the ridicule which is apt to be cast on such as are over-reached by trusting to such assurances; and that the desire to avoid such a humiliating circumstance, often prompts those who make such trials to magnify every amendment, however slight or casual, and to conceal every failure of success or injury that may follow the trial of the medicine.

The best advice that could be given respecting the above-mentioned articles, to those who resort to these waters for relief, would be to cherish general hopes of amendment only, but not to indulge expectations of attaining to any

specific degree of recovery. Every improvement of the health would then be acceptable, and add to the spirits and satisfaction of the patient; whereas as matters are generally circumstanced, slight amendments often give disappointment rather than pleasure, as being inadequate to the degree of relief expected.

Persons in an advanced age, and labouring under chronical diseases, are apt to forget that increase of age, after a certain period of life, brings decay along with it, independent of positive malady, and that such a decay may not be considered as a disorder of itself, but as a circumstance that must in every instance protract recovery; and particularly where the regaining of vigour and strength was the point aimed at.

Another counsel equally useful would, I apprehend, be, where it could be complied with in point of circumstances, to leave the determination of the time of stay, as well as the management of the waters in other respects to the physician, whose judgment in this, has as good right to be consulted as in any other article.

ADDITIONAL EXPERIMENTS

TO THOSE BEFORE MADE

ON THE BATH WATERS.

Experiment I.

ACID OF SUGAR.

Three grains of acid of sugar in chrystals, were severally added to eight ounces by measure of the waters of the King's, Hot, and Cross Baths, fresh from the spring. A white precipitation took place in each, seemingly composed of fine white parallel threads and appeared in greatest quantity in the Hot-Bath water, next in that of the King's, and least of any in the Cross-Bath water.

Experiment II.

SALITED TERRA PONDEROSA.

To eight ounces of the water of the several baths fresh from the spring were added five drops of salited terra ponderosa. A white cloud immediately generated in each, which

soon rendered the whole of the liquor milky and turbid, but I could not discern in which it was the most plentiful.

Experiment III.

PHLOGISTICATED ALKALI.

Ten drops of a solution of phlogisticated vegetable alkali were let fall severally into a pint of each of the mineral waters, and afterwards a few drops of the vitriolic acid were added to each. A bluish green tinge was soon produced in each, of a light hue, and which did not affect the transparency of the fluid.

In the year 1784, the buildings that formed the Cross-Bath were taken down, in order to be rebuilt. Whilst this was going on, several interstices in the lower parts of the building, contiguous to the channel by which the water was discharged from the bath, but above the level of its course, were dicovered, to the sides and top of which adhered a considerable quantity of a crystallized substance mostly in form of pyramids, composed of many striæ or layers of different lengths, and in general of a brown

colour, though some of the largest pieces were beautifully variegated with several of the prismatic colours. It had no sensible smell. It appeared that the cavities in which this substance was found, though above the level of the water, were much exposed to the steam arising from it, they being found full of vapour when opened.

Experiment IV.

A small piece of the foregoing substance, weighing six grains and a half, was held in the flame of a tallow candle for four minutes, during the greater part of which time it emitted a strong sulphureous smell, and gave out a blue flame, and a great deal of smoke for its bulk. When the smoke and flame had ceased, and the substance was become fully red-hot, I took it from the candle, and again weighed it. It then weighed five grains, and was changed to a reddish ochery colour, and was very friable, but not apparently diminished in bulk. I then powdered it, and applied the artificial magnet, and found the particles attracted by

it, insomuch that by repeated application of a weak magnet, I could take up the whole. During the powdering it exhaled an evident sulphureous smell, though in its original form it was perfectly inodorous.

Experiment V.

A piece of the same substance, a few grains only in weight, was put upon a clean piece of earthen-ware heated red-hot. It exhaled a sulphureous smell, but did not change to a red colour, as in the preceding experiment.

Experiment VI.

Twelve grains of the above-mentioned substances were finely powdered, and added to twelve ounces of distilled water heated to about a hundred and twelve degrees, and the bottle shaken up. After standing about half an hour, the liquor became clear, and was examined. It had an evident chalybeate taste, and on adding to two ounces of it, four drops of tincture of galls, a purple colour was

produced, nearly of the same tinge which is produced in similar circumstances by the King's-Bath water.

Experiment VII.

To two ounces of the same water I added four drops of a solution of phlogisticated alkali, and afterwards a few drops of oil of vitriol. A blue colour of a pretty deep tinge was soon produced.

Experiment VIII.

A piece of writing paper, rubbed with the above substance finely powdered, was set on fire. It burnt with a sulphureous smell, and emitted sparks resembling those observed in fireworks, which are produced by filings of iron.

Table I.*

Of the proportionable specific gravity, which the Mineral Waters and the others used in diet in this city bear to Distilled Water, expressed in decimal parts.

Distilled Water . .	1.0000	NEARLY.
River Water . . .	1.0008	
Circus Reservoir .	1.0008	
Claverton Reservoir .	1.0010	
Beechen-Cliff Reservoir	1.0000	
Common Pump Water	1.0016	
Pump in the Grove† .	1.0009	
King's-Bath Water .	1.0020	
Hot-Bath Water . .	1.0020	
Cross-Bath Water . .	1.0018	

* The experiments relating to the specific gravity of the several waters were made with a glass vessel, which I procured to be blown on purpose, in shape like the bulb of a thermometer, with a foot to stand upon, and about eight ounces and a half contents, with a neck about four inches long, and tapering at the end, so that the extreme orifice was about the size of a large pin. By these means I could ascertain to a great minuteness its holding the same quantity every time it was filled, which could not have been done had a vessel with a wide mouth been used. The vessel, when empty, weighed exactly 2886 grains troy weight, and when filled with distilled water, weighed 6829 grains.

Dr. Lewis has said that a pint of distilled water weighs 7310 grains. If then we say, as 7310 grains is to 128 drachms of measure (the number contained in a pint) so is 3943 grains (the

Table II.

Of the number of grains in a pint which the Mineral and other Waters of this City exceed Distilled Water.

River Water . . . five grains and a half

weight of the contents of the measure in distilled water) to 69.343 drachms of measure, which last sum gives the contents, in measure, of the glass.

Again, if we say as 69.043 drachms of measure is to 3949.5 grains, (the weight of the contents of the measure in pump water) so is 128 drachms by measure to 7322.1 grains. A pint therefore of the common pump water is twelve grains and one tenth heavier than a like quantity of distilled water. The excess in weight of a pint of the several waters examined above the same quantity of distilled water, is expressed in Table II.

Table I. was formed by deducting the logarithm of 3943. from the logarithm of the number of grains in a measure of the other waters examined. The mineral waters were weighed after they had grown cold. The others were weighed fresh from the spring. I am inclined to suspect some error in the calculations made by Dr. Lewis of the relative weight of distilled water, rain water, and pump water; he estimates them thus: A pint of rain water weighs 7360 grains, or 50 grains in a pint more than distilled water; a difference incredible, as rain water approaches, by the consent of all writers, very nearly to distilled. A pint of spring water is accounted to weigh 7392 grains, or 82 grains in a pint heavier than distilled water. Haller, indeed, mentions a water at Rostock in Germany, that weighed 88 grains in a pint heavier than distilled water, but he condemns it as bad. The proportion of specific gravity in decimal parts is—Distilled Water 1.0000, Rain Water 1.0068, Spring Water 1.0104.

† The water of this pump is commended by Dr. Oliver, sen. See his Work on the Bath Waters, p. 139.

Circus Water . .	five grains and a half
City Reservoir . .	seven grains four tenths
Beechen-Cliff Reservoir	8 grains three-tenths
Beacon-Hill Reservoir	7 grains four-tenths
Pump Water . .	12 grains one-tenth
Pump in the Grove .	six grains and a half
King's-Bath Water .	twenty-six grains
Hot-Bath Water .	twenty-six grains
Cross-Bath Water .	24 grains one-tenth.

Table III.*

Of the gross contents of the Waters, according to the quantity left on evaporation.

A Pint of the	Circus Water left	2.125 grains.
————	City Reservoir ..	.8125
————	Beechen Cliff . .	.75
————	Beacon-Hill . .	2.625
————	Pump Water . .	1.8125
————	King's-Bath . .	8.9583

* I have put down this Table, as being deduced from actual experiment, though no great dependence is to be laid upon it. The specific gravity of the several waters shews that a large proportion of the impregnating matter must have been dissipated during the evaporation. Some conjecture might, perhaps, be formed concerning the proportion of solid contents which the

A Pint of Hot-Bath Water left 9.8125 grains.
——— Cross-Bath 10.729

several mineral waters contain respectively to one another, as the several experiments were made in the same vessel, and of course were all influenced equally by the shape of it, which is known to have a great effect in altering the quantity of residuum left on evaporation. The heat likewise is of great consequence, but I can by no means venture to say that this was regularly kept up through the processes referred to.

ON

THE MEDICINAL EFFECTS

OF THE

BATH WATERS.

THE Bath waters, it is well known, are both drank, and employed as baths, with a medicinal intention. I shall consider their effects when used in each of these ways, as nearly together as possible, so as to be consistent with the order necessary to be observed in treating such a subject.

EFFECTS OF THE
Bath Waters internally taken.

THE Bath waters, when drank fresh from the spring, and in the quantity of a pint (which is the usual quantity taken in a day) in divided doses, has in most persons the effect of raising and rather accelerating the pulse, increasing the heat, and excit-

ing the secretions.* Hence they may, in medical expression, be justly accounted stimulant.

Bath Waters Stimulant.

This term is however of large extent, and in a medical view comprehends a great variety of operations differing much from one another both in nature and degree. The stimulating quality possessed by the Bath waters appears to be of a very diffusible kind. Their effects are felt at the same time upon the nervous system, upon that of the blood-vessels, and upon the alimentary canal. Hence, probably, their influence is exerted rather through the medium of the sensations, than by any immediate effects they produce upon the moving fibres.

Perhaps this diffusibility of stimulus may be in some measure owing to the form in which the medicine is exhibited. Being in a liquid state, its effects are more easily dispersed over the system, than they would be were the existing substance in a state that required to be dissolved previous to the exertion of its powers.

For the same reason, the stimulant effects of the Bath waters take place very quickly after their being administered. I have found the pulse to have been

* The Bath waters not only promote urine and perspiration, but are found to increase the salivary discharge. Hence they are found, in cases where there is no tendency to fever, to quench thirst better than any other fluid.

raised and accelerated, and a sensible increase of the heat of the body to take place, in the space of a few minutes after the drinking them.

The above-mentioned effects of the Bath waters are more permanent than might be expected from their being so suddenly exerted. The heat of the body, and increase of pulse, often continue much longer than we can suppose them to be excited by the actual presence of the water in the body.

The stimulant qualities of the Bath waters appear to partake very much of an inflammatory tendency. A disposition of the system to fever, especially if it be of the hectic kind, is generally aggravated by it, and local inflammations are increased.

This tendency of the waters is liable to great variation, from idiosyncrasy, or peculiarity in the habit of the persons who use them. I have seen persons to whose stomachs they were particularly grateful and strengthening, who were debarred from their use even in small quantities, by their constantly exciting a fever after the use of them was commenced, although no apparent tendency to fever in the habit of the body had previously subsisted.

This quality is thought to be possessed in a greater degree by the water of the King's and of the Hot-Baths, than by that of the Cross-Bath; and this opinion appears to be found in observation. Some think the King's-Bath water more heating in general than that of the Hot-Bath, but I apprehend the

difference is not great, else it would be determined with greater certainty.

Bath Waters Astringent.

Astringency is another quality commonly ascribed to the Bath waters; and it must be owned that costiveness frequently accompanies the use of them. But I am rather inclined to ascribe this effect to their heating qualities, and to their power of exciting the other secretions, than to any positively astringent quality. In cold weather, when the perspiratory secretion is checked, the Bath waters (probably by means of their bulk and weight) sometimes prove slightly purgative.

The King's-Bath water is thought to possess the astringent quality in the greatest, and that of the Hot-Bath in the smallest degree. But I am not certain that these minute distinctions are not rather fanciful than true. The difference is certainly very small.

Bath Waters Diuretic.

The Bath waters likewise possess a diuretic quality. This is observed by most of those who make a trial of them, and is generally esteemed (and I believe with justice) the best method of their passing off, and what indicates with greatest probability that the patient will be benefited by the use of them. They possess this quality without seeming to exert

any sensible stimulus on the urinary organs. It is owing, no doubt, in part, to the additional quantity of a thin fluid taken in; but the waters are certainly endued with a diuretic power independent of this circumstance, as the water shews but little of this effect, if it is not drank immediately as it is drawn from the spring. The Cross-Bath water is generally thought to be the most diuretic of any, but the difference is not great.

Bath Waters Diaphoretic.

The Bath waters are likewise diaphoretic. This quality, however, is not, I think, so evident as the last-mentioned, it depending more upon the regimen of life, and other circumstances in which the waters are taken. Some effects, however, of this kind they undoubtedly possess.

Bath Waters Antispasmodic.

The Bath waters are likewise endued with an antispasmodic quality. This is manifested by their good effects in the Colica Pictonum, and those convulsive retchings to vomit, which often attend the gout in the stomach, and in many other instances. Whether this quality be owing to their stimulus, which is rather of the inflammatory kind, (which tendency seems, in many instances, to counteract spasmodic complaints) I shall not determine.

Such are, as I apprehend, the primary and immediate effects of the Bath waters internally taken.

Let us now take a view of the effects produced by their external application.

EFFECTS OF THE

External Application of the Bath Waters.

THE Bath waters may be considered as warm baths from about a hundred and six degrees of heat, to any inferior degree of warmth that may be desired. When regarded simply as warm baths, their advantages over such as are artificially heated are not inconsiderable. The quantity of water yielded by the springs affords opportunities for the construction of baths of a size sufficient to admit of motion and exercise of the limbs in walking; and the plentiful stream that supplies the public baths, (the King's-Bath especially) and yields an ample sufficiency for filling the private baths with fresh water for each individual that uses them, is highly flattering to delicacy.

These conveniences, however, are less the subject of the present consideration, than the peculiar and specific qualities which these waters are thought to possess.

Bath Waters as Detergents.

The Bath waters, considered as detergents, are inferior to common water. They curdle soap, and are found improper for washing linen, and other domestic

purposes for which this quality is required. Of course, therefore, a bath of common water would be preferable in cases where the cleansing the skin was the sole object. This indication, however, seldom occurs in medicine, and the difference in this respect is too small to merit regard.

It appears likewise to relax and soften the cuticle less than a bath of simple water, probably on account of its metallic and saline ingredients.—But this difference also is too small to be of much consequence in medicine. The rarefying effects of the Bath waters upon the animal fluids cannot, it is obvious, differ from those of common water of the same degree of heat.

Specific Powers of the Bath Waters.

It appears then, that the mechanical operation of the Bath waters upon the body does not differ materially from that of common water; but when we consider their action upon the nervous system, the variation is more evident.

Stimulant Effects of the Bath Waters used Externally.

The Bath waters, externally used, are more stimulant than common water. I have found the pulse and heat of the body increased in a sensibly greater degree by bathing in the Bath water, than it was by a bath of common water. Sudden sweat and faintness, which often come on after using a bath of com-

mon water of a considerable degree of heat, rarely come on after the use of the Bath waters; but the bathers are observed to be in general more alert and vigorous, and to have a better appetite, on the days of bathing than in the intervals.

The Bath guides likewise, many of whom remain almost every morning several hours immersed nearly up to the neck in the baths, do not appear to be relaxed or weakened by such a practice, but are on the contrary, in general, robust, vigorous, and long-lived, and most of them inclining to corpulency.

Antispasmodic Qualities of the Bath Waters used Externally.

I am inclined to think the Bath water externally applied to be more antispasmodic than common water would be if applied in a similar manner. But here I would be understood to mean such cases only in which stimulant applications are proper, as its superior antispasmodic quality seems to depend in a good measure on the greater stimulating power which it possesses. A comparative proof of this quality is difficult to be deduced from experiment, since simple warm water possesses it in a considerable degree. But the quick and even sudden relief of spasmodic disorders of such a nature as to admit of a trial of stimulating remedies, and the great antispasmodic powers of the Bath waters internally taken, give us the greatest reason to expect that these powers may produce their proper and

specific effects, even when the remedy is externally applied, and experience seems to shew that this opinion is well founded.

Bath Waters externally used less Diaphoretic than common Water.

I am disposed to believe that the Bath water is much less apt to produce violent perspiration than a bath of common water, having observed several persons, whose strength was unable to endure a large discharge of this kind bear bathing in the public baths at this place without any loss, but on the contrary, with an increase of strength. This might be in part owing to the specific qualities of the water, but I believe it was to be ascribed principally to the diminution of the perspiratory discharge.

I have before mentioned that the tendency to perspiration in the day-time is much less during the day of bathing than when the common water is used, and I likewise find that it promotes the diuretic evacuation considerably more than is done by common water; which seldom takes place when the discharge by perspiration is increased at the same time.

It has been found by experience, that when the heat of a warm bath of common water exceeds 93 degrees, that the urinary discharge is not increased; but the public baths of this place (two

of which considerably exceed this degree of heat) are found to excite very powerfully the urinary secretion.

Of the Circumstances and Disorders in which the use of the Bath Waters is indicated.

HAVING thus premised somewhat of a general view of the Bath waters, I shall next consider the indications which they are adapted to fulfil, with an application to particular disorders, and shall subjoin some observations on the cases in which they are contra-indicated, or wherein they are likely to be unserviceable.

Bath Waters where indicated.

The use of the Bath waters is indicated in cases of languor arising from inertia, whether this be of the system in general, or any particular part, as of the blood-vessels, nervous system, or of the alimentary canal.

Thus they are found useful in such cases of permanent languor as usually go under the name of cachectic.

In Chlorosis.

The most common of these is the Chlorosis incident to women; a complaint which (together with menstrual obstructions) is usually attended with a weak low pulse, diminution of bodily strength, depravation of appetite and digestion, paleness of countenance and the body in general, coldness of the extremities, often attended with swelling, and great languor of the powers of the mind as well as of those of the body.

In this stage of the complaint the internal use of the Bath waters is found by experience to be (what we might rationally conclude from its primary effects that it would) of the greatest service, exciting the slow and languid efforts of nature, raising the pulse, cheering the spirits, and exciting the natural secretions. They are, however, found most successful when tried before any considerable affection of the stomach takes place; and that organ possesses strength sufficient to retain a proper quantity of the waters, and disperse through the system their effects.*

The Bath waters are likewise useful in the more advanced stages of this complaint, which are often

* Hoffman makes a similar observation relative to the Carlsbad Waters:

"Locum vero habant hæ aquæ, si ventriliçus adhuc est sal-
"vus, ipsa, ipsarumque copiam aquarum ferre et fubigere
"potest."—*Hoffm. de Chlorosis indole, &c.*

attended with obstruction of the abdominal viscera, as of the liver, spleen, and mesentery. In all of these, if used before any fever or hectic disposition takes place, they are often (when cautiously exhibited) of great service, by the gentle excitement they afford to the nervous and circulatory systems, and by their strengthening effects on the alimentary canal.

