

Remarks on the constitution of the medical department of the British Army : with a detail of hospital management, and an appendix, attempting to explain the action of causes in producing fever and the operation of remedies in effecting cure / by Robert Jackson M.D.

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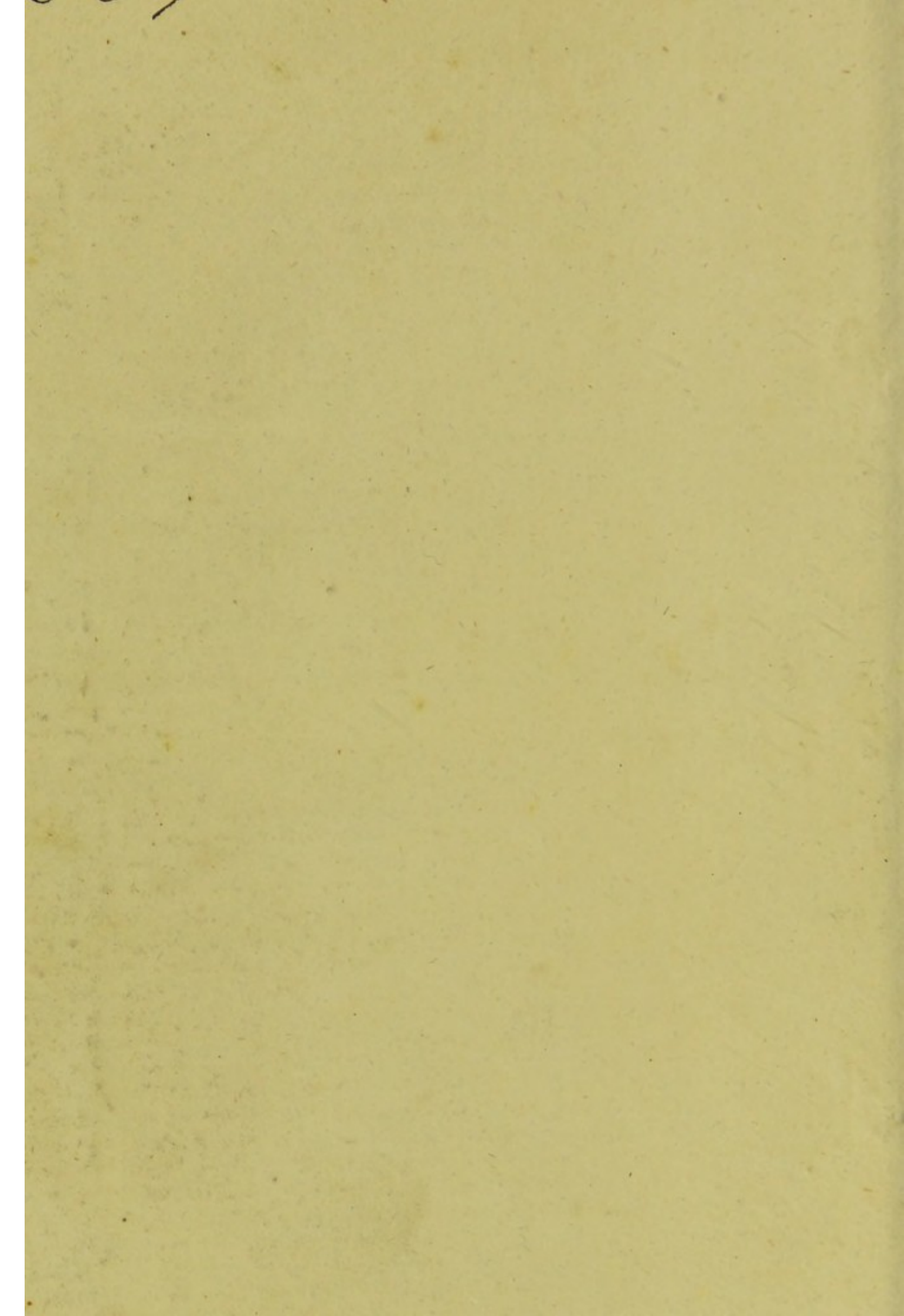
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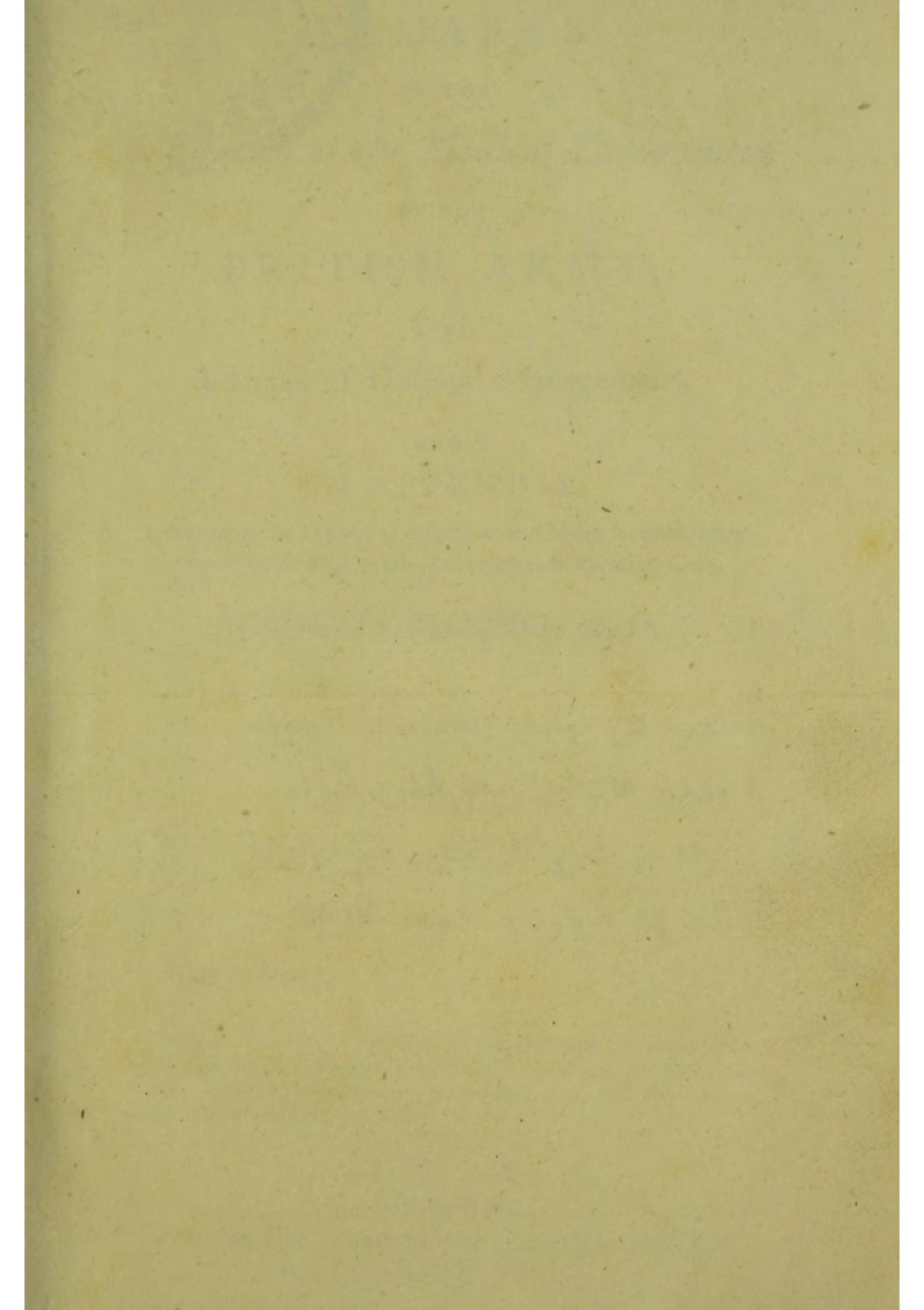
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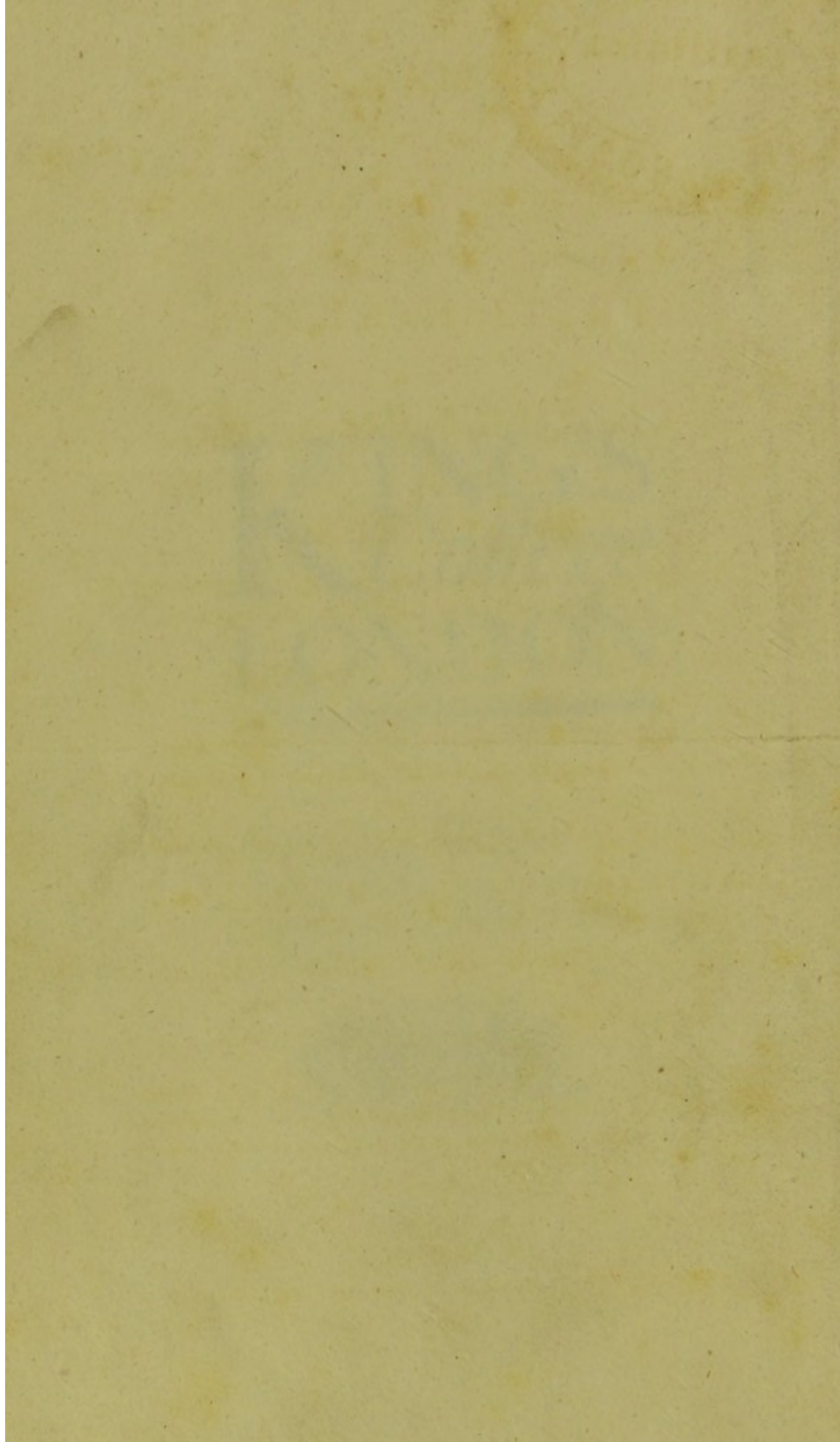
JACKSON ROBERT
REMARKS ON THE ...
MEDICAL DEPARTMENT
1801