The use, however, of the Bath waters is much safer in the first stage of the disorder, than when it it is so far advanced as to produce the symptoms last mentioned. In the former there seems to be no hazard incurred by any trial of them that is directed by common prudence, but in the latter much attention is necessary. The quantity in either case must be adjusted to the circumstances of the patient.

When there is no hazard of exciting fever, a pint of the waters may be taken daily, in divided doses, by any person of eighteen years of age and upwards, where no particular circumstances occur to limit the quantity. The general method of drinking them is to take two-thirds of the above quantity before breakfast, and the remainder at noon.

The former quantity, however, is not drank at once, but in two draughts, with generally about half an hour's interval between them. The signs of the water being likely to prove successful may often be perceived before any abatement of the symptoms immediately connected with the disorder can take place.

Signs of the use of the Bath Waters being likely to be successful.

Those most generally observed are, the waters imparting a pleasing sensation, resembling a glowing warmth, to the stomach, immediately on their being swallowed; their causing some degree of appetite, especially for breakfast; their raising the spirits, their increasing the secretion of saliva, and above all, their quick excitement of the urinary secretion—a circumstance I have always noticed as the surest indication of their being likely to prove successful of any that has fallen under my observation.

In cases where obstructions of the viscera require greater caution, the quantity of water must be proportionably diminished, as to one half the former quantity, or even less; and its immediate effects more narrowly watched, particularly with regard to the action of the water as a diuretic.

In promoting this effect, some medicinal substances, joined with the waters, are often very powerful, and of the utmost service, when the action of the waters in this way is rather slow. The dulcified spirits of vitriol and of nitre are most commonly used for this purpose, and in general succeed very well. The latter is more usually employed, and is thought to be most efficacious; though the difference between them is not great, and often varies from idiosyncrasy in different people.

From twenty drops to a tea-spoonful in each glass is the quantity commonly directed. It often happens, when this secretion has been once excited that the waters themselves are sufficient to keep it up, in which case the additional substances become unnecessary, and may be laid aside.

I have before mentioned, that the Bath waters, when taken by any person not labouring under any disorder as is there supposed, are very powerful in quenching thirst. This circumstance affords, next to their effects on the urinary secretion, the best criterion for determining the probability of their being of service of any that I know.

If the mouth feels moist, pleasant, and cool, for some time after taking the waters, and the tongue remains of a good colour during their use, we may reasonably presume that they agree well with the constitution, and are likely to benefit the health, and may be assured that they are at least innocent.

Signs of the Water disagreeing with the Nature of the Disorder.

On the contrary, when the waters internally taken produce head-ach, thirst, and dryness of the tongue; when they feel heavy and burdensome upon the stomach; when they pall the appetite, or cause nausea and sickness, and have no effect in increasing the urinary discharge, we may be assured that no good

effects are to be expected from their use, unless these symptoms can be removed.

Means by which the Waters may be rendered agreeable to the Stomach, and serviceable to Health.

It sometimes happens that this may be in a good measure accomplished by a diminution of the quantity of water drank. Delicate habits will not unfrequently have a feverish tendency excited in them by such a dose as would be moderate, or even scarcely sensible in its effects, upon the generality of people; and in such circumstances it is always proper to try what may be done by diminishing the dose, even to a very small quantity, as a quarter of a pint taken in the morning or noon daily. Some abatement of the stimulus of the waters may be produced by suffering the glass to stand a few seconds or a minute between the time of its being filled and its being drank; but I rather prefer, for this purpose, a diminution of the quantity, in cases where we employ the waters with the expectation of benefit from their cordial and stimulating qualities. By suffering the water to stand, we indeed abate the stimulus, but at the same time increase the bulk of the dose beyond what is necessary, and render it less agreeable; two circumstances especially to be considered in delicate constitutions.

I have just before mentioned the diuretic secretion as the most favourable means of the waters passing off. When this can be effected by artificial means,

as by any additional substances such as are above mentioned, the troublesome symptoms mostly subside, and the best hopes of relief may be entertained. An attention to the state of the bowels is always proper during the use of the Bath waters, but especially necessary in delicate habits, and particularly where it would be dangerous to excite any tendency to fever or inflammation.

What Purgatives are proper during the use of the Bath Waters.

It is very common for the Bath waters to produce a rather costive habit of body, which sometimes takes place in cases wherein the waters agree very well with the general health, and are even of service respecting the particular complaint. This effect, however, it may be necessary to moderate, which may be most properly done in young persons, by such purgatives as are mild in their operation, excite the urinary discharge, and do not weaken the stomach or pall the appetite.

It is indeed scarcely possible to find any medicines of this kind that possess altogether the above requisites; but the mild neutral salts combined with some aromatic substance, as the lesser cardamom, in an infusion of which they may be conveniently dissolved, answer very well. Soluble Tartar, or the Salt of Rochelle, are more agreeable to the taste and more mild in their operation than the bitter purging Salt, or the true Glauber's Salt; but on the other hand they are less effectual as purgatives. As the

combination of stomachic bitters with purgative substances is thought, and probably with reason, to make the latter less palling to the stomach and appetite, it may be proper sometimes to dissolve the purgative substances above recommended in an infusion of some tolerably pleasant bitter substance, as of gentian root, or of chamomile flowers, or (perhaps what might answer better) of the quassia amara, which I have found by repeated experience to be the most pleasant and, as I think, the most efficacious bitter of any in medicinal use; and to be the most improved in taste by being combined with aromatic substances, any of which that may be most agreeable in flavour, may be joined with it on this occasion.

The bitter purging infusion, if more agreeable, may be used for the same purpose. The diuretic quality which bitters in general possess, is no small recommendation of their use in obstructions of the viscera.

Use of the Warm Bath in Chlorosis.

The warm bath is, however, found by experience to be the most effectual remedy. This has been recommended in various forms, by several of the most approved writers both ancient and modern: Hippocrates advises the frequent use of the warm bath,* and of an aromatic fumigation at the same time, in a case of this kind; and Hoffman recommends a

* Hippocratis de Superfætione. § 24.

warm bath of aromatic ingredients infused in the water,* in which he directs the patient to make a long stay, as for the space of an hour; and Van Swieten prescribes a form for the same remedy nearly resembling that mentioned by Hoffman,* and expressly with an intention that the virtues of the ingredients might be absorbed into the course of circulation. Modern practice however, I believe, scarcely authorises on such occasions so long a stay in a warm bath as is above advised; and the Bath waters are found to produce all the good effects of which we have reason to believe them capable, in much less time. In general, I believe, from ten to twenty minutes is the usual space allowed for remaining in the bath.

As the bath is here used on account of its strengthening properties, I think the morning the best time, as when used then, it will be less likely to excite perspiration that when tried in the evening; perhaps, however, in cold weather it may be safer to bathe in the evening, as it will not interfere with the use of exercise during the day.

Time proper for a Trial of the Bath Waters.

The time of trial of the Bath waters must be determined by their effects principally, and in some measure by the frequency of their use. From one to two months is generally sufficient, and sometimes a longer stay may be necessary. Sydenham speci-

* Hoffman de Chlorosis Indole. § 24.

fies the latter of the above-mentioned periods, and advises the bath to be used every other day; and on the days whereon the patient does not bathe, he recommends the waters to be drank. I never knew them advised to be tried in this manner, as it is not, I believe, at present thought that the use of the bath precludes the drinking of the waters upon that day on which the patient bathes, but rather that it furthers the good effects of the bath. The bath may be repeated twice or thrice a week, as the strength and spirits seem to improve under it, and may be continued as long as any progress in amendment appears to be made.

This however is not the case with the internal use of the waters, which should by no means be continued for so long a time. About three weeks or a month in delicate habits is sufficient to persist in a course of drinking the waters, which should then be omitted for a week or ten days, and after that recommenced. It is found by experience that the Bath waters (if long continued) become, from being at first highly grateful, at length palling to the taste and stomach; and when this takes place, much of the advantage before gained, as to what respects the appetite and digestion, is usually lost. It is therefore found adviseable to prevent this effect, by interrupting the course of drinking the waters before any sensation of disgust (or even of indifference) to their taste is felt. I have never seen the Bath waters

used to so great advantage as in cases where the patients (at the time they were advised to forbear) were desirous to increase the quantity taken, and to continue the drinking of them for a longer time.

Choice of the several Springs.

The choice of the spring is a matter of some consequence. The water of the Cross-Bath, as appears from all experiments, is several degrees cooler in its temperature than either of the other springs; and experience has shewn, that it is less stimulant and inflammatory, when internally taken. It has on that account, been generally advised to be drank at the beginning of a course of the waters in order to habituate the constitution gradually to their effects, and prepare it for a trial of those that have been esteemed the more powerful. The same reason prevails for using this spring only, in delicate habits, with which it is often found to agree better than either of the others.

The moderate temperature of the Cross-Bath renders it more proper to be first used externally, as well as drank; but the private baths that have been of late years constructed here, have in a good measure superseded the public baths, with those to whom the difference of expense (which is not great) is no object of concern. The private baths may be had from 100 degrees of heat, and upwards, to any inferior degree of warmth that may be desired; and

may be prepared at any hour, and are composed entirely of the Bath waters, which is received for that purpose from the spring into close reservoirs, and suffered to cool there without any loss from access of air, which might dissipate its volatile parts. When thus cooled, it is let into the private baths, and brought to the temperature wished for, by letting in a quantity of water immediately from the spring, whose heat being very considerable, furnishes an easy and quick method of adjusting the bath to the degree of warmth that may be desired. I have, I think generally found that the degree which is most universally agreeable is, as near as I can judge, to 92 degrees upon Farenheit's scale, and this is about two degrees lower than the Cross-Bath* generally is.

Season of the Year most proper for the use of the Bath Waters.

The more temperate seasons of the year are at present generally advised for the Bath waters, and in such complaints they are particularly proper; very hot weather being likely, when superadded to the stimulating qualities of the waters, to excite fever; and in a cold season it is apt to counteract their effects, and to expose the patient to hazard of getting cold, if the water be used externally.

* The spring that supplies the Cross-Bath is invariably, as we have every reason to believe, of the same degree of heat; but the bath varies a little, as they suffer it to fill faster or slower.

Exercise proper during the use of the Bath Waters.

Moderate and regular exercise bears a peculiar reference to the use of the Bath waters internally taken. Unless the powers of digestion and assimilation can be rendered superior to the stimulus of the waters, they seldom are of any material service; and this can be effected by no means so well as by such exercise as does not fatigue, and exhaust the strength. We must indeed accommodate the quantity of the water to the scale before-mentioned; but the use of exercise enables us to give with advantage a larger proportion, and of course to accelerate relief.

As to the other branches of regimen, they must of course be suited to the nature and circumstances of the disorder, but bear no particular reference that I know of to the Bath waters, save that a proper attention should be paid in the regulation of it to the stimulating effects of the waters, and that quality of them, of their being apt to aggravate complaints of an inflammatory nature.

In Visceral Obstructions.

But the use of the Bath waters is not confined to such obstructions of the viscera as occur in the female sex. They are equally serviceable in such as take place among men, provided a trial be made of them in an early stage of the complaint. One of the most common of these is, that hardness about

the region of the liver and sometimes of the spleen, which often succeeds intermittent fevers, and was formerly attributed to the too early administration of the Peruvian bark, but is now proved to be the consequence of the disorder, not of the medicine,* and frequently owing to the neglect of giving that remedy† at the beginning of the complaint. These indurations, however, though threatening in their appearance, are in general less dangerous‡ than those which are the consequence of irregularity in diet. They are for the most part produced, and are often dissolved in a short time ; and experience has proved that the Bath waters are of great service in promoting the resolution of them.

If this remedy be tried soon after the disorder is perceived, and before any fever or pain of the part takes place, it may be used at least with safety, and in general with much advantage. I am decidedly of opinion, from experience, that the giving repeated doses of purging medicines, and especially mercurials, in such disorders, is almost always prejudicial, and tends to stimulate and irritate the parts which are

* See Cleghorn on the Diseases of Minorca, passim ; and Lind on the Diseases of Hot Climates, Appendix.

† Obstinata istarum febrium prolixitas nos, ut subitam manum adhibeamus medicam admonet, ne malum interim augeatur, et insanabiles morbi, ut obstructiones, scirrhi, cachexiæ et hydropes, viscera corripiant.—*Musitan. de Febribus, cap.* 3.

‡ Van Swieten, Comm. 753. Sydenham, § i. c. 5.

would most desire to keep easy and free from inflammation.

Tonic remedies, cautiously given, seem to promise better success in most affections of the glands, which we have the greatest reason to think to be the seat of the disorders; and the chalybeate mineral waters, those of Pyrmont* in particular, are employed with much advantage.

With this intention the Bath waters are recommended; and if applied to early in the disease, seldom fail of giving relief. At the beginning of this complaint the pulse is low, and a considerable degree of inertia is present; which last, indeed, seems to have laid the foundation of the glandular obstruction. At that period, tonic remedies, (and the Bath waters perhaps above all others) by adding force to the circulation, and generally exciting the powers of life, contribute to dissolve or remove the obstructing matter, and to relieve all the symptoms. But if their use be neglected at this period, and the obstructed part becomes painful, the countenance flushed, and the pulse quick, the season for a trial of the Bath waters is elapsed, and their use will, as Dr. Heberden very truly observes,† no otherwise contribute to end the disease, than by hastening the patient's death.

* Marcard Desc. de Pyrmont, vol. II. p. 47. ii.

† Medical Transactions, vol. II. p. 153.

Cautions respecting the use of the Bath Waters in Visceral Obstructions.

But the use of the Bath waters, though frequently beneficial when timely used, requires some attention. Though I am persuaded that a course of purging medicines, by weakening the body and system in general, contributes to fix the obstruction, and moreover tends to hasten the inflammatory stage; yet as the body is often costive at the beginning of the disease, it is necessary to obviate this circumstance, and for this purpose it is proper to employ the milder remedies. A solution of some of the neutral salts, as above directed, which may promote the urinary discharge, as well as gently open the body, is very proper. The oil of the ricinus communis, or castor nut, is with some people remarkably mild and easy in its operation, and with such it may be an useful purgative on such occasions. Others, however, find it rough and stimulating,* and such persons should avoid it. For the purpose of exciting the urinary secretion, the dulcified spirits of nitre and of

* I was for some time of opinion, that this difference of operation in castor oil might be owing to some difference in the quality of different bottles of it. It is well known that it is often extracted from the nut by the assistance of heat or of great pressure, and that by either of these some of the essential oil which is lodged in the capsule, which is found to be very acrid and violent in its effects, might be mixed with it. This may, perhaps, sometimes happen; but I have seen different portions of the same bottle act with the greatest mildness in some instances, & very roughly in others.

vitriol, which I have before recommended, are very proper in the complaint of which I am now speaking, provided the Bath waters should not manifest a tendency to go off in that way.

I have before pointed out the necessity of attending to this circumstance, as an index of the effects of the waters in a complaint of this nature, though arising from a different cause; and the same attention is equally necessary in all cases of glandular obstruction, in which the Bath waters (or, I believe, any other remedies) are tried. I have observed many cases of this kind, but never found any benefit received, unless this evacuation were sensibly increased; and when that took place, the use of the waters was universally safe, and nearly as constantly beneficial.

As to the choice of the waters, the quantity in which they should be taken, and the time they should be continued to be drank, the rules before given may be easily applied to resolve this question. A somewhat freer use of the waters may be allowed to men than to women, but the nature and state of the disease will more properly suggest precise regulations of this kind than any previous direction. General rules are of service, as they may be presumed to be the result of general experience, but must be always be understood as subject to be adjusted to the particular circumstances of every case.*

* A German practitioner of eminence, of the name of Kampfi,

Use of the Waters externally in Visceral Obstructions.

The external use of the Bath waters is, for obvious reasons respecting one of the circumstances, not so directly indicated in obstructions of the viscera, owing to this cause, as in those that occur in the circumstances first mentioned; as coinciding, how-

has suggested a remedy for internal obstructions, which is exhibited under the form of what he called *Visceral Clysters*. These are recommended by Dr. Marcard, his Majesty's Physician to the houshold at Hanover, as an auxiliary to the effects of the Pyrmont waters. They are said to consist of "a strong infusion of dissolving (as they are called) and somewhat bitter ingredients, mostly herbs, and some bran." They are administered twice a day, and kept in the intestines as long as possible; which, after some use, is very easily done, when care is taken that the rectum be previously emptied by stool. This clyster is entirely absorbed by the capillary vessels of the intestines, and experience has proved it to be more powerful in dissolving obstructions than any other means whatsoever. The following is one of the formulæ, which may be altered according to circumstances:

R.—Radic. Taraxaci.
Herb. Fumariæ
——— Saponariæ
Card. Benedict.
Florum Verbasci
——— Chamœmel
Furfuris Tritic. paululum ustulati ana 1 oz.

Conscinde simul et infunde manipulos duos cum aq. bull. 8 oz. Stent in vase clauso in loco calido per horas sex. et cola. F. enema appl. bis quotidie.

I never saw any trial made of this remedy, but think it might merit one, and be a useful assistant perhaps to the waters of Bath, as well as to those of Pyrmont.

ever, with the general intentions of cure, they are undoubtedly proper to be tried. Great caution is, however, necessary in their use; a moderately warm bath not exceeding 92 degrees, should be chosen, and the stay in it should not, at first, exceed from five to ten minutes. The effect it produces should also be carefully observed. If the patient feels easy and composed whilst in the water; if the sleep the succeeding night be calm and quiet; if the skin remain soft and cool, the appetite tolerable, the faculty of tasting perfect, the tongue moist and clean; and to these be added an increase of the urinary secretion, which often takes place when a bath rather cooler than the natural heat of the body is used; we may under such favourable auspices, prognosticate, that the remedy is at least safe, and likely to prove successful.

Heat of the Bath proper to be used.