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REMARKS
ON THE
Constitution of the Medical Department

OF THE
BRITISH ARMY;

WITH
A Detail of Hospital Management,

AND
AN APPENDIX,

Attempting to explain the Action of Causes in producing
Fever, and the Operation of Remedies in effecting Cure.

By ROBERT JACKSON, M. D.

بعقلش ببايد نخست ازمود
بقدر هنر پا يکاهش فزود
برد بر دل از جور غم بارها
که نا آزموده کند کارها

SADI.—BOSTAN.

TRANSLATED.—It is necessary, in the first place, to improve the
mind;—to fill its stores with the principles of science. A load of af-
flictions, resulting from wrongs, is the portion of him who holds a
public station—without experience.

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P R E F A C E.

THE motive, which prompts an attempt to impart information on the management of the health of the British army, requires no apology; the manner of executing the design may probably invite censure. The present age is fastidious on the subject of style; and the style of this performance, is perhaps harsh and awkward. But if the intention be good, and the purpose useful to the public, such errors will be little regarded by the candid and liberal. If the meaning be intelligibly expressed, it is well; if the detail be clear and precise, so as not to be liable to mis-interpretation, the highest aim of the author, on the score of composition, is attained; for fine writing is not his talent; and, if it were, the structure of harmonious periods is not the first object of a work of instruction. The subject is important in its own nature; whether viewed with regard to ultimate effect, or the means of accomplishment.

It will not be denied, that, the art of preserving and of speedily restoring lost health, is at all times an object of importance in armies; in times of war, it is of a value scarcely to be estimated. The preservative part depends much upon regulations of military economy; for according as

A 3

these

these are judiciously framed, and diligently executed, so is the result. There are instances, where the sick list in armies amounts to one third of the total force; others, where it does not exceed one fiftieth, even one hundredth part. The causes of such difference are sometimes visible and obvious. To discover their sources, and to prevent their operations is important;—and it frequently is a work of no great difficulty. The preservation of health, obviously and principally depends upon military discipline, and economical arrangement. In this, medical men rarely have a voice; but the matter is of such consequence, and so intimately connected with a knowledge of animal economy, (which professional men only can be supposed to know correctly,) that, it is hoped, the lights of science will be permitted to investigate the foundations upon which the preservation of health rests, and to digest a correct and systematic plan of institution, adapted to all conditions, and capable of being easily practised in all circumstances of service. The possession of health gives power to the arm, and courage to the heart, in confidence of power. The increased activity of the same quantity of physical force multiplies effect; but power and activity are incompatible with feeble health. A knowledge of the causes therefore which preserve, restore and improve this condition, is of primary importance. It demands the first attention in the present times; for the British nation cannot expect to number soldier
for

for soldier with the French republic; but the British nation possesses advantages in the physical qualities of her subjects, capable of more than merely counter balancing deficiency of numbers. The British soldier decidedly possesses superior power in the point of action. Discipline, judiciously instituted, to operate improvement in the activity of movement, is capable of creating and confirming a habit of superior activity. With a decided superiority of actual power, and a decided superiority of activity of movement, a skilful general will find the means of multiplying an inferior force in the field of actual war, in such manner, as to out-number by effect, a numerous, but loosely-organized enemy. This is an object of military study. It implies a correct knowledge of the physical and even of the moral qualities of the soldier. But, as the perfection of the physical qualities depend upon perfection of health, the subject of health demands a minute attention, for it is the cardinal hinge of effect in armies.

The preservation of health, is expressly under the controul of military regulation. The restoring of lost health is the peculiar office of the medical staff. Medical science is avowedly the result of observation, arising from experience of diseases. Knowledge only can be acquired by a train of correct observation; and, as army medical officers are supposed to be selected on account of knowledge and talent, it is presumed they are instructed by experience,

giving familiar acquaintance with all parts of their duties, previously to their being intrusted with the direction of the health of armies. Under such management, it may be expected that medical duty will be well performed ; it ought to occasion no wonder, if it be not so, when committed to the management of persons, young in years, and totally void of experience of military service. It happens sometimes by accident, that persons without experience are placed in high offices ; and it is considered as singular good fortune, when calamity is not the consequence of such a measure. This is accidental : it has been reserved to the present times to give example of a plan, systematically, proscribing the only persons in the nation, possessing practical knowledge of military diseases, from performing medical duty in military hospitals. The doctrine is new and singular ; and, if the results of the practice of experienced and unexperienced physicians be found equal, on a comparison ; a question will arise, whether or not the medical art is of any value. If it appears, upon fair examination, to be of no value, the public will do wisely in dispensing with a medical establishment for its armies ; for if it does not furnish the means of saving life, it necessarily implies a waste of money.

This question is of consequence ; and the mode of deciding it, will be best attained by reference to the returns of hospitals, constructed upon a principle, calculated to convey a correct history of the health of armies. Such return
ought,

ought, in the first place, to notice the proportion of sick in a given number of troops; the proportion between the different classes of disease, comprehended in the return; with such a discriminated classification, as may enable the military officer, whether commanding a regiment or an army, to see, at one view, the proportion which each class of disease bears to the whole, and to estimate the mortality of the different classes. By this means, he will be enabled to form some opinion of the ability and diligence of the surgeon of the regiment, or of the higher officers of the medical staff of the army. The military officer, from considering a return, constructed upon an useful principle, will learn every thing which belongs to the health of his regiment, or his army. He will be enabled to form a calculation, of what is to be expected, in a given time, for the duty of the field; for he will learn by experience, what is, or what ought to be the time, necessary for the cure of the different classes of disease. This is no trivial information; but the form of return, at present adopted in British hospitals, furnishes no means of attaining it,—no correct means of furnishing a conclusion. It in fact, presents little else, but a mass of ineffectives,—a general outline of acute and chronic, without that subordinate division, necessary to convey precise knowledge; encumbered, moreover, with columns for itched and punished men, persons improperly admitted upon the returns of general hospitals;—for though
ineffective,

ineffective, they are not strictly sick. Further, as no reference is made to the mortality of diseases of each class, the general view is fallacious. Itch is not mortal; the effects of punishment rarely fatal; sore legs and venereal maladies, only so, on few occasions. If the whole be thus confounded in one mass, the medical officer can draw no professional inference; and the military officer can form no calculation of the value of his surgeon, or of the probable product of his hospital for service. These are however important objects. The return of hospitals, which is a history, in figures, of the health of armies, is capable of furnishing the information required, if constructed with a view to that object. A form is subjoined to this work, calculated to convey precise information. And it is added, that, if it appear, from a comparison of these returns, that the results as relating to mortality in each class of disease, to time required for cure, and to condition of recovery, be equal, or nearly equal, in hospitals under the management of those who have had experience, and of those who have no experience, it will not be deemed a forced inference to conclude, that the medical art is of no value; if more favourable, under the management of those who have had no experience, it may be presumed, that the system of experience has been grounded upon an erroneous principle; but, if the advantage be decidedly in favour of experience, it may then be admitted, that the art
 actually

actually is of some value; that it actually has made some progress; and that it has been practised, in the case under question, upon a sound principle. If such be the fact, the effect will be in proportion to talent, diligence, and extent of experience.

But to whatever class of persons the health of armies be committed, experienced, inexperienced, or to no physicians at all, there is one point, in which it is not likely there will be any difference of opinion, viz. the best accomplishment of the object, with the least possible expence to the public. It is readily admitted, that, if those comforts and refreshments, which money commands, be found to contribute to save the life of soldiers, or materially to accelerate recovery, there is no œconomy in limiting quantity; but, while this is true, it should also be known, that superfluity does not merely imply waste,—it engenders abuse, and leads to error. A ration of provision is allowed to troops on foreign stations; such as, from experience, is found to be adequate to support strength and vigour, under the full activity of military service. In Britain, soldiers contribute a weekly sum to the mess, for the purpose of subsistence. It is a common opinion, (whether true or not the wise must determine,) that persons, who labour, and who move about in the open air, as soldiers do upon duty, require more food for sustenance, than those who are idle, or confined within doors. If this be true, the diet of a soldier, on duty, ought to be of a
fuller

fuller measure, than that of a soldier in hospital. If the hospital diet be fuller than the barrack diet, it may thence be concluded, that the one is too full, or that the other is not sufficient. This is a fair inference. It may be observed further, that, the subjects of an hospital consist of persons in various stages of acute disease; of persons suffering organic derangements, which affect general health; or of persons affected with maladies, which do not materially impair general health; for instance, with itch, sore legs, venereal complaints, and a variety of slighter accidents. It is evident, that this latter class requires no increase of diet for the furtherance of cure; for the health is not impaired by the effect of disease. It is even presumed, according to a vulgar maxim, that the quantity of diet should then be diminished, on account of the rest, or confinement of the subject; yet the hospital full diet (and the persons under question, generally stand in the column of full diet) is higher, perhaps by one-third, than the regulated diet of the barracks. In the other classes, viz. acute diseases, and derangements, connected with impaired general health, the case is different;—it varies, according to circumstances. In the early stage of acute diseases, there is rarely any desire for food, at least for solid food: there is, on the contrary, often a perfect abhorrence of it. In the various stages of recovery, the desire of eating is often keen; but the indulgence of appetite is known, by experience, to be hurtful. In the various derangements,

derangements, or chronic maladies affecting general health, the appetite rarely craves an increased quantity of food. It often happens that a change of quality, from that of the soldiers' ordinary mess, is useful; but there scarcely ever occurs an instance, which requires a greater measure. Hence, though quality may be changed with advantage, increased quantity is not craved; and it cannot be admitted with impunity. The difference of price, in provisions of the suitable or unsuitable quality, is rarely material; and, as the absolute quantity consumed, is less in sickness than in health, it is presumed that the value of the ordinary ration, or the sum, which a soldier contributes to his mess for daily subsistence, is sufficient to defray his daily expences, while confined by sickness in an hospital. If an instance, therefore, be known, where the value of the ration, or the sum, which a soldier contributes to his mess in quarters, answers the common expences of the hospital treatment, and, where a treatment, conducted after this rule, is connected with an effect as favourable in point of health, as where three times the sum is expended, the advantage is evident; for there is so much money saved. But further, if an instance be known, where the effect is more favourable; that is, the actual mortality less in proportion, the cure equally perfect, and the time, required for cure, shorter, under a reduced or measured diet, than under the plan of pampered and high feeding, the advantage is still more decided.

Both

Both life and money are saved ; and it may even be presumed, that the abstemious, or measured regimen, is not without a share in the favourable event. If such instances do exist, such practices demand attention. The proof of their existence is demonstrated. It is therefore of consequence, that the management of the health department of armies be well considered, and well administered ; for independently of the speedy and effectual recovery of health, it is of public concern, that the purpose be accomplished at the least possible expence ; viz. that nothing be wanting, which can aid in the purpose of recovery ; but that nothing superfluous be provided ; for superfluity implies error, and is followed by loose duty and incorrect effect.

It is important that the health of armies be well managed, and that it be conducted to the best issue, at the least possible expence to the public. It is moreover necessary, that the expence, such as it is, be exhibited with a voucher, distinctly specifying purpose and application. This is indispensable. It amounts to nothing, to state, that a certain sum of money is expended on account of the sick of an army, in a given time. It is necessary, that purpose and application be specifically and distinctly expressed, in every case. A physician, who knows his duty, does not order an ounce of beef and bread, or a gill of wine, exceeding the quantity of what is strictly useful ; and a physician, who does his duty, knows that what he orders is applied to its purpose.

pose. This is correct in the first instance ; and when this has been correctly executed, it follows that a statement of its expence, be exhibited, in such form, that a person of common sense may see, at one view, the daily cost of one man, or of one thousand men. The measure implies no difficulty ; and, when properly digested, it precludes all error, and cuts off all possibility of abuse ; for every expenditure has here its precise and specific voucher,—cause so contrasted with effect, that the simplest mind may be enabled to form a correct opinion of its truth.

The manner of auditing public accompts is a subject which seems to have commanded a good deal of attention. It is highly essential, that the public purse be guarded against the designs of the dishonest ; but it is not very clear, that the means, adopted for this purpose, are, in all their circumstances, the best. The simpler the form, and the fewer the embarrassments thrown in the way of framing public accompts, the greater is the chance of their being perfectly honest and correct. For it is true, however paradoxical it may appear, that numerous checks or formalities, instead of keeping men in the path of honesty by constraint, have a tendency to excite ingenuity to contrive means of overleaping the barriers. It is rigidly required, that public accompts be made up in an uniform manner, and attested by regular processes of formality, before they are submitted to the auditor. The contingencies
of

of military service frequently expose individuals to expend public money, under conditions, where vouchers, according to the prescribed formality, cannot be obtained. Auditors, who probably have no practical knowledge of the subject of their examination, either generally or in detail, cannot be supposed to judge, and will not permit themselves to judge of truth, if there be defect in the prescribed form. The money, expended in public service, must, therefore, be lost, if a regular voucher cannot be procured. In this case, A and B are produced to furnish it for an accompt, which is, *bonâ fide*, just. But, as it is thus found out, that A and B may safely fabricate a voucher for a true accompt, the mind is collaterally enlightened with a discovery, that C and D may, in a similar manner, fabricate one, with all its formalities, for an accompt which has no existence in truth. Hence, obstructions in the right road of plain dealing drive men of wavering honesty into the devious path, and the allurements of gain tempt them to persevere in it. This is more than possible,—it is true : and it thus will be found, that a solicitous care, to guard the public purse from plunder, has gone little farther than to organize a system of formalities ; which, instead of being barriers against fraud, appear often to give it a systematic protection ; for they can be procured without veracity, and, when procured, they claim validity. —The plan overlooks the possession of practical knowledge

knowledge in the commission of controul, which alone qualifies to judge of veracity. This subject is important; and it deserves a due consideration. For, if it be wished, that public money be correctly accounted for, as applied to the purposes of the sick, it is necessary that controul be established upon the spot; that it be conducted by persons, who are competent to the duty, from their knowledge of all the circumstances of the service; who are of an integrity not to be corrupted; and who are, officially, without friendships or enmities. The controul ought to be instituted at short periods; for, if delayed long, that is, till the termination of a war, the dishonest man goes on to plunder, till he has accumulated a fortune; and when that is done, he hopes to be secure, and often actually finds himself so. It ought to be committed to persons of professional knowledge; for without immediate and direct knowledge of the transactions to be examined, as vouchers of correct form may be procured without veracity, and, as when correct in form, they must pass the trial of the uninformed, frauds may be practised to great extent.

If the hints, suggested in the following pages, serve to draw the attention of the higher powers, to the improvement of the medical department of the British army; the author's object is attained. Some part of the publication has been called for by necessity;—to vindicate professional character, and to prove that the plan of

management adopted at the Army Depôt, was not adopted rashly, and has not been applied, in practice, to the detriment of his Majesty's service. It is admitted that the execution is defective in many parts : it may even, perhaps, be thought by some, that the manner is presumptuous ; for the language is without reserve. But it is believed, that the proof of the usefulness is demonstrated ; and, it is presumed, that the truth of the general result will be found to be correct.

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ERRATA.

Page	Line	
18	9	<i>insert a Comma after persons</i>
—	10	<i>insert a Comma after prescribed</i>
39	11	<i>for contageous read contagious</i>
49	6	<i>from bott. for possibilty read possibility</i>
63	25	<i>dele at</i>
97	14	<i>for reviving read receiving</i>
102	20	<i>for it had been taxed read and taxed</i>
121	12	<i>for laboured examination read laboured crimination</i>
147	9	<i>read physician and surgeon-general</i>
215	8	<i>for that is, hospitals with space, &c. read for the qualities necessary in hospitals, are space, &c.</i>
221	5	<i>from bott. for crysipelatous read erisipelatous</i>
277	10	<i>for constructive read constrictive</i>
285	12	<i>for hange read change</i>
294	6	<i>from bott. for ossible read possible</i>

REMARKS

REMARKS
ON THE
CONSTITUTION OF THE MEDICAL DEPARTMENT
OF THE
BRITISH ARMY.

PART I.

THE medical care of sick persons is one of the most sacred duties of man ; the medical care of sick soldiers is one of the most important concerns of an army. It claims a place of high consideration among the means provided in war ; for, independently of the kindneses of humanity, and of the gratitude due to those who risk health and life in defence of their country, there is economy, or greater saving of public money, in providing even an expensive medical treatment for sick soldiers, than in supplying the deficiencies which arise from diseases contracted in service, by a fresh levy of recruits on the mass of the people, or at a foreign market. Convinced of this truth, the principal warlike powers of Europe find it expedient to form regular medical establishments for the treatment of the sick and

Utility of
a medical
establishment.

wounded of their armies; but they do not all act upon the same principle in the execution of their views, nor do they all arrange their plans with the same means of information of what is fit for the purpose. The subject is complex. It comprehends a wide range of general and practical knowledge of military service, as well as a correct acquaintance with the history, causes, and consequences of the diseases, to which troops are most liable—in the field or in quarters.