The directions above given concerning the regulation of the heat of the bath, require in the present, and indeed in all delicate cases, to be strictly attended to, and positively insisted upon. A bath not exceeding 90 or even 92 degrees of heat, will often feel to persons accustomed to warm and close rooms, and much confinement within doors, somewhat cooler than is perfectly agreeable; and it is a frequent practice to insist upon the bath being heated, whilst they are in it, to a greater degree, and prepared warmer for the future. But I have almost always found that

such alteration has been ultimately for the worse. However it might flatter the sensations for the present moment, it has often produced a hot and restless night, disturbed sleep, thirst, a white tongue, either a dry skin, or profuse sweats, and a diminution rather than an increase of the urinary secretion, which, besides being small in quantity, was generally high coloured and turbid.

Cautions respecting the Management of the Waters.

It is not only necessary on all such occasions to regulate the warmth of the water in which the patient bathes, but to be careful that the dressing-rooms be not from too officious care over-heated, and the air of them fouled, by keeping them closed several hours perhaps before the arrival of the patient.

It is difficult indeed to overcome the scruples of cautious timidity on such subjects, or to convince those who have the care of valetudinarians, that fresh and pure air is more conducive to health than such as is contaminated with the effluvia of burning fuel, candles, and the breath of the attendants, confined in a small hot and close room. Reasonable care is no doubt necessary, that the room should be moderately warm, and that no stream of air should be admitted to blow upon a person just come out of a warm bath; but no extraordinary degree of heat is necessary, and such would even be injurious.

The same cautions should be attended to by the patient on his return home after the use of the bath. The chamber he sits in should not be heated to a greater degree than usual, nor should any supernumerary clothing be kept on after he is got home. No heating or stimulant liquor should be drank, under the notion of encouraging perspiration, or preventing his taking cold; nor should he go to bed before the usual hour, or have the bed-chamber heated beyond what he is accustomed to, or have any additional bed-clothes. The intention with which the bath is advised is, to invigorate and assist the powers of life and to soothe the feelings, not to encourage a weakening evacuation.

Without these precautions we cannot form any just estimate of the efficacy of the remedy. Every practitioner at this place has, I doubt not, seen bad effects ascribed to the use of the warm bath, which were in reality owing to the mistaken regimen with which it was accompanied.

Bath Waters wherein likely to succeed in Obstructions of the Viscera, proceeding from Intemperance.

The use of the Bath waters in such obstructions of the viscera as are often the consequences of intemperance, particularly in spirituous liquors, is more ambiguous. It is indeed probable that they may be highly serviceable in these, when beginning to be formed, which we may reasonably suppose to be the

case when the patients begin to lose the complexion of health, and change to a dull leaden hue; when the appetite fails, and the body becomes costive, the extremities cold, and the mind and disposition torpid and inert. In such circumstances, of which I shall speak more hereafter, the Bath waters are often very serviceable, provided the habit which gave rise to the disease can be totally laid aside. But if the disorder has advanced farther, and the patient has joined to a pale leaden complexion, and total loss of appetite, a foul or white tongue, transient flushings of heat preceded by shivering, a pain in the region of the liver either dull or acute, which pain is aggravated by taking food; if the belly be hard and enlarged, if any induration of the viscera be sensible to the touch, or any increase of pain be felt on slight pressure, and if any oedematous swellings of the extremities come on; in such circumstances the use of the Bath waters is not only unavailing to any good purpose, but generally tends not only to hasten dissolution, but to make the short interval of life more painful and distressing than it probably would have been had a mild regimen and a milk diet been substituted in their place.

Use of the Bath Waters in Visceral Obstructions arising from Hot Climates.

Bath waters are said to be of service in such obstructions of the viscera as are frequently found

among those who have passed much of their time in hot climates, particularly among those who are not natives of such countries. Several causes are assigned for the prevalence of such disorders in such situations, all of which, I doubt not, may contribute thereto;* such as, the increase of the biliary secretion, which is well known to be the consequence of great external heat long continued, and probably some alteration in its quality from the same cause: next the frequency of intermittents, and those generally of a violent kind, which are in a good measure endemic in many hot climates, and are well known even in this country (where they appear under a much milder form) to produce such complaints; next the intemperate use of spirituous liquors,† which the natives of a colder climate are apt to mix in too large a proportion with the water they drink, partly from former habit, and partly from want of considering that in hot climates a larger quantity of fluid is necessary to be taken, and that of course a greater dilution of the spirit is necessary.

The want of good water in many hot climates is another cause of these disorders. The effects of impure water in producing diseases of the belly and spleen

* Cleghorn's Introduction to his Observations on the Epidemic Diseases of Minorca.

† Cleghorn on the Diseases of Minorca, Introd. p. 69. *Bontii de Medicina Indorum*, p. 71, cap. 7.

are mentioned by Hippocrates* and Aretæus,† and confirmed by later authorities.‡ I have seen this complaint in some persons who had lived in South Carolina, where it is very common, and thought with reason to be at least aggravated by the bad quality of the water used in diet.

I have remarked, that visceral obstructions which take their rise in warm climates, are more commonly attended with a jaundiced colour of the skin, than such as take their rise in our own country. Whether Bath waters might be serviceable, if tried very early in the disease, I cannot determine; but those cases in which I have had an opportunity of observing their effects, were too far advanced for any benefit to be expected. Such disorders, in hot climates, partake much more of an acute nature than with us, and often come to a crisis by suppuration, which may sometimes be discharged by an opening externally. The same remedies also that are successful with them are found to fail among us. Mercury, copiously rubbed upon the pained part in form of an ointment, or taken largely internally, is an approved remedy in liver complaints in those countries, but among us that remedy, in the instances in which

* Ει μεντοι ποταμοι μεν μη εισιν, τα δε υδατα κρηναια τε και ξασιμα πινοιεν και εοδωδεα, αναγκη τα τοιαυτα της γαξρος ατηρα ειναι και σκληρος.

† Ὕδατα πλατεα, αλμυρα, βρομωδεα. ‡ Cleghorn ut supra.

I have seen it tried, (and I have seen several) appeared to aggravate all the bad symptoms, and manifestly to hasten death.

In liver complaints that have proceeded no farther than a simple obstruction of the biliary ducts, whether contracted in hot climates or at home, the Bath waters are likely to be of service; but, I apprehend, most of those that are produced in hot climates, are of a more complicated nature, and too deeply rooted to be safely treated by any medicines that excite the circulation. This, however, is conjecture only, and should not absolutely determine against a cautious trial of their effects, provided that no internal hardness be sensible to the touch, and fixed inward pain, soreness, or tendency to fever, be not among the symptoms.

As the Bath waters are found to be of service in exciting the motion of the vessels when languid, they are likewise efficacious in cases of inertia of the nervous system.

Use of the Bath Waters in Palsy.

Paralytic disorders are obviously of this nature, and in these the Bath waters have been found of the greatest service; and, if judiciously managed, may be exhibited safely in most kinds of this complaint. It is not necessary in this place to enter upon a description of this disease; some circumstances and symptoms belonging to it, however, which may be

necessary to explain the indications of cure I shall mention.

Palsies may be divided into such as arise without any evident or probable cause to which they may be immediately ascribed, and into those wherein the cause that produces them is evident or highly probable.

This distinction is of great consequence, as these disorders, however they may agree in generic marks, are extremely different in many respects, and require a different method of treatment.

Idiopathic Palsy.

Idiopathic palsies are sometimes, but not always, preceded by apoplexy, or some symptom of the apoplectic kind, as vertigo, fainting, impaired vision, hearing, or some other failure in the exercise of the sensible faculties. These happen frequently to people somewhat past the meridian of life, of a corpulent habit, short neck, and ruddy complexion, who have rather indulged their appetite* and particularly to those who, having before used much exercise, are not careful to retrench in their diet after they have forborn to use exercise any longer, especially if the transition from an active to an indolent life has been sudden. Cases of this kind are generally denomi-

* Εξεις, οι παχεες κατα φυσιν, υγροι, αργοι ζωωδεες.
Aretæi, lib. 1. cap. 1, de caus. et sign. diut. morbor

nated the sangumeous apoplexy, and, as it seems, with reason; since a redundance of blood, either general, or accumulated in some particular part, as the head appears to be evidently a concomitant circumstance, and probably the immediate cause of the disorder.

Palsies thus circumstanced are seldom if ever brought to this place, or at least to a trial of the waters before large previous evacuations, particularly by bleeding, have been used, and the patient put on a spare (or at least very moderate) diet. With these precautions, however, and when all signs of fulness, both in the system of blood-vessels, and in the general habit have subsided, the internal use of the Bath waters has been found of the greatest service.

Some physicians of eminence have been of opinion, that apoplexies and palsies frequently proceed immediately from some disorder of the stomach. Thus much is certain, that the head and stomach are closely connected, and are liable mutually to affect one another, as we see by daily experience. It is far from unusual for persons affected with the palsy to have the appetite very good, as it is called, (that is, not easily satisfied) and sometimes it is said to be increased to a great degree. In the instances, however, which I have had an opportunity of examining, I have not found that the desire of taking food was in reality much increased, but that it seemed rather to be owing to the stomach having lost its instinctive

faculty of adjusting the proportion of the food taken in, to that of the nutrition required, and to the powers of assimilation in the synem.* Persons thus affected may be properly said to have a depraved, though frequently a great appetite. They persevere, often without much discrimination of the quality of the food, to load the stomach, for want of that sensation of fulness or satiety that renders any farther accumulation of food disgusting.

One circumstance, indeed, seems to contradict this opinion; which is, that such persons will often (though not always) digest such enormous quantity of victuals, without any apparent trouble or inconvenience, and sometimes with even less flatulence and uneasiness, than took place at such times before the paralytic attack. But we should observe, that the sensibility of the stomach is often increased to a morbid degree, and that such increase is the source of many of what are called stomach complaints. If this can be removed, even though the tendency should be towards the other extreme, it is likely a mitigation of the uneasy symptoms may take place, and the business of digestion, perhaps, from the organs being habituated to the performance of their respective functions, be conducted with less disturbance and irregularity than before.

* Idiots and insane persons are often subject to similar irregularities of appetite with those here described.

However true or false these opinions (which I offer only as matters of conjecture) may be, it is at least true that the indefinite appetite, as it may be termed, which sometimes attends paralytic disorders, is often capable of being regulated and reduced within proper bounds by the internal use of the Bath waters, which seem to restore the distinguishing faculty of the stomach, with regard to the quantity it ought to admit.

Sometimes, though I believe less frequently, an opposite disposition of the stomach takes place in paralytic cases, and that organ becomes insensible to the cravings of appetite, and the person is totally indifferent as to support, and would to appearance perish for want of food, were not the necessity of it suggested rather by considerations drawn from reason than from the natural feelings. This symptom, however, as well as the former, I have seen removed by drinking the Bath water, which has restored the natural desire for food, and the proper and distinguishing taste for the different sorts of victuals, which is often much impaired, as well as the appetite.

The bowels, as well as the stomach, are frequently, though not constantly, affected with costiveness, which is sometimes very obstinate and troublesome. The drinking Bath waters is often effectual to the relief of this symptom.

Depression of spirits, attended with frequent sighs, and sometimes involuntary fits of weeping,

often accompany paralytic disorders; and, I think, affect most strongly such persons whose spirits and cheerfulness of mind were before the attack the most remarkable. This melancholy transition, which is often one of the most affecting circumstances belonging to the disorder, I think I have observed to be particularly relieved by the use of the waters, and generally such amendment is the first step towards a general recovery.

External use of the Bath Waters in Idiophatic Palsies.

But the principal benefit in such disorders is derived from external application of the Bath waters. In this place I shall beg leave to speak a little on the nature of idiophatic palsies. We often read in books, of palsies affecting limbs in various ways; as half the body in a longitudinal direction, the same in a transverse direction, and again in an oblique direction, as when the right arm and left leg are affected, and vice versa. Besides these we hear of particular limbs only being affected, while the remainder of the body is left untouched. But every idiopathic palsy I ever examined, and I have examined above an hundred, was an affection of half of the whole body in a longitudinal direction, or what is generally called a hemiplegia. It does not however follow, that in every hemiplegia the affected side should be equally weakened in every part of it. It often happens that some parts recover in a few days nearly to the same

state as before the attack, and some single limb, the hand and arm generally, remains as at first seizure. This circumstance induces many to speak of palsies of particular limbs, whereas had an accurate inquiry been made of the state the patient was in as soon as it could be learned after the first attack, I believe it would be found that sufficient marks of hemiplegia would have been discovered to identify the disorder. The use of the Bath water has been found of great service to persons in this state. Out of 730 patients admitted into the Bath Hospital for such disorders in the course of ten years, 497 were benefited, and only 31 died ;—a proportion surely sufficient to prove that the Bath waters have been charged without cause by Dr. Mead with producing apoplexy and sudden death in such persons.*

* Dr. Mead says, " he has known *some* persons afflicted with palsy, who, induced by the vain expectations of their physicians, ventured to come to this place, and to use the warm bath, and were immediately on their coming out of the hot water again seized with apoplexy, and died."

Monita et Præcepta Medica.

It cannot be denied that such an instance, or perhaps more of this kind, may have occurred, though I never heard of any being specified: but that such an accident was not imputable to the Bath waters, is proved not only by the account to which this note refers, but also by such accident never having been *once* observed to happen among the patients of the Bath Hospital, notwithstanding the same has been instituted 57 years, and in that time between four and five thousand paralytic patients

Palsies of this kind, though mostly agreeing in certain general marks, vary considerably in the proportion the symptoms bear respectively to one another. Thus in some cases, the sensation of the part is much impaired, and the strength but little; in others, the strength, and even the motion, is nearly destroyed, whilst the sensation remains perfect. In some instances the natural heat is little or not at all affected, in others the parts remain cold. The same irregular proportion takes place among the other symptoms.

I believe the Bath water generally succeeds the best in cases wherein the patients retain their strength the most completely; but this is common to them with other remedies.

The retaining the sensation perfect, or nearly so, is a circumstance, which, next to the preservation of the strength of the part, promises the best effects from the use of the Bath waters. There seem to be two causes of the loss or defect of sensation in the part affected in paralytic complaints, one arising from the loss of the nervous influence, from some fault or disorder immediately affecting the nervous system; the other from a defect in the circulation, as when that is weak and tardy; as appears from the coldness and paleness of the parts affected, and the

belonging to that institution must have used the warm baths at this city.

oedematous swellings which frequently accompany the disorder. The Bath waters, especially when externally applied, are often of service in both these cases, but in the former the recovery of the sensation is gradual, and mostly keeps pace with the abatement of the other symptoms; but in the latter case I have several times observed, that after a few times using the Bath waters externally, the power of sensation has returned nearly complete, though the strength had not been perceptibly increased. I always, however, found that in such cases, the part so benumbed had been previously cold and pale, and that when the feeling returned, the natural heat and colour of the limb was restored also.

The regulation of the use of the Bath waters must be deduced from a consideration of the leading symptoms. If the disorder be attended with such circumstances as indicate a tendency to fullness in the vessels of the brain;* as much redness of the cheeks, a sensation of weight or pain in the head, especially if it be accompanied with vertigo; we should be cautious how we advise the use of the waters either internally or externally, until these symptoms are removed.

* It has been the opinion of several physicians, that the Bath waters are improper in such paralytic disorders as have been preceded by apoplexy. This opinion is, however, erroneous, as appears from the Cases printed in the "Narrative of the Efficacy of the Bath Waters in Paralytic Disorders." 1787. See pages 61, 62, 63, 64.

Bleeding in such circumstances is generally necessary, especially of the topical kind, as by cupping, or by leeches, the latter particularly; which last, if timely applied in such a manner and in such numbers as to draw three or four ounces of blood from the temples, will generally remove or abate these symptoms. Some purging medicines are also proper, but the choice of these must be left to circumstances. In general some purgative of quick action, as some of the preparations of jalap, or of senna, may be eligible at first; but medicines of this kind are improper to be frequently repeated. Some of the combinations of aloes with bitters or aromatics, or both, are to be preferred when the object is rather to preserve the body in a moderately open state, than to produce a sudden evacuation.

Should the stomach be affected with nausea, or a sensation of weight and oppression, particularly if the glands of the throat and stomach secrete a profusion of viscid glassy mucus, (no uncommon attendant on palsies) an emetic taken previously to entering upon a course of the waters, and occasionally repeated if need be during their use, is likely to be of the greatest service. In this case I would recommend a rather powerful emetic, in preference to a weak one. An ounce and half or two ounces of wine of ipecacuanha, with two grains of antiomonium tartarisatum, will act not only more effectually, but with greater ease than a third part of the quantity.

Quantity in which the Waters should be taken, &c.

Even when the use of the Bath waters may be deemed safe or proper, consideration must be had to the quantity taken in, when they are drank; and to the time of stay in the bath, heat of the water, &c. when they are externally used.—Common prudence, independent of medical information, dictates, that such a remedy should be cautiously administered. No precise quantity can be fixed on, but a small glass, about a quarter of a pint contents, may at first be ventured on, and from the effects of that, we must judge how often it may be repeated, or the quantity enlarged.

If such a quantity taken before breakfast feels easy, warm, and cordial, to the stomach and spirts, and excites no vertigo, pain, or sense of fulness in the head or eyes, a second glass of the same size may be taken the same day at noon, and this quantity gradually increased to a pint in the day, taken at two or three times as convenience may suit, which seems a proper medium for the generality of people.

It is usual for the Cross-Bath water to be recommended at the commencement of a course of drinking the Bath waters, and this seems agreeable to reason, as well as justified by experience; especially in cases wherein there is any affection of the head, or indeed where any tendency to plethora appears in the system. After using this for some time, it may be proper to change it for the water of the King's or

Hot Bath, as such change prevents in some measure that disgust which is apt to come after a long trial of the Bath waters, and consequently enables the patient to continue their use for a longer time.

The diuretic effects of the waters are indicatory of the safety of a trial of them in this complaint, as well as in the foregoing, and should by every method possible be promoted. The means before advised for this purpose are equally proper here as in the circumstances before mentioned.

Cautions respecting the use of the Bath.

The use of the Bath is also necessary to be attended to. A short stay as of 5 or 6 minutes is undoubtedly proper to be tried at the commencement of bathing, and the former cautions relative to the coolness of the room, &c. are also necessary.

If this trial produce no symptoms that are disagreeable, but, on the contrary, seem to improve the health, spirits, and strength, a longer stay may be gradually indulged, until it comes to about half an hour; beyond which time I would recommend it to no person to stay in the bath; since, if lassitude, fatigue, and disgust, are suffered to arise, the benefit of the bath for that trial, is nearly, if not altogether, lost.

As the public baths themselves differ from one another in point of temperature, and as private baths of any degree of warmth, that can be supposed to be

required, may be had at any hour, it will be necessary to speak a few words on the degree of heat of the bath that seems most likely to succeed in this disorder.

From the insensibility and coldness of the parts affected, that so usually accompany this complaint, we might be led to conclude that a considerable degree of heat, or as great as the bodily feelings could well endure, would be most likely to succeed. But we should reflect, that the want of tone and strength in the nervous system incapacitates such persons from bearing the fatigue of strong impressions of any kind. Every remedy that is intended to strengthen the body should be so managed, as to be subordinate, not superior to the powers of nature. If the stimulus to exertion be too violent, lassitude and weakness, not cheerfulness and strength, will infallibly be the consequence. Agreeably to this hypothesis, it has been found that a somewhat lower degree of heat than that of the King's and Hot-Baths is in general the most favourable to the recovery of such patients. I have been informed from the best authority, that during the time the Hot-Bath (which is the one appointed by act of parliament for the use of the patients belonging to the Hospital) was rebuilding, and the patients of the Hospital were obliged to make use of the Cross-Bath during that interval, those afflicted with paralytic disorders seemed to have gained considerably more benefit than when the Hot-Bath was

used. The temperature of the Cross-Bath is about ninety-four degrees; that of the Hot-Bath at least eight degrees greater. In private practice I have generally advised a bath from ninety-two to ninety-six degrees in palsies. We should also consider that the patients are able to bear without faintness a greater degree of heat in an open bath than in one that is confined in a room.

Use of the Pump.

But in cases where the affection is seated principally in the extremities, as in the arm or leg, it is more common to use the waters cast in a stream upon the part by means of a pump. This, as it in a good measure saves the trouble of undressing, &c. is thought to fatigue the patient less than a greater degree of immersion, whilst at the same time it creates none of those sensations and apprehensions which are apt to affect people of delicate sensations at their first going into the bath. The force likewise with which the water is thrown adds to the stimulus, which, however, being partial only, is more easily endured than a general application, and is less heating to the system at large.

The degree or quantity of this application is measured by the number of times the handle of the pump is raised and thrust down while the patient is exposed to the sream of the water. It must not, however, be supposed, that the water falls upon the part with an

irregular force, or by gushes, as nothing of this kind is perceivable; and the number of strokes of the pump is no more than a mode of measuring the time which passes whilst the patient is exposed to the stream of the hot water. From fifty to two hundred strokes is the number generally directed to be taken at one time, which may however, be increased or diminished according to the age, sex, strength, or other circumstances of the patient. The pump* likewise, as its application is partial only, may be properly used of a greater degree of heat than a bath for the whole body.

Time of using the Bath.

If the patient uses the public baths, it is necessary that he should go to them before nine in the morning, as they are emptied soon after that time, but a much earlier hour is generally chosen. If the private baths are preferred, they may be prepared at any time of the day, and I am not certain that any particular hour possesses advantages peculiar to itself. I have known equal benefit gained in the morning, at noon, and in the evening. Those who prefer the latter hour, should be careful to dine rather early, and to pay an especial regard to moderation, with respect to the quantity and quality both of food and liquor.

* This mode of application is advised by Cælius Aurelianus, Lib. ii. cap. 1.

Season of the Year best adapted to a Trial of the Bath Waters.

The summer season of the year has been generally made choice of for the use of the waters, and both reason and experience have justified this preference. Extremely hot weather is, however, less proper than the temperately warm, as the former is apt sometimes to cause violent perspiration, if the bath be used during its continuance; a circumstance always adverse to its good effects upon the disorder. This is particularly liable to take place in young persons, on which account the use of the Bath has been generally observed to suit best with persons a little advanced in life.

For the reasons given above, those who bathe or use the pump, with a view to the recovery of any weakened limb, ought not to encourage sweating by any violent means. It may be useful in cold weather, if the patient bathes early in the morning, to go to bed after bathing for a short time, as half an hour, or perhaps more, in order that the body, lately exposed to the heat of the water, may be more gradually, and of course more safely cooled; but no extraordinary heat, as of bed-clothes, fires, or other artificial warmth, should be employed. If the weather be warm, this precaution is generally unnecessary, as well as confinement during the day; which last, however, is very necessary in severe weather.

Exercise of the Limbs in the Bath.

Motion of the limbs in the bath, as far as the patient is able, without over exertion and fatigue, is

certainly proper. It should be considered, that the waters afford us only the means of regaining the power and command over weakened limbs, but the actual use of them must be acquired by the exercise and habit of moving them.

Length of the Time proper for the Bath to be continued.

With regard to the length of time which it is proper that the use of the bath should be continued, I can only say, that it should be much longer in general than that in which a cure is usually expected. A month, or six weeks, is the time commonly allotted for such a trial ; a term much too short, even if we suppose that the whole of it was employed in such a course, which is very seldom the case.

There is no doubt that persons in different degrees of the disorder require different periods of time for them to receive the whole of the benefit the use of the waters is capable of imparting; but it is worth notice, that, on examination of the register of the Bath Hospital, the average of stay of thirty-six* patients taken in succession, who were all discharged cured of the idiopathic palsy, rather exceeded the space of ninety days to each person ; a time which is well known to exceed by at least one half that

* These were the whole of the patients discharged as *cured* of this disorder during the years 1776, 1777, 1778, and 1779. The whole time of their joint stay was 3269 days, which being divided by 367 gives nearly 90.806 to each person.

which is usually allotted for a trial of the Bath waters, by those who come here at their own expense.

It is proper here to observe, that although it is certainly true that the stomach, by a long use of the Bath waters, is apt to shew signs of loathing and disgust, which evidently limits the period of drinking them, yet that no such circumstances take place respecting the use of the waters externally, but that in this way they may, and often are, continued to an indefinite time, without any limitation from symptoms of such a nature.

It appears from the register* of the Bath Hospital, that of 730 patients received into the house from January 1, 1776, to December 31, 1785, for Palsy from no assignable cause, there were† cured 87;

* See "Narrative of the Efficacy of the Bath Waters in various kinds of Paralytic Disorders," p. xii. Preface.

† The account of paralytic patients, who became so from no assignable cause, and were admitted into the Bath Hospital, from January 1, 1788, to January 1, 1791, including the space of three years, is as follows:

Whole number admitted 293

Cured	22
Much better	109
Better	73
No better	77
Dead	12
Total	293

It should be observed, that of the seventy-seven patients discharged *no better*, twenty-two were improper cases for a trial of the waters; and of the twelve that died, one died of a mortifi-

much better 287; better 123; no better 202; dead 31. The proportion of deaths is nearly as 1 in 23.548.

The regimen and manner of life proper for persons labouring under paralytic disorders, who are under a course of the Bath waters, is not in anywise specific or particular. Moderation in the quantity or quality of food is proper in a general view of the subject; but abstinence, except in plethoric habits, (and particularly in such cases as have been attended with apoplexy) is by no means proper. A diet rather generous than abstemious, is to be preferred in most instances. We should, however, consider, that as the waters themselves are powerfully stimulant, it is necessary to be cautious of indulging too freely either in high-dressed victuals, or fermented or spirituous liquors. The same may be said of exercise, and other articles of regimen. It is also necessary to support the spirits, and entertain or amuse the mind; but care must be taken, lest by over attention to these circumstances, we substitute fatigue and disgust in the place of pleasure.

In Palsy from an evident Cause.

The Bath waters have been found still more successful in those kinds of paralytic affections that are produced by some evident cause.

cation, and another of the small-pox. If these then be struck off, the number of deaths will be, in proportion to the number admitted, nearly as one to twenty-seven, and the number of those that received benefit to those that received *no* benefit, as 1 to 2.9565, or nearly as 3 to 1.

In Palsy from Cold.

Exposure to violent cold is sometimes productive of this disorder, especially if moisture be combined with it. Those obliged to walk out among the snow, or labour in wet places during severe weather, are sometimes attacked in this manner.

It appears, from Dr. Charlton's account, that out of twenty-four patients received into the Bath Hospital, for palsies of this kind, only two received no benefit, and none died;—a convincing proof of the efficacy and likewise of the safety of the Bath waters in such cases.

From a later publication* it appears, that out of four cases, which were all that were noticed in the register from January 1, 1776, to December 31, 1785, (though possibly more might have been so circumstanced, had an accurate inquiry been made at the time of the patients coming in) that two were cured, one much better, and one no better;—a proportion that agrees perfectly with the former account.†

From January 1, 1788, to January 1, 1791, eighteen cases of palsy from cold were received into

* See Narrative above quoted.

† From the history of a paralytic case, recited in page 22, case VII. of the "Narrative of the Efficacy of Bath Waters in Palsies," above quoted, it seems probable, that the sudden application of cold internally, as by drinking cold water when the body is heated, may produce this disorder. This patient, however, after seven weeks stay, was discharged cured.

the Bath Hospital, of which seven were cured, six were much better, four were better, and one only died.

In Palsy from Heat.

I have seen a case wherein the paralytic affection was (as far as could be traced) caused by exposure of the head to the sun's rays, by a man incautiously sleeping in the sun with his head uncovered in extremely hot weather. Various remedies were administered, before a trial was made of the Bath waters, but all without effect; but after the use of the Bath and pump for a fortnight, he was perfectly restored. The disorder in this instance deprived the patient nearly altogether of the use of his speech and limbs.

Palsy from external Accident.

External accidents, it is well known, have often produced Palsy, when an injury has been done to the brain or spine of the back. Two cases of this kind are described in Dr. Charlton's Inquiry; the first where the disorder was produced by a blow on the head from a fall; the second, from a distortion of the third and fourth vertebræ of the neck, by a similar accident. The former of these cases was not sent to the Bath Hospital until upwards of a year after the accident; the latter not until six months had elapsed. The former, after a stay of forty-six

days only, was discharged greatly relieved; the latter appears to have received a perfect cure. An involuntary and insensible discharge of urine, and a tense swelled belly, were symptoms common to both. The use of the pump upon the part affected, appeared, in both these instances, to be the principal agent in the cure.*

Out of nineteen cases of palsy from external accident, admitted from May 1751, to May 1764, sixteen were discharged cured, two were no better, and one dead. Out of five cases of palsy from external accident, which occurred in the three years above referred to in the notes, one was cured, one much better, two no better, and one improper.

Four cases of palsy from external accident are related in the Narrative published in 1787 by the faculty belonging to the Bath Hospital; in two of which a cure was performed, in another much relief was afforded, and a third was no better. Out of thirteen patients of this kind received into the Bath Hospital from the end of the year 1775, to the end of the year 1785, two were cured, five were much better, two were better, three no better, and one dead.

Distortion of the Vertebræ from Disease, sometimes attended with Palsy.

Distortion of the vertebræ sometimes takes place, without any external violence; and this is often

* See Dr. Charlton's Inquiry, p. 21—58.

accompanied with palsy, generally affecting the lower extremities. Whether this palsy be the consequence or the cause of the distortion of the vertebræ, or merely a concomitant symptom, is not fully determined, nor is it the purpose of this work to discuss; it is sufficient here to point out the efficacy of the Bath waters in such complaints.

Dr. Charlton has related a remarkable case of this kind, wherein six of the vertebræ of the back suffered a partial dislocation.*—This was preceded by a great pain, and followed by an entire loss of motion, and nearly of sensation, in the lower limbs, which were besides cold to the touch, of a livid hue, always covered with a clammy sweat, and the blood-vessels preternaturally distended. The pains in the back, which preceded the palsy, still raged with the utmost violence. To add to these discouraging circumstances, the disorder had continued above a year before the patient applied to the Bath waters for relief. The first thing advised, in the very judicious course he was directed to pursue, was the use of the bath; after trying which for a few weeks, his back was pumped upon, and he was ordered, on coming out of the bath, to be suspended in a swing as long as he could bear it; after the use of which, the distorted vertebræ were anointed with an emollient liniment, and covered with a soap plaister. No internal medicines were administered, save what was

* Charlton's Inquiry, p. 62.

necessary to keep the body open :—for the first eight months no alteration was perceived, except a gradual abatement of the pain ; at the end of this period, he could move his toes; two months afterwards he could walk with crutches; and in less than three months afterwards, he was restored to the perfect feeling and the use of his limbs.

Two cases of a similar kind are related in the Narrative before quoted, in one of which the operation advised by Mr. Pott had been tried without effect. This patient, however, after a long trial of the waters, amounting in the whole to near seventeen months, was discharged cured, on the 20th of March, 1783. This case was the more discouraging, as one of the vertebræ only was displaced ;—a circumstance which has been observed by the surgeons belonging to the Hospital to be less favourable to a cure than if several were concerned.*

Another case is related in the same work, where the curvature of the spine was very considerable, which was cured by the use of the Bath waters in somewhat less than the space of eight months.

Dr. Charlton has remarked, with great propriety, that it is happy for such sufferers to be informed that the waters generally succeed in this kind of palsy. Even those the most disadvantageously circumstanced, have been some of them cured, and

* Narrative, p. 46, 47.

others so far relieved, as to render life comfortable, when compared with the state of misery they had before suffered.

It is in general observed, that all paralytic disorders, that are attended with pain are much relieved by these baths; and that the abatement of the pain is generally the first sign of amendment.

It has been thought, that pain coming upon a paralytic limb, which before was defective in point of sensation, is a mark of recovery, and this indeed appears to be in some instances true; but I have uniformly observed, that when pain was among the first symptoms of the disorder, (which is not an uncommon circumstance) the increase of pain was always a mark of the aggravation, and its abatement of the diminution of the complaint.*

Of forty persons thus afflicted, nine were cured, three much better, eight better, eighteen no better, and two dead.†

Palsy caused by Lightning.

In the Narrative above referred to are two remarkable instances of palsy caused by lightning. The

* Εs αναχλησιν & χαχιων αποψιν.

† In the three years above-mentioned, nineteen persons were admitted into the hospital, for palsy from this cause, of whom one was *cured*, six were *much better*, four were *better*, six *no* better, one of whom was an improper subject for a trial of the waters, and two died; one of whom died of a mortification.

affection in one of these cases was general, in the other it was a hemiplegia ; but whether the latter of these was caused by the stroke of lightning, or by the patient's remaining senseless upon the wet ground during the night after his being struck down, is not absolutely certain. Both these persons were discharged much better.

Palsy from Mineral Substances.

Some mineral substances, especially those of the metallic kind, have been remarkable for producing paralytic symptoms.

Lead.

Of these, lead is the principal, the effects of which in this way are well known. This metal is capable of producing morbid symptoms, either when swallowed in a state of solution, or even in substance ; or by its particles or its vapour being drawn in by the breath ; or by external contact, particularly if the metal be heated.

The first symptoms of its malignity generally appear in the stomach and bowels. A sense of weight* and pain generally about the pit of the stomach, sickness, and costiveness mark the first appearance of this disorder. These symptoms, if not attended to, and

* See Dr. Warren's very accurate account of the nature and cure of this disorder ; Medical Transactions, vol. II. and Tronchin de Colica Pictonum, cap. vi.

alleviated by proper remedies, among which opium bears the first place, are soon aggravated. Bilious vomitings, difficulty of passing the urine, and violent spasms of the abdominal muscles, form the next stage; and if it be yet farther neglected, a palsy of the wrists comes on, and sometimes, when the complaint is more violent, deafness, delirium, and epileptic fits, put a quick termination to the scene of life.

It is doubtful if the cholic in cyder countries, Devonshire particularly, be not the same disease with the one above described, and produced by some mixture of this metal with the cyder. It is not denied that they exactly resemble one another; and that the one which we know with certainty to be produced by lead, is attended with symptoms of a very peculiar kind, and totally dissimilar to any that either reason or experience would lead us to conclude, were produced by the fermented juice of a fruit so well ascertained to be of an innocent nature as the apple. This, however, is no place for such a discussion; but as the complaint is undoubtedly the same, even granting it should be capable of being produced by different causes, I shall consider it here under the general appellation of the Lead Cholic. Dr. Charlton has recited seven cases of this kind, all agreeing in the leading symptoms, of commencing with cholic, and terminating with a palsy of the wrists.

The first stage of this disorder we know at the Bath Hospital only by report, but the accounts are

too uniform to admit of the least doubt of the nature of the symptoms. Those that I have seen were all affected with a weakness of the wrists, but had no pain, or other disorder of the bowels; which I believe almost always ceases when the hands become paralytic.

The general practice at the Bath Hospital in this complaint is, first to administer a gentle dose of purging physic, after which the waters are directed to be drunk cautiously; and if any costiveness should return, the cathartic is occasionally repeated, or some opening mixture or pill directed to be taken when necessary. In a few days the use of the pump upon the wrists and fingers is directed, and sometimes the bath joined with it. The pump is generally used daily, from 50 to 200 strokes at a time. If the amendment goes on favourably, no other method is necessary; but it often happens, that after the use of the waters for about a month or six weeks, and after considerable benefit has been received, the amendment will seem to be at a stand. In this case it is usual to advise the use of the waters to be laid aside, and blisters to be applied sometimes to the wrists, and at others to the external muscles of the arm between the elbow and the wrist, and to be kept running a few days, and then suffered to heal. The pump is then applied a second time, and, it is observed in most instances, with much better effect than before. This process is repeated, if necessary, two or three times; and it often happens, that very obstinate and deplorable cases are thus happily recovered.

It is a common observation, that in cases where the symptoms are violent, and the complaint is of long standing, or has recurred repeatedly, that the muscles which form the ball of the thumb are often wasted in such a manner as to leave a considerable hollow instead of a prominence in that part. This circumstance is generally looked upon in the London hospitals as a mark that the patient will not recover the use of his hands. Many of the patients, however, sent to this place have recovered the strength of their wrists and hands, notwithstanding this symptom. I have seen two cases of this complaint, in which the deltoides muscles were so much wasted, as to give the shoulder the appearance of being dislocated downwards into the axilla; both of these patients, however, got well.

The number of patients admitted into the Bath Hospital for this complaint, from May 1751, to May 1764, amounted, according to Dr. Charlton's account, to two hundred and seventy-six, including those said to be from mineral effluvia. Of these, two hundred and fifty-six were cured or benefited, six were no better, ten died, and four were improper subjects for a trial of the waters.

By a later account,* it appears, that of two hundred and sixty-four patients admitted from January 1, 1776, to December 31, 1785, one hundred and seventeen were cured, one hundred and thirty-eight

* Narrative before quoted.

were much better, two no better, and only two dead! What proof can be more satisfactory of the safety as well as efficacy of the Bath waters in this species of palsy?*

Copper.

Lead, however, although the principal, is not the only mineral substance that possesses the power of producing paralytic symptoms. In the Medical Museum there is an account of a person who lost the use of his hand by cleaning brass wire; and in the Narrative of the Cases at the Bath Hospital before referred to, is an account of one very similar, wherein the weakness of the hands was produced by the pointing of pins. This patient was, however, after a stay of one hundred and forty-nine days, discharged nearly cured. It is mentioned in the above work, that several patients injured by working in the brass-foundery have been cured in the Bath Hospital.