Mechanical
organiza-
tion of ar-
mies.

An army is an animated machine, consisting of many parts or instruments of different degrees of power and importance, in a general purpose. It is organized upon a common principle, it is bound together by a common connexion, and it is moved by a common impulse; but though so organized, so connected, and so moved in its artificial arrangement, its different parts, which are perfect in themselves individually, are animated independently, and, in obeying their own laws of motion, are exposed to the action of a variety of causes, which have a tendency to derange or destroy their elementary existence. When skilfully composed, it proceeds steadily in its military course, if the physical properties of its parts are entire; but the causes which derange these are numerous, and, when deranged, though but partially deranged, the general movement is embarrassed, the action of the machine is even paralysed. To obviate the occurrence of this impediment is an important object of care; even to check the extent of the evil, when it does arise,

arise, is a matter of no inconsiderable value. The attainment of that end resides radically in a correct knowledge of the qualities of the elementary material; the attainment of the knowledge of the elementary material is drawn from the stores of physiological and medical science. This is the fruit of a professional study; and it is presumed, that it was with a view of ensuring the fruits of this study to the benefit of armies, that a class of men, under the name of physicians and surgeons, was originally attached as an appendage to the military machine. To these persons, who are supposed to be well acquainted with the nature of things, and with the laws of organic life, reasonably appear to be assigned the duties of investigating the nature of deranging causes, of ascertaining their presence, and of pointing out the means of obviating their effects; in short, of keeping the materials in order, and fit for their places in the great arrangement; or of making suitable provision for disembarassing the military movement, by the removal of inefficient parts. The office, in its full latitude, is of high importance; but it is scarcely ever exercised by officers of the health department in full latitude. In the arrangements preventative of sickness, army doctors have but a feeble voice: they rarely are permitted to prescribe a rule for obviating the occurrence of disease; their labours are chiefly confined to the treatment of those who are actually sick, that is, to the repair of

ineffective parts,—somewhat in the same manner as scavengers,—who are employed to collect useful matters from rubbish, which their timely aid, properly directed, might have prevented from becoming a ruin.

Uniformity
of the laws
of Nature.

It is the observation of a person of high rank, and of authority among the wise, that there is nothing new under the sun. The affairs of men have rolled on in the same channels for many ages, sometimes at a slower, sometimes at a more rapid pace, the same in themselves, and subject to the same general laws of movement: even in war, and in the accidents of war, there is fundamentally but little variety; for the same causes are in action, and they produce the same or similar effects. As nothing then is new, so nothing ought to happen which has not been foreseen and provided for.

Provision
of medical
means.

This uniformity of movement in the operations of Nature applies to the health of man. It demands particular attention in arranging the medical concerns of an army. This is a truth which does not require a formal proof; for it is evident to common sense, that the chief of the medical department of an army, who is furnished with full information of the views and designs of the military leader, who possesses foreknowledge of causes, and who is permitted to adopt effective measures of prevention, will often have it in his power to anticipate the occurrence of sickness. With the knowledge, and with the
power

power inferred, he will be without excuse, if he has not in readiness the best human means of combating it when it does occur.

It is known from the history of campaigns, that the rise of sickness in military service commonly follows a regular rule. It depends on the subject, that is, the quality of the soldier, the nature of the service, the nature of the climate, and the season of the year. These are obvious causes; the effect is subject to accurate calculation; there is want of knowledge where it is not foreseen; and there is neglect of duty where it is not to a certain extent anticipated. But if human knowledge and exertion are not at all times able to avert the afflictions of sickness, the requisite remedies calculated to combat it, when present, are supposed, if the subject be well understood, to be always at command, measured in quantity and proportioned exactly to the ends of the service; for, as the ravage of disease ordinarily arises from the periodical operation of natural causes, or from the operation of adventitious ones of temporary duration, so it declines, by a similar rule, after a stated interval. Where this fact is not known, or not considered, the report of raging epidemics in foreign parts occasions alarm; medical aid is appointed, and dispatched with diligence and speed. From want of knowledge of a correct state of things, the aid appointed seems often to exceed the measure of the wants; from the fleeting nature of the causes of disease, it sometimes does not arrive at

Quantity
of medical
aid.

the destination till the time of need is past. This is not even a rare occurrence in military service;— it was strongly exemplified in a late expedition. Such events ought to be avoided; they may be avoided; for they arise only where there is want of foresight, or ignorance of causes and effects. In the one case, a defect of medical assistance is experienced in times of sickness, which is a misfortune; in the other, the service is loaded with an excess, which, however paradoxical it may appear, is also an evil, for it is ordinarily accompanied with a languid performance of duty.

Quantity of
hospital
stores.

It is stated to be useful to calculate precisely the quantity of medical aid, sufficient for an army of a given force, in a service of a known nature; it is necessary, for a similar reason, to estimate correctly the quantity of hospital stores, that is, provisions of bedding, clothing, utensils and medicines, sufficient for a like purpose, under known conditions, and a known period of service. The accuracy of such calculation depends upon correct knowledge of the number and nature of diseases, the ordinary product of similar duty, with a knowledge of the consumption of medicines, of furniture and utensils in tear and wear, for a certain time, for a given number of sick, under an established system of management. The matter is capable of calculation, even to exactness; and it is essential to the public good, that it should be exactly calculated; for, as it may be ruinous to health that useful things be wanting; so it is wasteful and embarrassing,

raising, that superfluous things be present. The rule of apportioning supplies correctly to the wants is therefore to be kept in view, for it is necessary to guard against the evil of incumbering the movements of an army with matters belonging to the sick; and hence it follows, that the medicines, selected for military service, should be taken from the most portable class,—small in bulk, powerful and effective in operation; likewise that the utensils be so contrived, as to answer more purposes than one; and that none be provided, except such as are indispensably necessary. To know every thing which may be done in retrenching superfluity, without encroaching on utility and comfort, requires a correct knowledge of the wants of sick men, not to be learned but from what may be termed domestication in an hospital. To preserve cleanliness in the apartments, and propriety in all matters which relate to the persons of the sick, entails no great expence, nor implies much apparatus of equipment; yet the benefits of this measure in forwarding the cure of diseases are eminent; provision necessary for that purpose must therefore be considered as indispensable.

In equipping an expedition, it is necessary to consider well what is useful for the relief of sick and wounded, and what only is useful; for where this is not known, and kept in view in selecting furniture, utensils, and medicines, it is found on trial, as might reasonably be supposed, that many things decay and perish in store as

Evils of
equipment
not cor-
rectly mea-
sured.

useless, while others, indispensably necessary, are wanting for exigent service. Evidences of this are numerous and strong. The fact will receive explanation, by referring to a return of all the hospital stores and medicines, which have been ordered for the army during the war; a return of what has been taken by the enemy, or lost by unavoidable accident; a return of what has perished in store, as not useful, or which has been sold to prevent total loss; a return of what has been brought home, unexpended,—generally not useful for the purposes of the service; a return of what has been purchased abroad, for this is not unknown; accompanied with returns of the sick and wounded in the various hospitals for which these stores were designed. Such a document might be supposed to furnish profitable information to the higher authorities. By seeing what *has* been, they might, perhaps, discover what *ought* to have been.

General
knowledge
and practical
experience.

Further, a correct acquaintance with the nature and form of military diseases, is a necessary and preliminary knowledge for the medical chief of an army; but it is a knowledge which only can be acquired by study in the school of experience. In the first place, a correct knowledge of the physical constitution of man in his general relation, and of the peculiarities which belong to his class as a soldier, is considered as preliminary education; but besides this fundamental knowledge of the general and particular properties of the simple element of an army, practical observation

vation of the manner in which various parts unite and move in combination, is necessary to be possessed by persons who undertake to bring together, to dispose in order, and to form a connected body of heterogeneous materials, the arrangement of which constitutes a material part of the business of a medical chief;—practical knowledge of military service is therefore in a manner indispensable.

The first organized composition of the elementary parts of an army is styled *Regiment*. It is the type of the whole, however extensive. It is fit that every thing which relates to its economy and health be correctly known; for if the economy and military management of a regiment be well understood by a military officer, the economy and rule of management of an army of fifty thousand men will not be altogether new; so, if the management of the sick of a regiment be well understood by a medical officer, the management of a general hospital, which is a similar though more extensive duty, will not occasion much embarrassment. On the contrary, as a military officer, who assumes a military command without experience of service, will find himself embarrassed in the time of trial; so a medical officer, who assumes the direction of the medical department of a numerous army, without previous knowledge of the economical and medical movements of a regiment, can scarcely avoid experiencing difficulty. Like an unexperienced sailor in an unknown sea without a guide,

a guide, it will not be extraordinary if he suffer shipwreck, or wander in his course.

Devotion
to duty.

Knowledge, as has been stated, is indispensable in forming a plan of management; attention is necessary for superintending the movement or execution of the plan so formed. A mere machine, once put in motion, moves on by a mechanical rule, without interruption, but such as is known and expected; the animated machine is liable to many accidents; for its elementary parts are subject to the impressions of weather, climate, and a number of adventitious causes. These causes are constantly in action, constantly at work in producing derangement in the physical properties of the elements. Their operations may be foreseen; but they must be looked for with an attentive and penetrating eye. When foreseen, the effect may often be prevented; at least the extent of the ravages, the natural consequence of the action, may be limited.—If this really be so, the whole time and attention of the chiefs of the department may be thought due to the attainment of an object so desirable.

Medical
establish-
ment of
continental
powers.

It would be proper, in treating of the constitution of the medical department of the British army, to notice, at some length, the medical arrangements of the principal powers on the continent; but the author's knowledge of the subject is not such, that he can venture to go into detail. The medical arrangement in the Austrian and Prussian armies appears to be correct and systematic, like the plan of their military discipline.

pline. The routine is steady ; it may even appear harsh ; for it is not so much under the influence of the kindneſſes of humanity, as of utility in a military view : it does not often admit of the comforts and indulgences which ſick men crave, and which they ſometimes require ; but if there be little extra-indulgence, the exactneſs of the order and economy prevents the accumulation of apparent miſery. The Auſtrian hoſpital is regular in its movement, as the duty of the military parade ; and the efficiency of the organizing principle mechanically arranges new materials in their proper places, without confuſion, and without loſs of time.

Contracted with the Auſtrian, the medical department of the Britiſh army preſents but a looſe ſyſtem of arrangement. It muſt indeed be acknowledged, that to form and carry into execution a correct plan of hoſpital management is, abſtractedly in itſelf, a matter of greater difficulty in the Britiſh ſervice, than in the armies of the chief powers on the continent ; for, as there are many recruits in the Britiſh army in times of war, ſo there is comparatively a great proportion of ſick, and conſequently of ſick not diſciplined or inured to military habit. Farther ; the economy is not yet uniform and perfectly ſyſtematic. The whole army conforms to regulation in dreſs and tactic ; but there are ſcarcely any two regiments which have exactly the ſame interior management. Some are very correct ; others are very looſe. This produces

Difficulty
in forming
a ſyſtem in
Britiſh ſervice.

duces effect upon health in the first instance, and it produces a jarring movement in hospitals. But besides this, there is a similar, and still more remarkable want of uniformity in the qualities and constitution of the elements of the medical department itself. The agents do not act upon a common principle ; for, as the British nation possesses no public school, or place of professional education for the persons who devote themselves to the medical service of the army, so the education of young surgeons is various, and the principles upon which they act are often contradictory. Confusion and inconsistency in design and execution must therefore be the consequence, where a medical charge is delegated to persons so widely divided in their professional opinions, as are the pupils of the different medical schools in the united kingdoms.

Chiefs of
the medical
depart-
ment.

The elements of the medical department of the British army are heterogeneous ; and it is not clear that the organization of these elements, and the direction of their operations in effect were ever, at any period, in the hands of persons practically acquainted with the business, that is, with the œconomy of troops and the movements of regimental and general hospitals in the various conditions of service in peace or actual war. It is in regiments only, perhaps, that the rudiments of the science can be correctly learned, and it is in actual war only that the knowledge can be acquired necessary to the forming of great arrangements. It is thus presumed, that there
always

always has existed, in a greater or lesser degree, a want of the practical knowledge necessary to be possessed by persons appointed to form a medical establishment for a numerous army, and to superintend the management of it in all its progress. Even the present chiefs of the department,—the army medical board, consisting of a physician-general, a surgeon-general, and an inspector-general of hospitals, have not greater pretensions on this head than their predecessors. The physician-general never served in the army; and it is not publicly known, that he *ever*, even transiently, visited a military hospital. The surgeon-general and inspector-general were both of them surgeons in the guards; but their services have been confined to London *. With the most favourable allowance on the score of capacity, it is evident that many things must happen in the medical department of an army in the field, of which they could not have practical knowledge, on which they could not form a correct judgment, and for which they could not provide an adequate remedy. There thus appears to be want of preliminary knowledge; there is also presumption of want of exclusive devotion to the duties of the office; for, the members of the army medical board are private practitioners. Such persons as are referred to the board

* The present inspector-general was about six weeks in Holland in the year 1799, in the family of the commander in chief; the late one, an acting surgeon in a detachment of guards in the American war.

on account of health-certificates, frequently complain of the difficulty of obtaining audience. Persons of the medical department often complain of the tardy, sometimes of the incorrect execution of business which depends on the decision of the medical office in Berkeley-street. Such remark may appear invidious; but it is connected with the subject, and it concerns the public duty.—It is almost unnecessary to observe, for it is vulgarly known, that it is not a common quality of man to pursue two objects with equal zeal and ardour. The mind cleaves in preference to one,—usually to that which carries with it the strongest bait of interest. Hence it is not unjust, for it is not unnatural, to suppose that the performance of the public duty, to which a fixed salary is annexed, is secondary to the private occupation, which brings daily reward, the price of industrious labour.

The foregoing observations respecting general results being premised, it will be proper, in the next place, to bring under view, in short detail, an outline of the leading principles which direct the present medical chiefs, with some notice of the general effects as applied in practice, contrasted with the system of management which prevailed in the early period of the late war.

The medical department of the British army, at the commencement of the late war, was under the direction of Mr. Hunter, who was then surgeon-general. Mr. Hunter was a man of an original

original mind, and of considerable discernment. Though too little acquainted with military operations in the field to foresee every thing which was likely to occur in military service, and to provide, on all occasions, from his own sources of knowledge, the best means of remedy; yet, not being shackled by prejudices of education, he took information where he found it, formed his plans upon the best grounds he could command, and executed, with firmness, the plans which he formed. He appears to have considered the cure of disease, whether by manual operation, or the use of internal remedies, as the proper business of a medical man, destined for the service of the army. He could not avoid observing, that the persons, denominated surgeons of regiments, sometimes employ the one means, sometimes the other. They thus act in two capacities; rarely, indeed, in the surgical capacity, for there rarely is occasion, unless in actual war; daily in the medical, for a regiment is scarcely ever without a list of sick. Hence surgeons of regiments, who remove diseases by the use of internal remedies are *bonâ fide* physicians, as much physicians as Hippocrates; and they obtain the diploma in the same school, that is, in the school of experience. It is probable that Mr. Hunter was impressed with an idea of this kind. He seemed to consider the medical duties of armies as of one character,—the same in a regiment, and in a field-marshal's command; and he naturally concluded, that the person who was experienced and able as a surgeon

geon in a regiment, would prove capable and useful as a physician in an hospital. A plain understanding readily assents to the opinion; for the nature of the duty is not changed,—the circle only is widened. It is not certain that Mr. Hunter reasoned in this manner, but it is probable that he did, for his fundamental rule of discipline and promotion, viz. that no person should attain the rank of physician, which is the most important station in the medical staff, without having previously served as surgeon of a regiment, or held the rank of surgeon or apothecary to the forces, seems to imply it. The rule is fundamentally good. It ensures experience to a certain extent: it supposes an acquaintance with army diseases, with the manners of soldiers, the routine of economy and management of troops. It is politically useful; it encourages a desire of professional improvement, by holding out a prospect of probability, that the surgeon of a regiment will one day be called to direct the medical department of an army. It serves to impress an opinion on the mind of the soldier, that the attainment of the higher rank is a reward of diligence and talent; and it thereby leads to confidence. It is gratifying, as it seems to be just; and, as it resembles the rise observed in the promotion of military officers, it is in accord with the military system. But while the rule under question has all the advantages ascribed to it, it must also be confessed, that, if promotion to the rank of physician, who is supposed to be

be

be the chief and director of an active medical staff, be given to seniority undeviatingly, it may so happen, that such direction will fall into the hands of persons, grey probably with years in the service, but whose experience is not sufficient to compensate for want of genius and want of energy; both of which are necessary for the proper execution of a duty, which is important, extensive, and liable to contingencies of an embarrassing kind. This is true:—it may occur, and it has probably occurred oftener than once; but it does not invalidate the principle of the rule, viz. that the most useful army physicians are to be found in the class of regimental or staff surgeons, who have risen by a regular gradation to a higher rank, it only suggests a caution, that talent, activity and zeal are to be considered in the choice of the person, and, that they are more to be regarded than mere length of service; a circumstance which Mr. Hunter, in his arrangements, does not appear to have sufficiently weighed.

The medical department of the army was new modelled after the death of Mr. Hunter. A board, consisting of a physician-general, a surgeon-general and inspector-general of hospitals, a body, apparently calculated to embrace, in the circle of its knowledge, all the medical concerns of an army, was at this time appointed to undertake a trust, which, in the early period of a momentous war, was justly deemed to be important. From a combination of talent and

Present
principle.

experience, the public had a right to expect some useful improvement. The object of the board went higher than improvement of the old system : it aimed to build a new ;—preparatory to which it overturned, even to the foundations, the structure of its predecessor. It not only dispensed with the fundamental rule of Mr. Hunter, stated above, but it went to establish a law, proscribing persons qualified as prescribed from the expectation of filling the physician's office ; for it was understood, that an army surgeon could not expect to become an army physician, though he might possess a diploma, and, to use the language of the physician-general, though he might possess the knowledge of Sydenham or Ratcliffe *. The law does not seem to be just. There were surgeons in the army at the beginning of the war, who had entered the service in expectation of rising to the physician's rank, after a due course of experience, and the exhibition of proofs of fitness. It is probable that those persons may complain, at being thus precluded from filling an office of respect and consequence, to which,

* Spoken to the author of this statement, in Upper Brook-street, in March, 1794.—In this point there was at last some relaxation, and persons, serving, or who had served as surgeons of regiments, were declared to be eligible to become physicians in the army, provided they obtained a licence of qualification from the college ; but the college of London positively refuses a licence to any person bearing his Majesty's commission of surgeon or apothecary ; so that, the clause being nugatory, the proscription remains in force.

according

according to established custom, they were allowed to direct their views; and they will consider it as a hardship, that they are precluded, on the grounds of their being regimental surgeons, a rank, in which they had been required to serve as a qualification for promotion; for it is, as it was believed to be, the only station, where correct knowledge of the physician's duty can be acquired. That such persons should feel themselves aggrieved is not a matter of wonder; but the grievance concerns individuals, and the interests or claims of individuals must be allowed to give way to public good; if it can be made appear that public good will be the fruit of the new measure. To give convincing proof on that head will not, it is presumed, be an easy task; for, by the proscription of the class of army surgeons here alluded to, the general hospitals, the great theatre of sickness, are denied all the advantages which are supposed to be derived from experience; and experience, ever has, and is still thought, in vulgar opinion, to be the best guide of physicians.