Mercury.

The Bath waters have also been found successful in those paralytic affections that are caused by mercury, especially in such persons as are exposed to its fumes, as gilders, &c.

* In the three years above referred to, one hundred and fourteen persons were admitted into the Bath Hospital for this disorder, of whom sixty-two were *cured*, thirty-four *much better*, eight *better*, eight *no better*, and two only *dead*, one of which died of the small-pox.

Arsenic.

Arsenic is mentioned by writers as productive of palsy, if gradually taken into the body. Of this we have had several instances lately in the Bath Hospital, three of which are recited in the Narrative* before quoted. The symptoms were much the same as are commonly described to attend the taking this poisonous mineral. It should, however, be noticed, that the palsy, in all these instances, seemed to begin from the extremities, and proceed gradually from thence to the trunk of the body, and not to affect one side more than the other. The Bath waters had the happiest effects in all the above cases.†

* Cases XVI. and XVII.

† I am inclined to suspect that the use of antimony, if it be long continued, has some effects of the same kind. I remember an instance where the use of tartar emetic, in small doses, was prescribed by the late Dr. Delacour and myself for a bilious complaint, with the greatest advantage. The patient, however, thinking its use more universal than it really was, acquired the habit of taking it frequently, and on the most trifling occasion. This, though it neither for some time vomited him nor made him sick, and only acted as a gentle purgative, in time weakened his stomach so much, that he could retain nothing long upon it, and he was obliged to have recourse to the Bath waters to cure the effects of his medicine.—It is observed, that dogs will become paralytic in their hinder parts, if the *crocus metallorum*, which is often put into the water they drink, to cure them of the mange, be left in it for a long time after the disease is cured. A remarkable instance of this fell under my own observation.

Palsy from Fever.

Palsies seem sometimes to be the consequences of other diseases. Thus they have been remarked to come after the termination of fevers. Several cases of this kind are described in Dr. Charlton's Inquiry, and the Narrative above quoted. It does not appear to have been produced by any particular species of fever. In Dr. Charlton's work, it is described in one instance as coming on after a miliary fever, and in two others as succeeding fevers of another kind. In the Narrative it is mentioned as coming on in one case after an intermittent fever, in another after a putrid fever, and in two others after fevers of which no more particular account is given, save that they were of the continued kind.

Nor is the nature of the palsy itself in anywise specific or peculiar. In the first instance related by Dr. Charlton, an universal shaking palsy was produced, in the two others a dead palsy. In the cases mentioned in the Narrative, a hemiplegia was produced in one instance, a palsy of the lower limbs in two, and a palsy of the hands in another.

It appears from Dr. Charlton's Inquiry, that from May 1751, to May 1764, seventeen cases of this kind were brought to the Bath Hospital, of which thirteen were cured, or benefited, two were no better, two were improper for a trial of the waters, and none dead.

By the account given in the Narrative, it appears, that from January 1, 1776, to Dec. 31, 1785, fifteen patients of this kind were admitted; of whom five were cured, nine much better, one no better, and none dead.*

It may appear extraordinary, that no medical writer (those only excepted, who have written on the subject of the Bath waters) has mentioned fever as the remote cause of palsy. I can find no hint of it among the authors of antiquity; and Van Swieten, whose industry in collecting materials of every kind to elucidate the history of diseases, was so remarkable, has not made any remark, that I can find, leading thereto.

Hoffman, likewise, has never recounted fever among the causes of this disease.

Huxham also, who has written professedly on the subject of fevers, has never mentioned palsy among their consequences.

The reasons of this omission, I apprehend to be, that such palsies very seldom happen among those ranks of people with whom medical practice is chiefly conversant. It is almost solely found among the distressed and indigent, and even among them is not

* Nine patients affected with palsy succeeding fever were admitted into the Bath Hospital, in the three years referred to above, of whom five were *cured*, two *much better*, two *better* and none either *dead*, or who received no benefit.

so common* as to be noticed on account of its cause, unless in a place like the Bath Hospital, where great numbers of paralytic patients are collected together, and a more accurate judgment concerning the causes of the disorder may on that account be formed.

It is my opinion, that palsies of this kind are owing in a great measure to the neglect and hardship which the poor often undergo, when unable to provide for themselves, and when from weakness, and the effects of a violent disorder, such deficiencies in point of proper food, clothing, warmth, change of linen, and attention to the prudent admission of fresh air, become much more distressing. Cold and damp† will, we know, produce palsy, even in people who are in health at the time of such trials; how much more then must be the want of the comforts of life, which in such circumstances become absolutely necessaries, affect those who are languishing under the effects of a violent disease. The following case, which lately came under my care at the Bath Hospital, indicates this very strongly:

Thomas Lucas, aged 20, a man bred to farming business, of the parish of Llanryddan, near Swansea,

* In Dr. Charlton's State of the Bath Hospital, the number of *palsies from fever* was to the whole as 17 to 1053, or nearly as 1 to 61.882. In the state given in the Narrative, the proportions were as 15, to 1102, or nearly as 1 to 73.298.

† See Cases III. V. VI. VII. VIII. and XXII. in the Narrative, and John Westlake's Case in Dr. Charlton's Inquiry, page 71.

Glamorganshire, was seized in the month of December, 1787, with a low nervous fever, which was then epidemical in that country.—During the continuance of this he lay in a state of delirium for near a fortnight, not only destitute of all medical assistance, but likewise of almost every kind of necessary due to his situation, as of proper food, clothes, warmth, &c. Towards the latter part of this time, an hemiplegia of the left side came on; after which his fever went gradually off, leaving him much debilitated generally, as well as what was owing to the paralytic attack. He, however, soon recovered his general loss of strength, but the weakness of his side continued. Electricity had been tried upon him, and seemed to produce some good effects, but these were not permanent. He was in no pain, his bowels regular, his appetite good, but his sleep at night interrupted. The above was the state of this man's health, when he was admitted into the Bath Hospital, on May 7th, 1788; and on Dec. 24th of the same year, after a stay of 231 days, he was discharged better.

Palsy from Rheumatism.

Rheumatism, when chronical, often brings on a degree of weakness of the limbs much resembling palsy. It differs, however, in this respect, that the weakened parts retain the sensation perfect, and the temperature is seldom altered.—From the account given in Dr. Charlton's Inquiry, it appears, that of

twenty-seven patients, twenty-two were benefited, three were no better, one dead, and one improper to be continued.—The account given in the Narrative is less favourable; in that two out of three received no benefit.

Palsy from Lying-in.

Palsy has sometimes, but not very often, proved an attendant on women's lyings-in, or miscarriage. This sometimes appears in form of an hemiplegia, but I believe most commonly falls on the lower limbs. This may in some cases proceed from cold and hardship, during the time of confinement, but this is not always the case, as I have known it happen where nothing of that kind could take place. From its generally affecting the lower extremities, it is to be suspected that it arises from some injury received in delivery. Two cases are related in Dr. Charlton's Inquiry,* both of which were hemiplegias, and one of them combined with convulsive affections. Both cases received great benefit.

Two cases of a similar kind are related in the Narrative, save that the disorder here affected the lower extremities. One of these was dismissed much better, the other was cured. It appears by the statement

* Two cases of this kind occurred in the three years above alluded to, one of which was cured, and the other much better. —Pages 28, 29.

given in the Narrative, that four out of five patients admitted in such a state, were cured or benefited.*

Such is the best account I have been able to collect of the efficacy of Bath waters in palsies; which I doubt not will prove highly satisfactory, as it fully proves from evidence that is incontrovertible, their powers in the relief of a disorder, that affords fewer indications to be pursued, and less prospect of success than almost any other to which the human frame is liable. Before I dismiss the subject, I wish to add a few observations.

It is a common opinion,† that paralytic complaints are in the present age more frequent among young persons than they were formerly.—What proportion the number of palsies might bear to the ages of those afflicted with them a century or more ago, I have no evidence to determine; but the following table, to which I will beg leave to add a few remarks, affords a presumption that more than fifty years ago (a

* Dr. Charlton says that he had known nine or ten more instances, besides those specified in the table, of women who became paralytic in their lower limbs from accidents attending their lying-in; all of whom, except two, were cured, or considerably benefited; and one of those who were not relieved had been seven or eight years in that state before she made a trial of the Bath waters.—Inquiry, page 47.

† This opinion is adopted by Dr. Charlton.—See Inquiry, page 5, ad imum.

period beyond which but few people's memory of medical practice extends) palsies were at least as common among young persons as they are in the present age.

TABLE of the Ages of Patients received into the Bath Hospital, for Palsies without any assignable cause, during the years prefixed in the margin, containing three periods of seven years each.

	ANN. DOM.	AGES OF THE PATIENTS.				
		10 and under	*From 10 to 20*	*From 20 to 30*	*From 30 to 40*	*40 and upw.*
FIRST PERIOD.	1742			12	13	9
	1743		4	6	3	4
	1744	1		4		2
	1745			2	4	3
	1746	1	5	7	3	8
	1747	1	5	7	7	3
	1748		3	6	7	11
SECOND PERIOD.	1752		3	7	6	6
	1753	2	3	7	8	14
	1754	1		5	5	8
	1755	2	2	8	11	9
	1756	1	2	8	5	13
	1757	2	1	3	4	12
	1758	2	3	7	3	9
THIRD PERIOD.	1776	1	6	10	17	19
	1777	1	3	8	17	26
	1778	3	4	11	8	20
	1779	3	2	12	11	28
	1780		3	10	11	19
	1781	1		4	6	18
	1782	1	2	6	10	27

The first period in the foregoing table contains the years from the beginning of 1742, (which I believe is the first year that the register was duly kept, and not long after the hospital was opened) to the end of the year 1748, being a period of seven years. The number of persons under thirty years of age received into the Hospital for idiopathic palsies during that time, was 63, and the number exceeding that age was 77; which is nearly as 1 to 1.222.

The second period is of equal duration, and extends from the beginning of the year 1752, to the end of the year 1758. The numbers in this time were, of people under thirty years old, 69, and of those who exceeded that age, 113; which is nearly as 1 to 1.6377.

The third period begins from the beginning of the year 1776, and continues to the end of the year 1782. The numbers during this time, under thirty years old, were 91, and those exceeding that age were 247, or nearly as 1 to 2.7204.

The register is not in every case accurate with respect to ages, they being in some instances not specified, which has made the numbers appear smaller than they would otherwise have done; none being noticed in the above account but those whose age was put down, which I make no doubt is correct. Nor is there any reason to think that, if the ages of those persons which are not specified, could be

ascertained, it would alter materially the proportion as it stands in the foregoing table.

If this account then be taken as a guide, (and I know of none better entitled to be so) the proportion of persons attacked with palsy under thirty years of age was greater upwards of fifty years ago than at present. Might not this be caused by the drinking spirituous liquors, which was then so common a practice among the lower ranks of people?

The shaking palsy was observed many years ago to be less benefited by the use of the Bath waters, than the other kinds. Dr. Charlton notices, that out of four cases of this sort one only received benefit. In the Narrative it is mentioned, that of twenty-one shaking palsies one only was cured, three were much better, five better, and twelve no better. This fully confirms the former opinion.*

Dr. Charlton observes,† "Where the waters make in hemiplegia a complete cure, their good effects are speedily apparent; and where they operate more slowly, or the patient finds little alteration after some weeks' trial of them, the service they then do is partial only. In these instances the leg is usually the only part, as in complete cures it is the first, that

* Eight cases of the shaking palsy were admitted into the Bath Hospital in the three years above specified, of whom two were *much better*, three *better*, and three *no better*.

† Inquiry, p. 41.

recovers."—Every day's experience at the Bath Hospital verifies the above remark.

Use of the Bath Waters in Gout.

The gout is another disorder wherein the Bath waters have been long, and with justice, celebrated for their efficacy. This disorder, though probably of one species only appears in so many forms, and accompanied with such a variety of symptoms, as to make the indications relative to it vary almost as much in its different stages and circumstances, as if the patient laboured under so many different diseases. I shall endeavour to explain the use of the Bath waters in such different situations as well I am able.

The Bath waters are well suited to that kind of gout called by Mr. Sauvage the Winter Gout, which is indeed the most common of any. This usually comes on towards the decline of life, and does not in general keep regular periods, but is subject to recur throughout the whole year, the summer months excepted. This appears to have been the kind of gout which Sydenham has described so well, and under which he seems to have laboured. This kind of gout* is always attended with signs of weakness of

* Ventriculi cruditate atque Απεψια ad septimanas aliquot æger laboraverit corporis insuper intumescentiâ quasi ventosâ et gravitate quæ indies augetur donec tandem detonet paroxysmus.—Sydenham, p. 436, l. 3 ab imo.

the stomach and organs of digestion, such as imperfect concoction, and nauseous eructations, flatulence, and want of appetite.

These symptoms, at the beginning of the disorder, generally precede the paroxysm, and when that is over, go off of their own accord; but when the paroxysms have been repeated often, such symptoms are apt to remain a considerable time after the fit is over, and often during the whole interval between one fit and another; and there is no doubt that this state of the viscera renders the subsequent attacks apt to be longer in duration, and more liable to fall upon the stomach and bowels. To keep these organs then, as far as possible, uninjured in the performance of their functions must be a principal object with those who attend persons afflicted with this disorder; and nothing succeeds more frequently or happily in fulfiling this intention, than the Bath waters internally taken.

Their effects in this way must not be confounded with those of other medicines, which are commonly esteemed to have the power of strengthening the stomach; as warm aromatic bitter preparations, and such like. The Bath waters, in weakness of this kind, proceeding from a gouty cause, scarcely differs less from such in their effects than in their sensible qualities, and have often been found to exert their efficacy in the happiest way, when such remedies as

I have just alluded to, have lost all their force ; and frequently when the stomach itself owes its debilitated state in no small degree to its having been overcharged with stimulant and heating substances.

The situation here described, occurs frequently at this place, among persons who have produced or aggravated the gout by intemperance in living, and particularly those who have indulged in strong liquors. Such persons are not only subject to the symptoms already described, but are often afflicted with the actual presence of the gout in the stomach and bowels, indicated by the spasmodic pain of the part, which is often attended with sickness and vomitting, and sometimes with a sense of heat, and at others of coldness and insensibility of that organ. In such cases it is scarcely possible to describe the grateful sensation which the Bath waters impress upon the stomach. They act often as the most powerful cordial, without any of the heating and irritating effects of spirituous preparations ; but on the contrary, generally repress those irregular flushings of heat which often accompany depraved digestion, and quench thirst (often a troublesome attendant on such a state of the body) better than any other liquid. Their good effects are soon manifested upon the appetite, which is in a short time improved, together with the powers of digestion ; and many kinds of food, which before could not be taken without nausea, or, if swallowed, not retained without great

trouble and uneasiness, are eaten with pleasure, and digested with ease. It frequently happens also, that the bowels, from being costive, become regular, by the use of the Bath waters, as well as the secretions by urine and perspiration, the strength and spirits return, and the whole of the vital functions are in a great measure restored.

The above account of the effects of the Bath waters would be much too flattering, if it were described as universally taking place. It must not be expected that the Bath waters can act in a manner so powerful and happy, unless a considerable degree of strength and vigour remain in the constitution, and there be no signs of schirrus, or other local affections of the liver or any of the viscera, being actually formed. Nor must it be inferred from what has been said that the waters will continue repeatedly to exert the same powers which they manifested the first time of trial. However flattering the state of the health so restored may appear, experience has but too often proved that a repetition of the former irregularities will soon disappoint such hopes, and reduce the patient generally to a worse state than in the former instance. The same remedy may, indeed, again succeed in some degree, but the probability of success is diminished, and if it takes place at all, the effects are more slowly produced, and the recovery less complete.

If indeed, when the disorder is owing to excesses of this kind, and the patient will, by a resolute and

steady exertion, follow a regular course of life, experience hath shewn, that when age is not too far advanced, and the viscera remain free of any permanent local disease, that the health may be, in fortunate circumstances, almost altogether recovered. This event is more likely to take place with those who have spared their constitutions in youth, and made free with them afterwards, than with such as have commenced their irregularities in early life. The Bath waters agree much better with persons of the former than of the latter description. The latter seem to possess in many instances the imbecillity of age, combined with the irritability of youth. A cordial remedy, like the Bath waters, appears to be indicated; but when tried, the stimulus proves to partake too much of an inflammatory nature. —This premature mixture of the diseases of age with the habits of youth forms a situation perplexing to the physician, and highly distressful to the patient.

This embarrassment is much aggravated, if spirituous liquors have laid the foundation of the complaint, as is too often the case; since these injure the stomach, liver, and nervous system, much more than such as are simply of the fermented kind. I do not mean to say that such cases can admit of no relief from the Bath waters, but must observe that the proper use of such a remedy is matter of great delicacy

in point of management, and, I am sorry to add, of uncertainty in the event.

I must by no means be understood to charge every person thus unseasonably, as it should seem according to the general course of nature, afflicted with the gout, as being the authors of their own malady. We meet with instances but too frequently, wherein the children suffer for the faults of their progenitors; and some occur, where though the disorder be evident, this connecting cause cannot be traced. I am sorry to own that I have seen people born of healthy parents, and who had always led the most regular and indeed exemplary life, labouring under the most afflicting symptoms of the irregular gout at an early period of life, with all the functions of nature weakened and impaired; and yet with such irritability (not only of the nervous, but of the circulatory system also) as not to be able to endure the use of those remedies which are usually administered to excite the vital powers. In such cases, I have seen the Bath waters, administered internally in the most cautious manner, excite such an inflammatory disposition in the system, as to require the immediate use of evacuations, which were ill suited to the general state of the patient's health. Instances, however, of the unsolicited gout to the degree here described, are not, I believe very common. I shall say more on the use of the Bath waters in cases of the above descrip-

tion, when I come to speak of their external application in the gout.

I have before mentioned, that those who apply in such circumstances to the Bath waters, must do it whilst a certain degree of vigour and strength be left in the system, else little benefit is to be expected from their use. This, though it ought to warn those affected as above described to make a trial of this remedy before their disorder is too far advanced, need not discourage from the experiment people whose strength is much diminished, and their organs of digestion greatly disordered; provided no certain indication of schirrhus, or other bad affection of the viscera, have appeared.

We are liable to err in nothing more frequently, than in our estimation of the powers of life. We at least as often depreciate as over-rate them. The efforts of nature appear sometimes to be subdued and extinguished, when they are only, as it were, clogged and obstructed, and remain capable of being excited, by proper means, into vigorous and powerful exertions to resist and overcome disease. No situation exemplifies this more strongly than that of which I am now speaking. Every medical practitioner at this place has seen instances of people labouring under want of appetite, pain and spasm of stomach and bowels, together with all the other symptoms of depraved digestion, and want of power in the proper organs to perform their functions, joined to a very

great degree of weakness, both of the body and of the spirits relieved by the use of the Bath waters. The recovery, in such cases, is particularly remarkable, for its taking place so quickly after the commencement of the trial of the remedy. A few days will frequently work such a change in the situation of the patient as would be scarcely credible, were it of less common occurrence. The appetite is often restored altogether, the wandering spasms and pain cease, the natural rest returns, and the spirits are raised to their proper pitch. The strength likewise improves daily, and the natural secretions and regularity of the body, in point of evacuations, are restored.

So rapid a progress in amendment is apt to encourage those who experience it (who are often of a sanguine temperament of mind as well as body) to trespass in some measure in point of regularity with respect to regimen of life. But experience has proved the necessity of great caution respecting such articles; and shewn that however the symptoms of returning health may, and indeed ought to, encourage hopes of a complete recovery, yet notwithstanding such a state is liable to be easily disordered a second time, and all the flattering expectations it suggested disappointed by such imprudence.

Stage of the Disorder most proper for a Trial of the Bath Waters.

The stage of the disorder most proper for a trial of the Bath waters, has been settled by long

experience, (a foundation not to be shaken) to be that in which the inflammatory symptoms, if any have preceded, have in a good measure abated, and a degree of weakness and want of tone in the system begins to take place. Whilst the fever prevails the waters are improper, and likely to increase the disorder, by exciting the nerves and circulatory vessels into too violent action; and by such overstrained exertion, lay the foundation in future for greater debility than might otherwise have accrued. When the fever, however, has subsided, it is found of the most important consequences to health that the strength should be recruited as soon as possible; otherwise the fit is apt to return again soon in an imperfect and irregular form, and tedious in its duration. At this period the Bath waters are singularly useful in accelerating the recovery, and enabling the patient to resist the access of a crude and indecisive paroxysm. Care, however, must be taken, not to precipitate the use of this remedy, by taking it before the pulse and other symptoms evince that a tendency to fever is no longer to be apprehended.

The Bath waters have also been esteemed for producing gout in persons afflicted with many anomalous symptoms of disorder, which have been ascribed to irregular gout, though no symptoms of that disorder, distinguished by its proper characteristics, have appeared. It sometimes indeed happens, that the Bath waters will in such cases produce a gouty

paroxysm, and thus afford great relief to the other more troublesome though less painful symptoms. But it is very common for the gout to be supposed, when the nature of the complaint is totally different. A kind of prejudice has prevailed with many, and among them several professional persons of eminence, in favour of the opinion that a large proportion of the complaints that afflict mankind are to be referred to the class of gout. This fanciful theory has, I am apt to think, been injurious to the success of medicine by prompting the use of remedies which were imagined to have a reference to a supposed disorder, whilst those, which were adapted to more obvious indications, were overlooked.

The mode of using the Bath waters internally in the gout, does not materially differ from that practised in other complaints. Common prudence dictates, that in delicate cases much caution should be used not to overload the stomach, and create a disgust to the remedy at the commencement of the trial. A small glass, of a quarter or one third of a pint contents, may be tried before breakfast at the first time of taking; and if this quantity feel easy, light, and pleasant to the stomach; if the mouth continue moist, and the taste of the water is grateful to the palate; and particularly if it pass off freely by urine, another glass of the same size may be taken the same day about noon. If the same circumstances take place at the second time of drinking, the quantity

may be gradually enlarged, and two small glasses be taken before breakfast, and one at noon as before. If the waters continue to agree, some of their good effects will be quickly shewn by the increase of the appetite. This, however, requires some caution in its indulgence. It is obvious that it would be very improper to return again to the use of such highly stimulating articles as contributed originally to produce the disease; but a farther caution is often necessary, to be moderate even in such as are most unexceptionable. The appetite is sometimes increased, before the powers of digestion are strengthened in an adequate proportion. Those, therefore, who use the waters should have a regard to this circumstance, concerning which no determinate rule can be laid down.

It is worth remarking, that the first symptoms of amendment of appetite appear in the desire for food at breakfast. Whether this be owing to the principal part of the water that is drank being taken just previous to that meal, I cannot say; but it suggests a necessary caution relative to the nature of the food taken at that time. New bread, taken hot from the oven, and plentifully buttered, or rich cakes dressed in the same manner, are from their palatable qualities frequently brought up at this meal. These, however, are cloying and difficult of digestion even to the most healthy, and still less suited to encourage the dawnings of appetite; stale bread, or biscuit,

either toasted or cold, with a moderate proportion of cold butter, is much more proper. In some cases a few thin slices of some salted meat eaten with bread and butter, form a morning meal agreeable to the taste, and easy of digestion.

It is necessary to caution such persons against indulging their appetite for the Bath waters, as well as for other articles. I have often seen those who are in a course of drinking them, and who are particularly sensible of their efficacy, express the greatest desire for them, and wish to indulge in the quantity. This, however, must by no means be allowed. The appetite for these, as well as for other pleasures, is successfully gratified only by their moderate use.

To take them too freely would, independent of other hazards, only produce satiety and disgust. I have never found from my own observation, that more than a pint and a half of the waters taken daily in three equal portions, was of real service; and in general a pint, taken in the same manner, is sufficient.

It sometimes happens, with delicate subjects, that the addition of some aromatic substance is useful in accommodating the taste of the water to the palate and stomach. The tincture of cardamoms, I have before observed, to have been used for a similar purpose; and the acid and sweet elixirs of vitriol, of the former London Pharmacopœia, were still more effectual in cases where flatulence was a troublesome

symptom. Probably the *spiritus ætheris vitriolici compositus* of the present Pharmacopœia might answer equally well.

It sometimes happens, that the tone of the intestines is so weakened, and their sensibility increased by repeated gouty attacks, as to be liable to great laxity; and the Bath waters in such cases may, from their bulk and quantity when drank, excite this discharge. This, however, unless very moderare indeed, must by all means be repressed, as nothing is more injurious to weak gouty persons, than an increase of this evacuation. To obviate this inconvenience, the waters must be taken in small and divided doses, with a small quantity (thirty or forty drops for instance) of the *tinctura opii camphorata*, (lately called *elixir paregoricum*) in each glass. It however more frequently happens, that the state of the body, during the use of the waters, tends rather to a costive habit than the contrary. This, though less prejudicial than the other extreme, is necessary to be remedied; and in general a few grains of the *pulv. aloeticus cum guiaco*, or of the *pilula ex aloe cum myrrhâ* taken occasionally, will greatly relieve this symptom.

I have before observed that a repetition of former irregularities in regimen of life will soon destroy all the good effects of the Bath waters.—This caution is particularly necessary to be attended to during the

use of the waters, and regards not only food, and the use of strong liquors, (those of the spirituous kind especially) but exercise also, and the going to rest, and rising at the natural, but as they are now thought early, hours.

The proper time for the drinking of the waters to be continued, is always a subject of attention, and sometimes of delicacy. In general, about three weeks is a proper time for the uninterrupted continuance of their use, after which a week or ten days' interval will be proper, and they may be again commenced, and continued for a like time as at first. In delicate circumstances it may be proper to begin with the water of the Cross-Bath, but if this be not the case, such caution is unnecessary. In costive habits, the waters of the Hot-Bath is preferred, but I doubt if this preference be upon a sufficient foundation.

I cannot forbear in this place cautioning those whose health does not require the use of the Bath waters, to avoid meddling with them, especially if such persons be of gross and plethoric habits of body. Strength of constitution, and an athletic habit, only render the use of stimulating substances (especially such whose tendency is particularly to excite the circulation, and cause a stronger action of the vital powers) the more dangerous, as they coincide with that disposition which perhaps may

already preponderate but too strongly.*

Apoplexy, and its usual consequences, have not unfrequently followed such injudicious trials. I saw an instance of this in a person in high office,† and of great abilities, a man of a robust habit and great bodily strength, who about seventeen years ago fell a victim to this unadvised drinking the Bath waters. When he came to this place he had no complaint of any kind, and although he drank the waters pretty largely, it was with no specific medicinal intention. Their effect was, to render the body costive, to produce a pain of the head, and to increase the appetite. These circumstances being disregarded, a few days afterwards, whilst he was persisting in the use of the waters, he was seized suddenly in the public rooms with an apoplectic fit, and expired in about twelve hours from the first attack, though assistance was immediately called, and due evacuations procured as soon as possible.

External Use of the Bath Waters in Gout.

The use of the waters externally has long been recommended in gouty cases, those particularly where

* It is well observed by Hippocrates, that, excess of health and strength borders upon disease; which both he and Galen instance very properly in the athletæ. See the first book of the Aphorisms of Hippocrates, Aphorism III. with Galen's Comment thereupon.

† I saw another case of the same kind lately.

the limbs are affected with stiffness and permanent swellings, not of an inflammatory kind. These are very frequent in cases where the constitution is weak, and the habit leucophlegmatic; signs of the disorder appear, sufficient to ascertain the existence of such a tendency in the system, but the powers of life are not active enough to cause it to shew itself in its proper inflammatory form.

Hence the disorder seems to have no proper crisis, but to continue often for a long time, at nearly the same stage and degree. The parts remain swelled, and are at times painful; but such seeming efforts of nature are not of sufficient continuance to give a regular termination to the complaint. Hence the joints, by long continuance in the same posture, are apt to become rigid; and the same cause, joined to a sedentary life, and the weakening effects of local disease, cause the parts to become oedematous.

In such cases the bath is singularly useful, by exciting the circulation, and stimulating the nervous system into action and exertion. Sometimes it will produce a regular fit, but I think it more commonly acts by carrying off the symptoms that remain, by mild and gentle perspiration, and by moderately stimulating the parts to absorb the stagnated lymphatic fluids. This kind of gout approaches nearly to that described by Musgrave, under the name of *Arthritis ex Chlorosi*, or *Arthritis alba*. It is found, however, in both sexes, and resembles in its general

character the irregular gout first described. When found at an early age in the female sex, it is generally among those who have an hereditary claim to the disease, and who labour under a suppression of the menstrual discharge; which circumstance seems to accelerate the premature appearance of the gout. The Bath waters, in this mode of application are not only suited to the relief of the original disorder, but also are adapted particularly to the circumstance, by which we have reason to think it aggravated, if not produced.

The Bath waters, though improper to be used externally during the inflammatory stage of the regular gout, are often of great service during the intervals, in preventing the rigidity of the muscles and that tendency to anchylosis in the joints, which are so subject to come on after a violent and painful gouty paroxysm. It was observed many years ago by Sydenham,* that violent attempts to excite perspiration, however they mights ucceed in accomplishing that end, had a bad effect in fixing the gout too strongly upon the part affected; and latter experience has shewn, that when a profuse perspiration of the part has been produced, and continued some time by artificial means, as by oil-case coverings, and the like, that the articulations are subject to become rigid, and to be confined in their power of motion, and

* Tract. de Podagra, p. 450.

often discover a crackling noise upon being stirred; which is undoubtedly owing to the effect of synovia, which appears to be exhausted, or its generation obstructed by the excess of the local discharge.

The cautious use of the Bath waters externally produces, however, very different effects. From the above-mentioned applications, the perspiration the former excite resembles the natural breathing sweat,* which is the proper termination of a gouty paroxysm, and the fluid which is properly absorbed serves to dilute the secretions, and to supply the defect of moisture; not to exhaust it like dry artificial heat, and the other applications before mentioned. Hence we almost daily find that gouty limbs (provided no actual anchylosis be formed) soon recover their flexibility, and the proper moisture and free use of the joint, by bathing and pumping the parts, provided that this remedy be tried in a short time after the inflammation be gone off, and before the parts lately inflamed shall have time to form any permanent cohesion, and the muscles have acquired any considerable rigidity, by being long retained in the same situation.

Muscular contractions do not become irremediable in so short a time as an adhesion of the bony parts is sometimes formed; but still, if neglected, the muscles will in time become tendinous, and lose their

* Sydenham, page above cited.

power of contraction and extension, and of course the joint will become immoveable. The immediate effect of the warm bath on muscular contractions not of too long standing, is truly wonderful. Though the limb be apparently stiff and inflexible, the body is no sooner immersed in the water, than the former becomes supple and obedient to the will, and continues so during the patient's stay in the bath. Upon coming out again, the stiffness returns, but a frequent repetition of the bath renders the limb gradually moveable, and at last restores its uses altogether. This, however, must be understood to comprehend such cases only wherein the structure of the muscle itself was not altered, or had acquired that degree of bony hardness, which by long continuance in a state of inactivity it is apt to do. In cases indeed of no very long standing, we should not be discouraged from a trial of the Bath waters, notwithstanding a great degree of hardness of the muscles and stiffness of the joint has taken place. I have seen the biceps muscle* of the thigh, and the semimembranosus and semitendinosus in a state that to external examination would have seemed too hard and rigid to have admitted any change, relaxed entirely, and rendered pliable by the use of the water continued for a long time.

If the stiffness pervade many of the joints, (as of the arms and fingers, as well as those of the lower

* These three muscles form the external and internal hamstring.

extremities) it is usual to advise bathing, by which the water is applied to the whole body at once without the trouble of a specific application to each part; but where any particular limb or joint is affected, either separately or in a much superior degree to the others, it is common to recommend the use of the pump. This may be, and often is used during the time of bathing; when if the pipe be brought below the surface of the water of the bath, the impulse of the stream is much less strong than if used without such intermedium. This method serves very well where the parts are anywise tender, or where the patient has not been accustomed to the operation.

The other method, which is here called by the quaint phrase of dry pumping, is the application of the water by a pump to any particular limb or part of the body independent of the rest. This has some advantages, as the water may be applied in a more powerful form than that of a simple bath; and the fatigue is at the same time diminished, and the patient less subject to faintness than when the whole body is immersed. No time for stay in the bath can be specified; from five minutes to half an hour is the usual allotment. When the pump is used, it is mostly directed from twenty to two hundred strokes at a time. Twice, or at most thrice a week, is sufficient for bathing, but the dry pump may be used daily.

The use of the bath or pump (the latter especially) may be continued for a longer time than the drinking

the waters. It does not appear that any interruption of the external use of the Bath waters is necessary, in order to secure their good effects. They are often tried for two, three, four, or five months successively, with a gradual improvement during the whole of the time. When used, however, as baths for so long a period, it is adviseable that a moderate temperature (as of 90 or 92 degrees) and a short stay be employed, lest the discharge by perspiration should prove too weakening. Less caution is requisite relative to the pump, as being a partial application only.

It is found that the bath may be made use of with advantage when the waters prove too stimulant for internal use. This is particularly exemplified in the gout, especially in young subjects. The greatest caution is, however, in such cases necessary, to use such a degree of heat only, as may prove soothing to the feelings, without exciting the circulation to a feverish point; about 88 or 90 degrees is proper to be tried at first, and should not be increased to more than 92 or 94. When thus cautiously tried, I know by experience that the bath may be continued even in delicate circumstances, a long time with great advantage. A temperate season best suits the external use of the Bath waters. Cold is in every respect adverse to their efficacy; and great heat is apt to encourage profuse perspiration. A warm, rather than a cool season is, however, to be preferred.

It is proper that the body should be cooled gradually after bathing, and on that account, it may be proper to go to bed for a short time afterwards, if the patient bathes early in the morning; but any extraordinary heat (either by warming the bed or of the chamber, or of the quantity of clothes, or by warm liquors) are improper. If the patient bathes at noon, or in the evening, no other caution will be necessary, than such as will gradually bring the body to its usual temperature. With regard to the regimen, the one recommended when the waters are taken internally in the gout, is at least equally proper here. The good effects of the waters seem to be owing more to their action on the nerves and the pleasing and agreeable sensations which they induce, (which tend to compose and allay the irritability of the system at large) than to any particular evacuation which they produce.

Use of the Bath Waters in Rheumatic Cases, of the Acute Kind.

The rheumatism is a complaint nearly allied to the gout, and, like that, capable in most instances of relief from the use of the Bath waters. This disease is divided into that wherein the inflammatory disposition prevails, (and which is generally attended with symptoms of fever, and very acute pain) and that wherein the pain is less violent, but more lasting, and where no signs of fever or external inflammation appear.

It was formerly thought that the Bath waters were of no service, and even detrimental, in the kind of rheumatism first mentioned; and it must be owned, that the waters are certainly improper to be drank during the feverish stage, and that the native heat of the springs (even the coolest of them) is too great for external use in such a state of the disease. But since the opinions first alluded were formed, many alterations in the structure of the baths have taken place, by which the heat may now be accommodated both with speed and precision to any degree that may be required; and it is found, in consequence thereof, that the Bath waters may be used in every case, where the Buxton waters are proper, with at least equal advantage, and in many circumstances (such as privacy and change of water of the bath for each person that bathes) with many such superior conveniencies.

It is indeed, I believe, advisable that the feverish disposition should be abated by bleeding and other evacuations, previous to the trial of any bath whatsoever; but after these have been used, and the heat of the body, thirst, and head ache, (if any such be present) are abated, the temperate bath is often productive of the happiest consequences; and I know by experience that it has been tried with safety and advantage, even when the previous evacuations had not been effected to lower the pulse, or to abate the pain. I must not, however, be understood to mean

that it may be used before the evacuations have been made, provided the fever runs high. I have generally advised from 86 to 90 degrees in such circumstances, but this may be varied at the discretion of the physician.

I have generally observed patients at their first going in complain of cold, when the water did not exceed the heat specified above, and were desirous to have the heat raised. I have, however, cautioned against such change, and generally found that the temperature grew more agreeable after a few minutes' stay, and that the patients came out cooler, and easier in their limbs and pained parts, than when they went in; whereas, when the heat has been raised to 94 or 96 degrees whilst the patients remained in the bath, I have mostly observed them to come out flushed, with little abatement of the pain, and often with an increase of fever.

As the bath here is used as a soothing application, and to relieve pain, and as no evacuation that would be likely to diminish the strength is intended to be promoted by it, it may (if the painful symptoms are urgent) be used daily, with a stay of from about ten minutes to half an hour each time. The pleasure and ease which the patients generally experience, render them sufficiently punctual in the application of the remedy. Care must however be taken, that the time of stay be prolonged gradually, and in no case exceed thirty minutes. The time of day may be suited

to convenience, and other circumstances regarding the disorder. It certainly would be proper to employ it at such an hour as the symptoms were least violent, if such a one be discovered.

The time the remedy should be continued, must depend entirely on the duration of the disease.—There seems to be no reason for persisting in it after the symptoms have ceased. Whilst any fever remains, the drinking the water had better be forborn.

In the Chronic Rheumatism.