It has just been stated, that persons, serving as surgeons of regiments, are precluded from attaining the rank of physician in the army. They cannot, therefore, be permitted to undertake the medical care of sick soldiers in general hospitals. This is the highest and most important duty of medical men in armies, or in civil life. In the British military service, it is directed, to be placed exclusively in the hands

Regular
physicians.

of a high and privileged class, the physicians of the regular universities, and associates of the college of physicians of London. It is proper to observe in this place, for the information of such as may be ignorant, that the universities of Oxford and Cambridge, the two universities of England, confer degrees of doctor in medicine, and the college of London confers licences, considered as the only degrees and licences regularly qualifying physicians to exercise their art on English ground. The present medical board, of which the physician-general is the chief, desirous of guarding the higher province of the medical staff from the intrusion of irregulars, suggested an expedient, which is enacted into a law, that the appointment of physician in the army shall, in future, be confined to the privileged class,—the graduates of Oxford or Cambridge, members of the college of physicians of London; or, in defect of candidates, possessing the great privileges, to licentiates of the college. The law presents itself with an imposing air; and, if Oxford and Cambridge were medical schools, and, in common opinion, the best medical schools in the kingdom, it might be supposed to rest on reasonable grounds; but this neither is, nor is even pretended to be the case. The universities of Oxford and Cambridge are universities of celebrity. They have a name in classical and biblical learning; and an Oxford degree of doctor in divinity, may, on this ground, perhaps, be allowed to possess superior eminence;

eminence; for the doctors are learned: but, if prejudice be set aside, it will be difficult to shew, by what reasonable rule, an Oxford degree in medicine has a preference over a degree obtained in Scotland, at St. Andrew's or at Aberdeen; for, though it be not purchased directly with a sum of money, and is not bestowed but upon persons who keep the terms, yet it must necessarily be bestowed upon persons, who are without medical knowledge, unless they have acquired their knowledge at other places; for, at Oxford or Cambridge there are no systematic schools for medical instruction. Such is the fact. It is not very necessary to dilate upon the subject; for it will be allowed by every person, who is not prejudiced, and blindly prejudiced, that the possession of knowledge, however attained, is the first quality to be sought for in an army physician. It is not to be conveyed in the form of a diploma, like rank in a patent of nobility; nor can it be acquired by any other means, except a painful investigation of the book of nature; a book open to all, without prescription of privilege; and a book, from which all learn in proportion to their opportunities, their diligence and their talent.

It is not to be supposed, notwithstanding what is now said, concerning the rule of selecting physicians for the service of the army, that any disrespect is thereby intended to the graduates of Oxford or Cambridge, many of whom deserve high consideration, but it is necessary to shew, if

Contrast of
regular
physicians
with the
physicians
educated in
the experi-
mental
school.

knowledge be the criterion of preference, that such persons have no fair claim of preference, from the date of the diploma, over graduates of other universities; for they have possessed no superior means of information in the course of their college education. They have not had any preparatory instruction for the army; and in their debut, as army physicians, it is probable they will meet with great and discouraging difficulties; for without experience of similar duties on a small scale, the mind, which is capable of foreseeing all casual embarrassments, likely to arise in a business which is entirely new, must be supposed to possess great natural discernment, an uncommon energy, and an energy constantly exerted, to remedy successfully a daily accumulating load of miseries, a philanthropy, exceeding the usual measure, to engage the heart in the duties of an office, which presents only a scene of suffering and pain, particularly where predilection to the objects, acquired by habit or previous knowledge and friendship, cannot be supposed to operate. The weight of responsibility, in such circumstances, must bear hard upon a sensible mind not accustomed to see scenes of distress; and such often must be the case of the physician, appointed from civil life, to act in military hospitals.—In similar circumstances, the physician, who previously had been an army surgeon, has great advantages. To him nothing is new. In the habit of treating similar diseases in regimental hospitals, and of witnessing

witnessing similar scenes for a course of years, his embarrassments are comparatively small,—for the circle of action is only widened, the principle and manner of acting are not changed. It is therefore no unfair conclusion to infer, that the interior of an hospital, under the management of a person, who has been formed in the regimental school, will almost uniformly present an advantageous picture, in every thing which relates to arrangement and order. For it is reasonable to expect from the regimental surgeon, now physician, all the good which results from a knowledge of the manner, habit and character of soldiers; from method in performing duty,—a method acquired in long practice; from attachment to duty,—a duty which has been the chief business of life; a love of it has grown into habit, a correct execution of it has brought respect, and, from a continuance in the same course only, respect can be retained:—from an impression of intimate union with the army; the regimental surgeon, now physician, believes himself to be, in some measure, an integral part of the military body, he retains a predilection for his class, and, exclusive of the common kindness of humanity, preserves an attachment of fraternity for the sick soldier and sick officer.—The condition of the physician who undertakes the management of a military hospital, unacquainted with military life, presents a strong contrast,—a contrast arising from, and necessarily connected with the nature of things. He has no previous

knowledge of his duties, no knowledge of military manner, habit and character, no, or but little systematic method, for he has had no means of forming it, no, or but little attachment to his duty, for he has few ties to it, he has no predilection for those, with whom he serves, for the army is not the profession of his life; he does not incorporate with it, for he is there only as sojourner, to wait for the growing of the beard, or to realize, by temporary service, a pension from the half-pay of the medical staff. The contrast has been witnessed, for the experiment was made in the early part of the war. On the continent, in the year 1794 and 1795, the army physicians were almost all regular, and from civil life. The history is recent, and it is not necessary to refresh the memory of the public by a remark on the subject.

Value of
experience
of military
diseases.

It is known that the causes of sickness have a common action upon all persons, whether in civil or in military life, corresponding with the force of the cause and the circumstances of the subject. The circumstances of the soldier are often peculiar; and by such peculiarity, the action of the deranging causes is proportionally modified; the causes are also strong in degree. Hence army diseases are often of a rapid course,—of a violent and dangerous character. Though the same in kind, as those which happen in civil life, the aspect is often more threatening, seeming to demand more promptitude and decision in the application of the means of cure. It might therefore be inferred, that army physicians ought to

to be prepared by a course of previous education for a correct and effective discharge of their duties, which are so dear to humanity, and so important in the concerns of the nation. But for this purpose, the nation possesses no school or place of instruction; and as there is a law, which proscribes surgeons of regiments, who have had the means of acquiring knowledge of army diseases, from entering the pale of military hospitals in the character of physicians, it necessarily follows that the fruits of army medical experience, whatever these may be, are denied to the general hospitals of the British service; even the fruits of common experience, will not, as things are, often appear in the scene of action; for it will happen by a very rare accident, that the graduates of Oxford or Cambridge, members of the college of physicians of London, men of years and reputation, without which it is not likely that experience has been great, will condescend to accept of an appointment so little lucrative, as that of army physician. The consequence necessarily follows, that army physicians must be sought for among young men; for old ones, who possess the privileges, will not accept of it. If physicians be young, they cannot be supposed to be experienced; talent they may possess, but talent is only the capacity of acquiring knowledge; they cannot be supposed to know without learning, and they cannot learn without having had opportunities of observing.—It is evident on what ground they stand.

Further,

Selection of
staff sur-
geons.

Further, as it was the custom, in the British service in past times, to promote surgeons of regiments to be surgeons of hospitals, so in the new regulations, it is professed to be the intention to select, where attainable, the surgeons of army hospitals from the members of the corporation of surgeons of London,—pupils of the London hospitals. The measure is less objectionable, because less important, than that which relates to the selection of physicians, but it scarcely can be considered as an improvement. It will not have the effect of bringing surgeons of experience into the service; for the emolument is too small to allure men of acknowledged and known ability. The London hospitals, it is admitted, present a wide field of observation for surgical pupils; and these pupils are also acknowledged, in many cases, to prove themselves to be correct anatomists and expert operators. In the business of operating, and in dressing wounds and ulcers, they have not perhaps superiors in any country; but in the arrangement and management of hospitals, a duty which must, on some occasions, fall to the lot of staff surgeons, they can have no claim to preference; for education has given them no advantages. It may indeed be said, without implying a censure, that the surgeon's duty, in military hospitals, or in the field with armies, is too extensive and too complicated to be well understood and well executed by persons, who have had no previous experience in a narrower circle; and that the

debut

debut of medical men into the army, of whatever class they may be, ought, for the good of the service, to commence in a lower rank than that of a staff appointment.

Such is the principle of Mr. Hunter and of the present chiefs of the medical department of the army, as influencing the selection of medical officers of the higher class. It is at direct variance. The public will form its own opinion, whether experience, or the authority of a college be of most value in the cure of disease. It is the object of this work to place the question fairly before the eye of the public; for it is of importance that a correct opinion be formed upon the subject.