The chronic rheumatism is more adapted to the use of the Bath waters than the acute kind. The former of these is that which most frequently occurs, and is generally known by the name of the Common Rheumatism. It mostly attacks people in advanced age, or past the prime of life, is seldom attended with fever, and the pain is more wandering and less acute, though more lasting, than in the inflammatory kind. It is also less apt to be attended with swellings or soreness of the parts affected.

The Bath waters, both internally and externally taken, are perfectly well suited to this complaint. The drinking of the waters, by keeping the secretions regular, and supporting the strength, digestion, and appetite, is of service; and the warm bath is still more peculiarly suited to the nature of this disorder, and is indeed by much the most efficacious remedy.

It may be used for this purpose with considerable freedom, as four or five times a week, and with a stay of twenty or thirty minutes each time, if the health be in other respects good, and the strength of the constitution unimpaired. A greater latitude may also be allowed in respect to the heat of the water. That of the Cross-Bath or Queen's-Bath, (which are about 94 degrees of heat) is well suited to such cases. No artificial heat, (as of fires in the chamber, warming of beds, or weight of clothes, beyond what is necessary to preserve a moderate temperature) is of any service. It is generally observed, that such rheumatic cases as have the pain alleviated by the moderate warmth of a bed, are more likely to receive benefit by the Bath waters, and will admit of a greater degree of heat of the bath, than such as have the pain aggravated thereby. This rule, however, is less general than it was when baths of a moderate temperature were not so frequently employed as they are at present.

Pumping on the limbs, stiffened with repeated attacks of this disorder, and where the joints are swelled, is of great service. This, however, must not be used, whilst any considerable signs of inflammation, or great acuteness of pain, remain. In such cases it is prudent to try a quiet immersion of the pained part in the Bath water for a few times before the use of the pump be commenced. The pump may

be used from thirty to two hundred strokes every day, and continued (if it succeed in easing the pain) for any time that may be required.

In the space of five years (to wit, from the beginning of the year 1775, to the end of the year 1779) three hundred and sixty-two patients were admitted for this disorder into the Bath Hospital, of whom one hundred and twenty-seven were cured,* one hundred and forty-four were much better, forty-two were better, forty-one were no better, and eight died, four of whom died of the small-pox.

The proportion of the number benefited, to the whole number received into the hospital for this complaint, is as 313 to 362, or nearly as 1. to 1.156. The proportion of those benefited to those that received no benefit, is as 6.3877 to 1.

Use of the Bath Waters in Hip Cases.

Ischiadic complaints, usually called hip cases, are in general much benefited by the use of the Bath waters. This disease has been much overlooked, having been confounded with rheumatism, gout, and psoadic abcess, from all which it differs materially. In the state, wherein persons so afflicted come to Bath for relief, the pain is generally described, as being rather behind the great trichanter of the thigh-bone,

* Those who were judged, from the presence of other disorders, improper for a trial of the Bath waters, are not here included.

and nearly on the same level, and as being deep seated, but liable to be increased by moderate external pressure. No soreness of the skin is observed. The muscles that form the nates on the side affected, generally appear wasted and flabby, and the line that bounds the protuberance of the buttock downwards is nearly obliterated, and the part which is naturally depressed filled up with a flabby protuberance, as if the muscles of the thigh immediately below were covered by the superior muscles being let down or spread over them. Notwithstanding this appearance, the size of the thigh is in reality diminished, and sometimes to the extent of three or four inches in the circumference of the limb. Sometimes the breadth of the nates on the diseased side is increased, when its prominence and firmness are diminished. The head and neck of the thigh-bone are more prominent on the affected side, and the joint suffers a partial dislocation. The tubercle, or lower part of the ischium, may be discovered by feeling it behind to be generally lower on the affected side than on the other. The leg of the side affected is commonly longer, but in some instances shorter than the other. In some instances, the leg is first shortened, and afterwards lengthened, beyond the natural dimensions. In general the persons affected find it difficult to separate the legs sideways without pain, or to support much of the weight of the body on the side affected. The pain mostly shoots downwards on the outside of

the thigh to the knee and ancle. Sometimes the seat of the pain is more in the groin, and then the pain seems to descend on the inside of the thigh to the knee and internal ancle; but this is less common. The pulse, at the beginning of the disease, is mostly little different from a healthy state, the skin cool, the body regular, and the health scarcely affected. But in the advance of the complaint, the part becomes tender to the touch, and the pain acute, constant, and throbbing, the swelling increases, and the skin of the pained part becomes pink-coloured, or erysipelatous. In such circumstances, the pulse is accellerated, the face is alternately flushed and pale, colliquative sweats come down, and the patient dies, at last, consumed with hectic fever. An abcess, in such cases, in usually formed on the outside of the thigh, near the seat of the pain, which either bursts of itself, or is opened, and the patient mostly dies, as it is called, tabid, as persons do in pulmonary consumption. Some, however, though but few, escape, aud those mostly where the abcess has burst of itself, without being opened with the knife. In cases where the patients escape with life, an anchylosis, or rigidity of the joint, usually takes place. This disease may originate from various causes, an external violence from a blow or a fall, but the most common is the permanent application of cold. Hence damp beds, working in water, and above all lying down on

the damp ground, when the body is heated, are liable to produce it, and are indeed the causes usually assigned.

If the Bath waters be applied to before any abcess be formed, and before the coming on of the hectic symptoms, they are usually successful. But it must be observed that the external application of the waters is alone employed, their heating qualities, when internally taken, rendering them unfit for the general intentions of cure in this disease. Caution is, however, necessary, even in their external use. Unless the symptoms be moderate, it is usual to begin the trial with the use of the Cross-Bath. If this excites no additional heat, nor quickens the pulse, but abates the pain, the use of the pump in the Bath is recommended. The bath is generally advised to be used thrice a week, and the pump from 50 to 200 strokes at a time. If this method succeeds, as it frequently does, no other medicines are tried, but by the use of this simple but effectual remedy, the patient is restored to health and activity.

The marks of success are the abatement of the stiffness and pain, the affording greater latitude and extent of motion to the joint, and the increase of power of supporting the body on the limb of the side affected. To those may be added the approach of the leg, whether lengthened or shortened, towards its natural dimensions, and the increase of the size of

the muscles, that have been wasted or let down, to their natural situation, and to their natural firmness and plumpness.

But such an easy course is not always practicable. If signs of fever are present, and the pain considerable, it is necessary to premise both general and local evacuations before the use of the waters (even externally) be commenced. Bleeding, purging, and the use of antimonial and sudorific medicines, as Dover's Powder, are all successfully employed for this purpose, together with cupping on the part, and leeches; and in long protracted cases, the repeated application of blisters to the part affected. In cases of the latter kind, I have seen the lime poultice* singularly successful. But if the trial of this remedy be protracted until matter be actually formed, hectic fever comes on, and symptoms of general decay but too evidently appear, we may lament that the opportunity of benefit is lost, but have no means of repairing the omission of an earlier application. The Bath waters, in such an advanced stage serve only to aggravate misery and hasten dissolution.

* The lime poultice is made of *one part* quick lime that has been exposed to the air for some weeks, and fallen to powder, and *two parts* of oatmeal made into a poultice with hog's lard. This is spread half an inch or more thick upon a cloth, applied warm to the part, and renewed every twenty-four hours, and is often continued for a month or longer.

TABLE OF

THE EVENTS OF HIP CASES,

RECEIVED INTO

THE BATH HOSPITAL,

FROM MAY 1st, 1785, TO APRIL 7th, 1801.

Ages.	*Cured.*	*Much better.*	*Better.*	*No better.*	*Improper.*	*Irregular.*	*Dead.*	*Total.*
Under 10		5	8	1	9			23
10 *to* 20	30	24	32	9	34		2	131
20 *to* 30	20	48	28	13	34	2	1	146
30 *to* 40	22	29	18	2	24	3		98
40 *to* 50	21	30	15	7	16	3		92
50 *to* 60	8	25	6	1	5	2	2, 1 *of S.-Pox.*	49
60 *and upw.*	2	7	4			3	1 *of S.-Pox.*	17
Total	103	168	111	33	122	13	6	556 *in all.*

In White Swellings of the Knee.

White swellings of the joints, the knee particularly, are somewhat similar in their nature to hip cases, and like them, are sometimes relieved by the external use of the Bath waters. The same cautions and the same applications (particularly the lime poultice) are necessary as in hip cases; and especial care should be had to make a trial of such remedies as are approved of, whilst the disease is in its early stage. Could we see them at the Bath Hospital at that period, it is probable the proportion of cases considerably benefited, would be greater than they appear in the list given beneath; which includes the same space of time as was mentioned when I spoke of hip cases.—Cured, one; much better, four; better five; no better, two. In all, twelve.—The proportion of those who were benefited to those who were not, is as five to one.

Use of the Bath Waters in Weakness of the Organs of Digestion.

Complaints arising from the weakness of the organs of digestion are often much relieved by the Bath waters. These disorders are connected with various causes, and it is in a good measure from a consideration of these, that our judgment concerning the probability of the success of the waters must be formed.

Excess in strong liquors is a common cause of weakness of the functions of the stomach. Want of appetite is generally in such cases the leading symptom. With this are frequently joined costiveness, nausea, (especially in the morning) which is sometimes attended with vomiting, a sensation of inflation, together with coldness and insensibility of the stomach, heart-burn, flatulent eructations and sometimes considerable pain in that organ. These symptoms are more severe when spirituous liquors have been indulged in, than when simple fermented liquors have been used.

In such cases, the use of the waters internally is often of great service provided the symptoms be not too far advanced, and the patient will consent to a reform in his regimen of life.

Caution is, however, necessary in the administration of the remedy. It sometimes happens, that the immoderate use of spirituous or fermented liquors, instead of producing an insensibility of the stomach to stimulant substances (which is their general effect) will bring on a great degree of morbid irritability, though without any tendency to fever. This generally takes place in young people who have imprudently given way to such irregularities. In such cases the internal use of the waters may more properly be forborn for a time, and the external use of them at a temperate degree of heat (92 degrees for

instance) made trial of, in a cautious manner. This often relieves the nervous irritability very much, and prepares the patient for the internal use of the waters, which must be very gradually administered, in conjunction with the bath. The latter of these I have often found of more importance than it is usually apprehended to be in such cases, and am satisfied it is at least as generally useful and more safe than the waters internally taken.

If the stomach be in a cold and insensible state, loaded with mucus, and slow in digesting food, an emetic will be necessary to rouse it into action, and to discharge its accumulated contents. An ounce and half, or two ounces, of the wine of ipecacuanha, and two grains of the antimonium tartarisatum, is a powerful, but not too strong a dose on such an occasion for an adult person, not greatly weakened by the disorder; and is the best preparation for the waters, which should be entered upon as soon as possible afterwards, whilst the effects of the emetic may be supposed to continue.

Such a remedy, however, though safe and beneficial in cautious hands must not be indiscriminately ventured on, or often repeated. When the irritability of the system is preternaturally increased, emetics are often fatiguing and distressful in their operation, and serve sometimes to aggravate those symptoms we would wish to abate; and even in habits where their use is less exceptionable, we must be

careful lest by their too frequent exhibition we produce a habit of taking them—a custom which it is difficult to lay aside, and highly injurious to health to persevere in.

The state of the bowels is likewise necessary to be attended to. Costiveness is generally a symptom complained of, sometimes with, and at others without cause. A few grains (three or four for instance) of the pilulæ ex aloë may be taken at night, and occasionally repeated when there is any real costiveness. But the patient should consider that purging is by no means to be considered as an operation that leads to the cure of the disorder, and that every degree of it beyond promoting such a degree of evacuation as is natural, tends to weaken, and of course to injure the patient.—This caution I thought necessary to insert, as it is a common mistake with persons labouring under these complaints, to fancy that a lax state of the bowels is favourable to their health, and of course to be frequently taking medicines of such a tendency; —a habit productive of numerous bad consequences, and particularly counteracting the effects of the Bath waters.

A contrary habit sometimes takes place, especially in cases of increased irritability. This must by all means be restrained within moderate bounds; and I have generally found a strong infusion of cinnamon with a small quantity of the tinctura opii camphorata, frequently administered, serviceable to

thisend. The warm bath, tried cautiously, often produces in such cases the best effects.

It is not uncommon to see cases wherein an obstinate costiveness, or rather constipation of the bowels, will continue several days, and be succeeded by a violent diarrhœa; and these opposite habits to succeed one another alternately for a considerable length of time.

In such cases it is necessary to be very attentive, to prevent the costiveness, which lays the foundation of the violent discharge; and with this precaution, I have seen the Bath waters used both internally and externally with the greatest advantage.

In the Hysteric Colic.

The Bath waters have been found highly useful in that species of colic called by Sydenham the Hysteric Colic, which is subject to return at intervals nearly periodical, and is accompanied with other symptoms of the hysterical kind.

In the Colic of Poictiers.

The Bath waters are also said to have been of the greatest service during the painful paroxysm of the Colic of Poictiers.* I do not in the least doubt the truth of these accounts, which are given from the best authority, and are moreover perfectly

* See Dr. Warren's Paper on the Colica Pictonum. Medical Transactions, vol. II. p. 81—89.

consonant with the known effects of the Bath waters; but have not had much opportunity of observing them myself, the disease not being very common among the inhabitants of this place, and the subjects brought to the hospital from a distance having gone through the painful stage before they come thither.

In Jaundice from Biliary Calculi.

The jaundice, when arising from simple obstruction of the biliary ducts, from calculous concretions, has been long observed to be relieved by these waters. We cannot indeed conceive how the Bath waters, (or indeed any other remedy) can dissolve the biliary calculi when formed; but that the Bath waters, by obviating some of the symptoms that bile thrown into the circulation is apt to produce, may be of great service, experience fully shews.

The stimulant qualities of the waters seem here to be highly useful, in counteracting that languor and inertia which almost constantly attend jaundice, and of course exciting the natural efforts to expel the cause of the disease. It is accordingly observed, that biliary calculi are often voided during a course of the Bath waters. Their diuretic qualities are moreover serviceable in carrying off the bile from the circulation.

The stimulant qualities of the Bath waters seem to have been the foundation of their good effects in

the disorders hitherto treated of. I do not, however, mean to represent the foregoing division as an accurate arrangement; nor is it of much consequence, as I shall not attempt to draw any practical inferences from thence, independent of actual experience, and only use it in this place for the purpose of preserving some degree of order in treating the subject.

Antispasmodic Qualities of the Waters.

On this plan the antispasmodic qualities of the Bath waters are next to be considered.—When the Bath waters are recommended with this intention, it is necessary to have regard to the stimulating qualities they possess; which always partake in some measure of an inflammatory nature. Hence they are most serviceable in such cases wherein the sensibility of the system may be excited with advantage, as in hypochondriacal constitutions, where the circulation is languid, and a tendency to inertia prevails.

Use of the Bath Waters in Hypochondriasis.

In such cases the Bath waters both externally and internally used, have been often of great service, especially when such disorder has been combined with weakness of the functions of the stomach and alimentary canal. Exercise, however, principally on horseback, is absolutely necessary to be joined with their use, not only on account of the direct effects of motion and fresh air on the health and spirits,

which every one knows to be considerable, but equally on account of its relaxing the mind, by abstracting the attention from being fixed on the disorder, a circumstance that constitutes the principal and distinguishing mark of this complaint.

I believe that of late years the internal use of the waters has been most commonly advised in such cases. But it appears from the accounts of former periods, that the waters were remarkable for their good effects in this disease at a time when they were scarcely drank by any, and must of course have produced their effects solely by their external application. Induced by this consideration, joined with the testimonies of Aretæus* and Hoffman,† both of whom advise sulphureous baths on such occasions, I have often recommended bathing, always with safety, and often with manifest advantage. I think I have observed, that a temperate bath‡ (as of about 92, or even 90 degrees) is preferable to one of a hotter kind.

In Hysterical Complaints.

Hysterical complaints are sometimes relieved by the Bath waters, but I do not think them in general

* Aret. curat. Melancholiæ.

† Hoffm. de Baln. Aqu. Dulc. Usu.

‡ This is agreeable to the advice of Hoffman: "Temperatiori reddito calore, major utilitas in hoc affectu expectanda est."—*Hoffm. loco supra citato.*

so well suited to such a remedy as the former are. The general subjects of this disease are persons at a rather early time of life, who have an increased sensibility, and often a considerable degree of plethora in the blood vessels. Cases so circumstanced are not adapted to the use of the waters, but when the disorder has come on after any weakening evacuation, and is accompanied with impaired digestion and appetite, and obstruction of the menstrual discharge from the same cause, the waters are generally very serviceable. The same cautions respecting the temperature of the bath are necessary as in the former instance.†

St. Vitus' Dance.

That singular disorder called St. Vitus' Dance, has been found to receive relief from the Bath waters. Out of eight cases, according to Dr. Charlton's account, which occurred from May 1751, to May 1764,† three were discharged cured, three left

* A case is related by Dr. Huxham, of a person of a spare habit of body, with much vivacity of temper and spirits, who by too much exercise, and the frequent use of the cold bath, had exhausted his strength, and began to waste in his flesh, and to become low-spirited and weak in his mind as well as his body. The Doctor mentions, that by the use of a nourishing mild diet, and the use of the Bath waters, this patient soon recovered health, spirits, and flesh.—*Huxham on Fevers, p.* 30.

† Charlton's Inquiry, p. 53.

the house much better, and two received no benefit. A later account is, however, more favourable. It appears from the register of the hospital, that out of nine patients admitted for this complaint, from the beginning of the year 1775, to the end of the year 1784, eight were cured, and one better.

In those cases that I have seen, bathing, and pumping the spine of the back moderately twice or three times a week, seemed to be the principal circumstances that led towards a cure.

Painful Menstruation.

A spasmodic affection of the uterus, often attended with great pain sometimes comes on in females periodically at the time of menstruation. The discharge in such cases is generally too small, and this circumstance often produces nearly the same effects as obstruction of that evacuation is observed to do. The warm bath, properly managed, has been repeatedly observed to produce the happiest effects in such cases. It is useful to remark in this place, that sterility in young married women seems to be owing frequently to this cause; and I have more than once seen the removal of the spasmodic affection followed soon by an increase of family.

Diaphoretic Qualities of the Bath Waters.

The diaphoretic powers of the Bath waters are next a subject of consideration. Under this head I

mean to speak of their efficacy in cutaneous diseases, the leprosy particularly, not that I am assured that their efficacy in the cure or abatement of this disorder is owing to their increasing the perspiration, but only as it seems to be the most obvious and natural means by which we can suppose them to operate, and because the general opinion of mankind favours this supposition.

Use of the Bath Waters in the Lepra.