The health of the soldier, in all its extent, is an object of care to the medical chief of an army, who consequently must be supposed to be competent to understand it in all its steps, and to judge of it in all its conditions,—from the first approaches of disease, to the time of perfect recovery and dismissal to the duties of the field or garrison. The subject comprehends various information, but it is only one in its end and design. It admits the organizing operation of one mind only, for there is only one effect to be attained; and, whatever contributes to the attainment of that effect, whether of a medical or economical nature, must necessarily be under one direction. There is only one military chief in an army; there can only be one chief in an hospital, and he must be a medical one; for
health

Duty of the
medical
chief.

health is the object of hospital establishments, and the concerns of health cannot be supposed to be well understood, except by persons of the medical profession, and these of the most enlightened class. They must necessarily possess a knowledge of every thing which relates directly or indirectly to the duty, whether of pharmaceutical remedies, surgical aid and applications, classification and arrangement of a heterogeneous mass of sick men, order of economy, or principles of military discipline. In the whole of this important work, there must be unity in design, otherwise there cannot be correspondence in execution. The construction, therefore, of the medical machine, in order to be effective of its purposes, must hinge upon a simple principle; for deviation from simplicity leads to error, or produces non effect. This rule of simplicity does not appear to have been understood or followed, in the British service, in the late war; for besides physicians and surgeons, who are supposed to be capable of executing all the medical duties of an army—of whatever extent, there are apothecaries, inspectors-general, deputy inspectors-general, assistant inspectors-general, inspectors, assistant-inspectors, field-inspectors, heads of hospitals and principal medical officers, all employed in duties the end and object of which is one. This multiplication of offices, while it seems to enlarge the boundaries and raise the consequence of the department weakens effect, by separating and dividing things, which are naturally united.

united. In civil life, a division or participation of labour among physicians, surgeons and apothecaries, is found to be useful. It serves to widen the medical connexion, and it seems to increase the importance of the profession in the public eye; but this is not necessary, in the army, for the sake of artificial effect; and as each class of the specified appointments claims a separate jurisdiction, though all employed about one object, jarings and disputes about boundaries and privileges are the consequence,—to the detriment of the public service.

But as the plan of management for hospitals, in order to be consistent, must be the work of one head, and formed upon one principle; so the execution, in order to be effective, must be under the direction of one eye; either that of the author of the plan, or of one who clearly understands the spirit of it. Every movement must proceed from one source; and the impulse must be animated and powerful, that the action be not languid or irregular. The chief of the medical department of an army, besides possession of the knowledge of the duties of his office, requires a mind susceptible of strong impression, and capable of being interested in the fate of the sick; for unless the impression be strong at the source, the expression of it will not pass with energy through its channels; and unless a spirit of benevolence be actually diffused through the whole extent, the most grateful part of the duty is wanting. To a mind possessed of sensibility,
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the duty of an hospital is a heavy,—sometimes almost an unsupportable charge. The scene, at best, is mixed, but the melancholy predominates; for, though it be a sublime and exalted pleasure, to afford relief to persons suffering the afflictions of pain, yet such pleasure is so mingled, and so often overbalanced by misery and distress, to remedy which human skill is unequal, or what is still more afflicting, requisite means are not provided, that unmixed pleasure is rarely in the physician's lot.

Economical
administration.

The economical administration of an hospital—a part not unimportant, is understood to be, in some degree, a separate duty, under the direction of a class (not medical) denominated purveyors. In times past the purveyor was a commissary of hospitals. He was an agent for contract, and like other agents had the means of making money. He is now stripped of that privilege, and of its consequent advantages. In foreign service, hospital requisitions, countersigned by the chief medical officer, are directed to be made to the commissary-general of the army. In England, they are made to the surgeon-general. The persons therefore denominated purveyors, as they cannot make a contract, or even a requisition to the commissary-general, on account of hospitals, without the sanction of a medical officer, are literally stewards of hospitals, bearing commissions. The commission appears to be of no public use in one view, for it gives no authority. In another, it is

is not unlikely to create confusion; and it not unfrequently occasions contention. A purveyor considers himself to be the chief of the economical administration of an hospital; and the persons, employed in economical duties, consider him to be their head, from whom they are to receive their immediate orders. It has been remarked, that the care of the sick in all its latitude is one object, that it hinges upon one principle, and that every arrangement, which relates to it, in order to be well executed, ought to be the work of one person in design, under the direction of one eye in execution. In the case of a commissioned purveyor, supposed to possess the direction and superintendence of economical administration, there is created, as it were, *imperium in imperio*,—a complication, which rarely moves in unison, either in hospitals or in greater concerns. This has been experienced; for purveyors have sometimes tried to resist the orders of the medical chief; they have often executed them feebly, not from positive fault, but from not feeling forcibly the importance of the trust committed to them. This office, therefore, engrafted in the medical department of the army with a separate jurisdiction, impedes or deranges the uniform movement of the machine,—renders an execution languid or discordant, which ought to be animated with the warmth of charity, and bound together by the spirit of harmony and concord. Purveyors are not supposed to know the condition of the sick
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in hospital, and cannot, therefore, be supposed to be capable of giving directions to nurses and orderly attendants, of their own authority. Even exterior order, economy and cleanliness, are so much connected with the duty of the medical officer, and so interwoven with the views of medical treatment, that a person pursuing an uninformed routine, as must be the case with a purveyor, may sometimes run counter, in what he does, to the intentions of the physician; he will often be wanting or tardy, where he ought to be present and active; for, not being acquainted with the condition of the sick, he has no enlightened information to direct, and no motive from within to animate exertion. He must therefore do what he is daily directed to do, as a simple servant of the hospital; or if he acts from his own opinions, he has the chance of sometimes doing what is wrong. In the one case a commission is superfluous; in the other the authority conferred by it may prove detrimental.

Commissary
of hospitals.

But though this be true, as the case now stands, yet in actual war a person denominated purveyor or commissary of hospitals, attached to the medical department of an active army, may hold an useful and important employment. According to the idea here in view, the purveyor or commissary is supposed to have under his charge and in his possession, the means of complying with every requisition made on account of hospitals, whether in stores and provisions, or means of transporting the sick, in the event

event of changing place. The waggon therefore, and all the necessary apparatus are under his charge; and all persons therein employed are under his orders. It is evident that such a person ought to be acquainted with military service; and, the better to ensure obedience to his commands, he ought to possess a military rank. He is empowered to conduct the exterior concerns of the medical department of an army, in correspondence with the medical chief; but he cannot be permitted to have any connexion with the administration of economy in the interior of an hospital, for he cannot be supposed to understand the principles of it in a perfect manner. This expressly and exclusively is a part of the duty of a medical man, in all its circumstances; but, that a medical man may be competent to execute it properly, he must know not only the powers of medical prescriptions, but the outlines of military discipline; a knowledge which he cannot attain, without experience of military service, but in the acquisition of which, his professional studies give him great advantages over other men; for he has been led, in his researches, to trace to their principles the powers of action in man, both in mind and body; so that he acquires a facility of arranging correctly and systematically materials, which appear, in their external circumstances, to be heterogeneous and discordant, an acquisition which cannot be expected to be found in persons who are but superficially

ficially acquainted with the qualities of men and things.

Utility of
rank.

The plan of management adopted in the medical department of an army is supposed to be formed by a medical officer, who is also reasonably supposed to be competent to superintend the execution of it. But in order to be able to do this effectually, he requires authority ; and he cannot well have authority without possessing a certain rank of office. It does not belong to a person, so humbly circumstanced as the author, to point out what that rank ought to be ; but, in order to give effect to the execution of medical duty, it is evident, that a fixed rank ought to be assigned to the different officers of the medical staff, and that such officers ought, on all occasions, to meet with the military respect, which is due to the rank which they respectively hold. The rank here proposed has no connexion with the rank of military officers. Medical men are not supposed to be capable of commanding soldiers, when soldiers are under arms ; but as their duty lies with soldiers, under sickness ; and, as soldiers are only impressed with the importance of persons who obtain military respect, it seems reasonable, as it would be useful, that that respect be extended to the officers of the hospital in due force ; for it is observed, that the opinion of professional skill follows an appearance of estimation in the military eye, even in hospitals ; and it is known, that opinion, in many cases, is
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of considerable value, though but opinion, in promoting an useful end. If the causes, which bring respect to men in military life, be traced to their sources, the glory arising from the achieving of military feats, or the splendour which follows the acquisition of wealth arising from lucrative appointments, are the most prominent. The medical staff has no share of these. In the field of action, the surgeons of regiments are frequently in the range of fire, and in sieges they run equal risk with other officers: they are thus exposed to danger; but it brings no glory, for the danger is passive. In performing the duty of hospitals, the medical officer is also exposed to dangers, even formidable dangers from the contagions of disease; but glory does not attend such dangers: they bring no dazzling trophy; they are not encountered to destroy a foe, but to save a friend. The effect does not stand prominent in the public eye; it possesses no brilliancy, and no general attraction;—its reward consists in a satisfaction of mind,—private, but pure.

If the medical staff of an army be considered, in all its relations with troops as conducive to general effect, it will appear to possess a more intimate connexion with the constitution of an army, than any of the other appendages attached to military service, whether of barrack-masters, commissaries, accomptants or waggoners; and on that account, it seems to be at least equally entitled to a defined and respectable rank. It

Specific
rank.

has been determined of late, that surgeons of regiments, in what relates to quarters, forage, &c. bear rank with captains. It will naturally be expected, that the gradation of rank proceed progressively by regular steps, among the officers of the staff, viz. physicians as majors, deputy-inspectors as lieutenant-colonels, inspectors, chief physicians, or whatever name be given to the head of the medical department, as colonels; and on service as junior-generals, in the same manner as the commissary-general of stores and provisions. The office of chief physician in an army is not less important in its own nature, than that of commissary-general. The execution of it requires more knowledge, more genius and talent; and it implies a more sacred responsibility. It is however, as things stand, less esteemed; for it has nothing to do with money, and it has no means of acquiring wealth, a cause which, on all occasions, strongly commands respect.