The leprosy being a disorder not very commonly known, I shall here give some account of it from actual experience, many cases of this being constantly in the Bath hospital.

The appearance this disease puts on is that of blotches on the skin, which are of different sizes, from that of a shilling to one considerably exceeding that of the hand. These appear sometimes on every part of the body, but are most commonly found on the legs, arms and face. These blotches are covered with a rough scaly eruption, which is at first red, and in its progress becomes white, in parts at least; though in some instances, it becomes white and scaly sooner, and to a greater degree, than in others.

This eruption is in some nearly level with the skin, in others it is more prominent, even to nearly half an inch above the surface; which last circumstance is more common after the eruptions have assumed a white scaly appearance, than whilst they continue of a red colour.

The eruption is in general dry, but it is not uncommon for it to be moist and oozing a thin serous fluid. The parts affected are sometimes rather swelled, but not to any considerable degree; nor is such swelling at all œdematous. It is more common for the parts affected to be swelled when the eruption is moist and scaly than when otherwise.

The scaly kind is sometimes very uneasy, and even rather painful, but this seems to arise principally, if not altogether, from the hardness and stiffness of the skin, which renders motion troublesome. The same cause renders the skin insensible to slight impressions of the touch, but no real insensibility of the part affected, or those adjacent to it, has been noticed. The breath has been remarked to be rather short in some persons advanced in years, and who were troubled with the moist kind; but I am not certain that this was produced by the disease.

The appetite, sleep, and strength of such patients appear to be scarcely affected, and there is seldom any thirst or fever, indeed I believe I may say none that could be imputed to this disease in any cases that have fallen under my notice. The body is in general costive, but not to any great degree, and what yields easily to common remedies.

I have never had an opportunity of seeing this disease at its first appearance, but have been informed by the patients that it constantly begins with a sense of weight and oppression at the stomach; which, after continuing some days, is followed by

sickness and vomiting, and these relieve the former uneasy sensations. This, however, is soon followed by an eruption, which appears in different parts of the body, and often on the head, in form of pimples, with white heads, which are attended with great itching. These sometimes spread, and discharge a thin corrosive humour; at others they rise and incrust the parts over with a rough scaly coat, not unlike the bark of a decayed tree.

The method in general pursued with such patients is, to order them to bathe twice or thrice a week, and to stay about a quarter of an hour in the bath each time. This, however, must be regulated according to their age, strength, and other circumstances. Formerly the Hot Bath was, I believe, advised for such patients; but I should prefer a more temperate warmth in a complaint that required so long a continuance of the remedy. The use of the bath, after a few times trial, generally produces an abatement of the itching, and a desquamation in some degree of the leprous crusts, and of course renders the skin more soft and pliable. This course is usually accompanied with the use of the waters internally in moderate quantities, as about a pint daily, which are thought to second the good effects of the bath, by promoting a free and gentle perspiration.

If by this method the scaly and rough parts fall off gradually, and are not succeeded by any fresh eruptions, if the itching abates, and the skin returns

by degrees to its natural state, no other medicines are given, save a gentle purgative occasionally, should the body be costive. If, however, the disease shews no signs of abatement after a trial of the waters for a few weeks, or that the leprous eruptions when removed in one part, break out in another, and a succession of them is thus kept up, it is common to have recourse to mercurial remedies, the more acrid preparations especially, such as the solution of corrosive sublimate in small quantities, which is thought to hasten the separation of the leprous crusts, aad to procure an abatement of the other symptoms.

The external use of the Bath waters coincides very happily with the use of mercurials, as it assists their diaphoretic qualities, and obviates their tendency to produce a salivation. I think I have seen the common tar ointment of service in softening the stiffness of the skin, and promoting the separation of the scaly eruptions.

The obstinacy of the disease is by no means proportioned to the quantity of the eruption. I have often seen patients with the face and many parts of the body nearly covered with a white prominent scaly crust, that have been perfectly cleansed in a few weeks; whilst others, that had a few blotches only, that scarcely projected from the skin, found no alteration of much consequence in the course of several months. It happens not unfrequently that the

disease, though to appearance nearly removed, will continue in a very slight degree (as in one or more small spots) without farther amendment, resisting every remedy for a long time, and at last oblige us to dismiss our patients without even a perfect temporary removal of the disease.

It is found by experience, that the Bath waters, though often effectual in clearing the skin for a time, cannot insure the patient against a return; and on this account it is common in registering such patients, not to set them down as cured, but as cleansed only, which is meant to imply that the relief may possibly be temporary. Many instances, however, have occurred where the disorder has never made its appearance again, though the patient lived many years after.

I have been able to trace the cause of this disease in so many instances, that I am much inclined to think it is universal. I mean here, the sudden application of cold to the body, when in a heated state. This generally happens from drinking some cold liquor, but this is not necessary, as I have seen instances wherein the external application of cold has produced the same effect. It matters not by what means the body is heated, whether by heat of rooms, or weather, or by exercise, since cold produces the same effect in each of the above cases. Hence such persons are especially liable to it, whose way of life subjects them to such vicissitudes, as

Smiths, and other Artificers, who are obliged to work near fires, or in heated rooms; or such persons as use violent exercise or labour, as Huntsmen, Porters, and the like, who are apt to indulge their appetites without much caution. Women also, exposed to similar accidents, are also liable to the same disease; such as Cooks, Laundresses, &c. several of whom I have seen so affected in the Bath hospital. It is worth observing, that the danger is much less in those who take cold when heated with labour or exercise, provided they continue to pursue their labour after drinking, than it would have been had they left off their work immediately. Those cases that I have seen were of persons who exposed themselves to the effects of cold whilst they were at rest.

The same observation holds equally of cold externally applied. The quality of the cold liquor drank, is, I believe, of less consequence than the temperature. I have known the disease to follow the drinking of water, milk, and beer; and I doubt not, many other cold liquors would do the same. Whether stronger fermented liquors, or such as are warmed by aromatics, would be equally hazardous, I cannot determine.

I have been told from good authority, though I never knew such a case to happen at the Bath hospital, that the application of cold to the body when heated has caused the leprous eruption to disappear suddenly, and has produced great disturbance in the

system. Dover's Powders, with the saline draught, are said to have been given in such cases with advantage.

One of the most deplorable cases that ever fell under my observation, arose, as I was told, from this cause: A girl about eighteen years of age, having a leprous eruption on her skin, drank, when violently heated, a large draught of cold water. Presently afterwards the leprous eruption disappeared suddenly, and the patient was seized with a perpetual disposition to vomiting or retching, insomuch that she could keep nothing on her stomach; for which complaint she was sent to the Bath hospital. A variety of medicines and applications were tried there without their affording the smallest relief. Besides the Bath waters, both internally and externally used, opiates, bitters with aromatics, elixir proprietatis, the effervescing saline draught, ipecacuanha in small doses, and almost every form of a sedative or aromatic medicine, besides several external applications both of the opiate and stimulant kind, were ineffectually tried.

After a stay of several months, she was discharged no better, and readmitted some months afterwards, her disease having then put on a different appearance. Her vomiting had ceased, but her limbs were almost in a state of constant convulsion, though without depriving her of sense. The waters were again tried, with a numerous assortment of new remedies,

but with no better success than before ; and after a long stay, I was obliged to dismiss her without any benefit from what had been tried for her. She was lately (about two years since her being a patient at the Bath hospital) alive, but in a very deplorable state.

It appears from the hospital register, that from Jan. 1, 1776, to Jan 1, 1783, 196 patients were admitted for this disease, of whom 119 patients were cleansed, 51 much better, 12 better, 8 no better, 2 dead of the small-pox, 1 discharged for misbehaviour, and 3 improper for a trial of the Bath waters. The proportion of those benefited, to those that received no benefit, is (excluding the two that died of the small-pox, the one discharged for misbehaviour, and the three that were improper for a trial of the waters) as 22.75 to 1.

THE above are the principal disorders in which the Bath waters have been found to be successful. Analogy will, no doubt, extend their use to others of a similar nature, though not exactly corresponding with the above descriptions, which must be considered rather as general outlines, than as approaching to exact delineations. It seldom happens that two cases tally, in point of the symptoms at large, though they may agree in the leading circumstances, and afford information sufficient to direct the practice of the physician.

I would, however, recommend to those who advise patients to the use of the Bath waters, to keep in their minds the consideration of the stimulant quality which they possess, and which is undoubtedly of an inflammatory tendency. In many instances, this quality is highly useful, but in others extremely dangerous; and it is often difficult to adjust properly these distinctions. This I have endeavoured to do in some measure in this work, but I do not flatter myself so far as to offer it to the world in any other light than that of an imperfect attempt towards the explanation of an important subject.

Circumstances in which the Bath Waters are contraindicated.

I shall conclude with a few remarks by way of caution on the circumstances in which the Bath waters are peculiarly contraindicated. It has been noticed frequently in the course of this work, that the Bath waters were improper in all cases attended with symptoms of fever. This observation is, however, more particularly applicable to some species of fever than others.

The Bath waters seem especially to aggravate complaints of the lungs, and are of course extremely dangerous to be drank whilst any tendency to inflammation of those organs subsists.—This is particularly applicable to consumptive patients, to whom the use of the waters is well known to be highly injurious. Much caution is even necessary in directing

the use of the waters to those whose frame of body, complexion, and age, indicate a propensity to such disorders.

Thus a catarrhous cold, if attended with cough and soreness of the breast, is well known to be aggravated by persisting in the use of the waters, which would soon convert a casual (and in properly treated a temporary) indisposition only, into a dangerous disease.

Hectic fevers of every other kind, are equally improper for a trial of the Bath waters, with those that arise from affections of the lungs. Some of these, which arise from internal schirrus, I have before noticed, and the caution might be extended to all.

I must, however, acknowledge, that a case fell under my observation at the Bath hospital, wherein a quick pulse, white tongue, thirst, loss of appetite, irregular flushings of the cheeks, great emaciation, and almost utter prostration of strength, seemed strongly to point out a hectic disposition, and of course induced me to think that the Bath waters were unlikely to be of service. On inquiry, however, I found that the patient (a young man) had been exposed to great hardship, both from want of sufficient and wholesome food, and of clothing. This circumstance induced me to suffer the patient to continue in the hospital, from an idea that the symptoms above described might be produced by his hardships, and possibly relieved by an opposite regimen ;

I therefore directed him a nourishing diet, with the moderate use of the Bath waters internally, and the bath occasionally, and was pleased to find that the unpromising symptoms gradually abated, and in about three months ceased altogether, and he was discharged free of complaint.

I am far from ascribing the cure in this case altogether to the Bath waters; as I doubt not that wholesome food and warm clothing, together with other comfortable accommodations, were the principal means of the patient's recovery. The good effects of the Bath waters were, however, very discernible, by the warmth they imparted to the system at large, and by their effects on the spirits and appetite. Indeed, I much doubt if the cure could have been accomplished without their assistance, considering the weak state of the organs of digestion.

Cases of persons so reduced by want of the immediate necessaries of life, do not often occur in private practice, but I think I have observed somewhat analagous in some complaints of the stomach; wherein, from the weakness of the organ, the body was deprived of nourishment. I think I have remarked this in some persons who had injured their stomachs by excess in strong liquors, and have often seen similar symptoms to those above described abated, and relieved, as the stomach recovered by the use of the waters its power of retaining and digesting the food.

For similar reasons to the foregoing, the use of the Bath waters, even internally, is improper in all cases accompanied with any open sore or ulcer, especially in large suppurations, which are generally attended with some degree of hectic fever, seldom dangerous in itself, if the matter have a free discharge; but liable to become so by the use of such stimulating regimen as the Bath waters. Hœmorrhages are, for the same reasons, improper for a trial of the bath, such only excepted as we wish to promote, as the menstrual flux, and perhaps, in some instances, the hœmorrhoidal.

It is proper to caution those who have the cure of persons that have any tendency to mania, to be cautious how they suffer them to use the Bath waters, as they so quickly and powerfully affect the head. This caution, however, need not be extended to persons whose depravation of understanding is of the low or melancholic kind; as I have reason to think I have observed a case of this kind in which considerable benefit was received from their use.

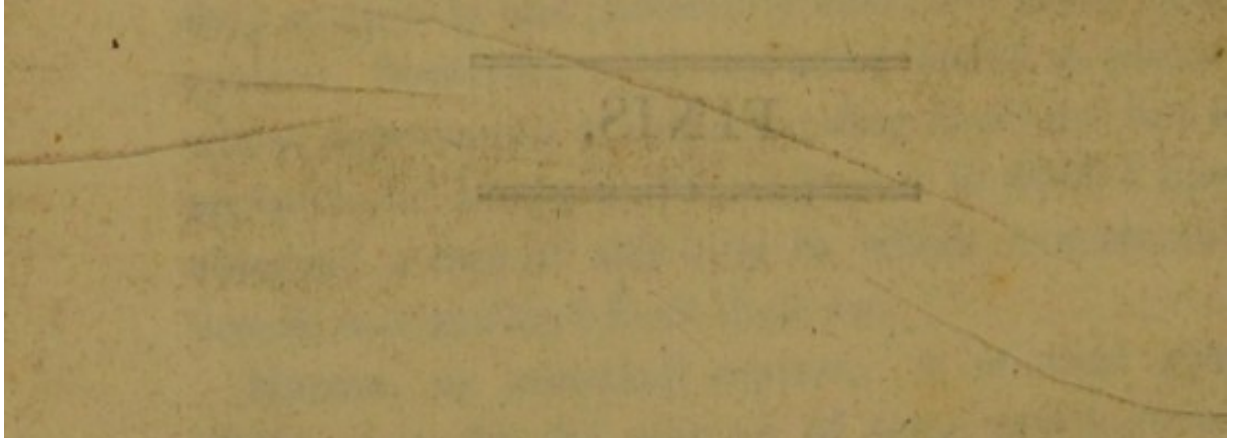
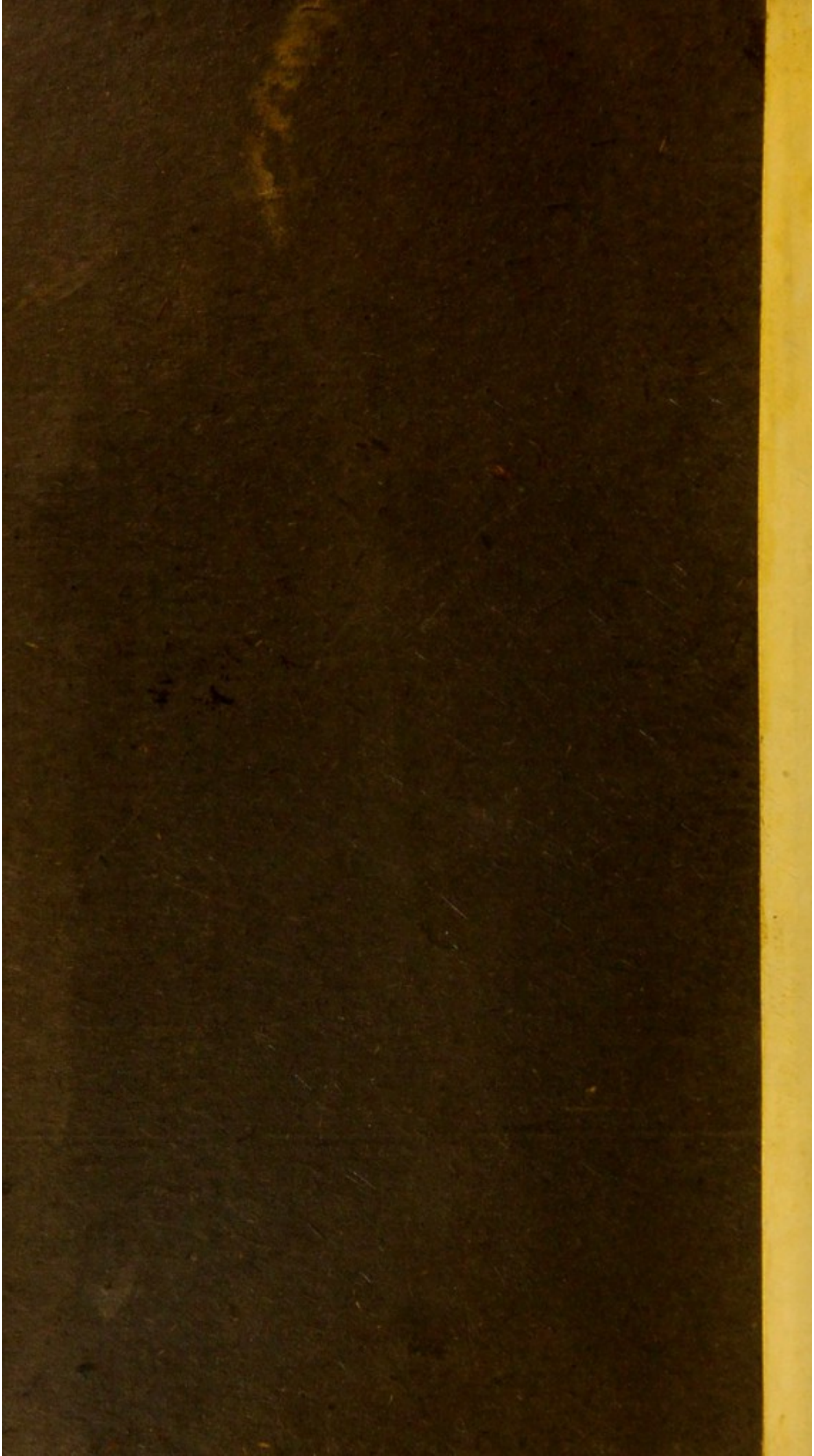
Hernia, or intestinal rupture, is another complaint, that, in the opinion of some very judicious persons, forbids the use of these waters externally as a bath. This, however, is not agreeable to my own observation; since I have known several persons so circumstanced use the bath without any increase of the disorder, and some of them with manifest and considerable diminution of the bulk of the swelling.

I have thus brought the proposed Work to a conclusion, and shall not anticipate the judgment of the public concerning it. I have set down nothing which I do not believe to be true, or probable, but do not mean to vouch for any more than the particular facts as related. Time, the test of opinions, must determine what regard is due to those I have formed concerning the use of this powerful but (in many instances) nice remedy.

FINIS.

William Meyler, Printer, Grove, Bath.

I have thus brought the proposed Work to a conclusion, and shall not anticipate the judgment of the public concerning it. I have set down nothing which I do not believe to be true, or probable, but do not mean to vouch for any more than the particular facts as related. Time, the test of opinions, must determine what regard is due to those I have formed concerning the use of this powerful but (in many instances) nice remedy.



William Meyler, Printer, Crane, Bath.