Military
superin-
tendence.

It has been observed above, and for the sake of public good it cannot be too strongly impressed, that a medical officer ought to be considered as the chief in an hospital, or of the medical department of an army. If instructed, as he ought to be, with knowledge and experience, possessed of the honour, zeal, and integrity which belong to a person acting in a high office, he does not require to be goaded to his duty by an intermediate power. He ought to be admitted to direct communication with his general, so that

that his informations, on the subject of his duty, be made with impresson at the source, and that instructions, for the management of his department, be conveyed to him confidentially and with original force. It is evident to common sense, and it cannot but be felt strongly by medical men, that the appointment of a military officer to the superintendence of the economy of hospitals diminishes the respect due to medical officers, even implies want of confidence in their ability, their integrity, or their diligence. It is also evident, if the question be fairly viewed, that if a medical officer knows what he ought to know, before he is placed at the head of an hospital, he cannot be supposed to be deficient in the knowledge of what relates to the care of the sick in all its circumstances; and if he possesses the principles, which he ought to be known to possess, before he is appointed to a charge of such importance, he will not require to be animated in his exertions by a foreign impulse. Such interference is more likely to produce irritation,—a sentiment of resistance, which terminates in contention. If the medical officers, intrusted with the care of hospitals, be novices, ignorant of every thing which concerns the treatment of sick men, except the formal prescription of a pill or bolus, or if they be negligent of their duty, and are only to be driven to the execution of it by fear, the office alluded to will be necessary. It probably dates its origin in such opinion. It is the provision of a power,—in some degree

foreign, to insure regular visits and formal prescriptions ; but it does nothing more ; it cannot communicate knowledge ; and it must be exercised with judgement and great delicacy not to irritate and offend.

In considering the constitution of a medical department, it is important to determine, by a just rule, the number of officers sufficient for the care of the sick of an army of a given force. A surgeon, with two assistants, able, active, and well qualified in all respects, will, it is presumed, be found to be a sufficient medical assistance for a regiment of one thousand men, under common circumstances of peace or war. In an army of fifteen thousand men, one physician and one surgeon, with ten extra mates, for a general hospital destined to receive the diseases of a tedious course, or persons badly wounded, will, it is believed, be a sufficient extra provision for an army of the force specified. To this must be added a field-surgeon,—a person of experience, who will also act as field-inspector, under the direction of the chief of the department, whether denominated physician or inspector-general. Persons of experience will readily allow, that the above establishment is sufficient for the medical care of the above number of troops, if it be all effective, and if the plan of management be formed upon a sound and simple principle. The proportion of sick, it may be remarked, fluctuates extremely in armies, according to the circumstances of the subject, the climate, the season
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of the year, and nature of the service. In the British army, the proportion of sick is usually high, compared with the proportion of sick in the armies of foreign powers,—the causes are not unknown, and need not be detailed in this place. One sick person in fifty appears to be a low proportion in the British army, one in ten is high. It sometimes however happens, at particular seasons of the year, in tropical climates, among bodies of unformed recruits, and where contagious fever, and other contagious disease finds its way among the troops, that it rises as high as one in five, even higher. In such case, the allotted assistance will be fully employed, but, if the plan of management be well arranged, it will not be overpowered; for it allows one medical person for every fifty sick men, a full, but not an oppressive duty in a well-appointed hospital, where the patients are properly classed in their wards, according to the nature and character of the diseases.

The variety of designation of offices in the present medical staff of the British army is singular; the number of the staff, to the disposable military force, is unparalleled; at least it has no example in any foreign army, nor has it an example in the armies of the British nation in former times. If the medical staff, regimental and general, were, on all occasions, able and active as it ought to be, it scarcely would be an exaggeration to say, that it could be equal to the me-

Excessive
number of
the medical
staff.

dical care of the whole regular force, if it were all in hospital, or in the sick list. The expeditions to the West-Indies may be taken as an example.

Necessity of
active duty,
as means of
giving re-
spect.

It is the fundamental rule of good arrangement to measure the means exactly to the ends. It is an observation in common life, and it holds good in the medical department of the army, as well as in common life, that a duty, which one person is capable of performing well, is seldom well performed by two persons equally well qualified. In order that duty of any kind be well done, the mind must be occupied in the performance of it, as if it were its sole object; that medical duty be well done, the mind of a medical man must be engaged, even excited to exertion. A physician becomes warm and interested in his object, by an opinion that his duties are important, and that his value increases in proportion to the quantity of duty which he performs, that is, the good which he does to others. In this ardour of pursuit, he rises in his own esteem, and he gains esteem with the world; if idle, or but partially employed, he loses professional consequence in his own eye, and his respect diminishes with the public. As a case in point, the importance of the medical staff of the British army declined greatly during the late war; for it was oftener idle than effectively employed. It is now, perhaps, the least esteemed of any of the appendages attached to the army, whether commissaries, accomptants, or waggoners.

If

If the medical staff be so numerous as stated, it may be concluded that some part of it is superfluous; a conclusion which is proved by the known fact, that a great part of it is unemployed. It is not possible for a person, who has not the opportunity of collecting information on the subject from official documents, to estimate correctly the quantity of the excess. On the subject of a just proportion, opinions may differ; but every man who has served in the army, and who knows any thing of the business of the army, cannot fail to know that the excess is beyond measure great,—not less than two thirds; for, if the medical staff of the army be divided into three parts, the quantity of duty, which officers of each class ought to perform, estimated, the returns of the sick in the hospitals examined, and a due proportion of labour allotted to each individual of the different classes, it will probably appear, that one third, or less than one third, either has performed, or was capable of performing, all the service which has been done, or which was to be done in the hospitals during the war. There are several persons on the list of the medical staff, who have never been in the proper field of medical duty; others have made a voyage, appeared at the army, remained a few weeks, or months, returned home to nominal employment, private amusements, or private pursuits. This is true. It proves that there is an excess, for many are ineffective or unemployed; yet with all this excess, the medical staff continues to receive addition.—It belongs to higher

Proof of
superfluity
of the me-
dical staff.

higher authority, to judge of the expediency of thus multiplying pensions on the medical half-pay; the object of the remark is directed to move a remedy for a practice, the evil of which conspicuously diminishes the respect due to medical officers, and instead of aiding, embarrasses public service, by overwhelming its movements with a multitude of unnecessary instruments.

Remedy.

A few remarks have been brought together in the preceding pages, respecting the constitution of the medical department of the army, in the hopes of drawing attention to the subject, which is evidently a subject of importance, and which, in common opinion, calls for attention. It may be reckoned to be presumptuous, in a person who has no authority from office, and who boasts no pretension, except that of long experience in camps and hospitals, to venture to point out a method of reforming the old, or rather of forming a new plan of management for the care of the sick. But, however unwilling to arrogate presumptuously, the writer considers the concerns of the sick as the concerns of every man: and, with due deference to the opinions of persons better informed, takes the liberty of suggesting such means, as he conceives to be capable of remedying, or rather of preventing the contradictions, confusions, and embarrassments, which arise so often in the management of hospitals, and which must necessarily arise in hospitals, as in other business, where there is no unity of design in the plan of the work,
or

or correspondence of action in the instruments of execution.

On this head it is necessary to observe in the first place, that the persons who present themselves for medical service in the army, belong to every part of the empire. Educated at different schools, they do not all profess the same views on the subject of their profession. It is true, that all undergo examination, previous to admission upon the list of hospital mates; but it is also true, notwithstanding the discernment of examiners, that persons sometimes find their way into the service, without their capacities or professional acquirements being correctly known, for the examinations are confined to queries in words, the answers to which may be found in common school-books of anatomy, surgery, or physic. Such examination, therefore, can scarcely be supposed to be sufficient to furnish a test of ability. Even the examinations of the college of physicians, which are verbal, can scarcely be directed so as to ascertain precisely the talent and powers of discernment of a medical practitioner. Yet such examinations give the test of qualification, which entitles a candidate to enter into the army as hospital mate, assistant surgeon, hospital surgeon, or hospital physician. The two first may sometimes be so circumstanced as to be obliged to act from their own judgement; the two last are supposed competent to do so from the day of appointment, for the appointment bestows an authority, to perform

Previous
education
of the me-
dical staff.

perform an independent professional duty. It was remarked above, that, in different medical schools, the principles of theory and modes of practice are rarely the same. Thus physicians and surgeons, the pupils of different schools, possessing different principles and different views of medical practice at the time of admission into the army, give effect, when admitted to act, to the doctrines of the different schools, and thereby introduce variety, even contradiction in the management of the concerns of the sick, a business which ought to proceed in one tenor, and after one form, in all the departments or branches of the service.

Medical
school.

The military object fought for in war, is the power of commanding a discretionary increase of action on given points. The means of attaining it is by organizing and arranging a variety of instruments, to move in one path, without jarring or impediment, so as to strike with impulse and effect upon one end. This is tactic in military science. The analogy applies in the medical concerns of armies; for uniformity of principle and correspondence of action are equally necessary here as in the other, to produce a consistent and organized effect; so that the movement of the sick, through the various stages of sickness to the perfect recovery of health, be regular, correct, and in unison one part with another. To attempt to prove the utility of such a plan, as promises to produce uniformity in the management of the medical department of ar-

mies, would be a superfluous labour, for it is obvious to the plainest understanding. But, though the utility of the plan be obvious, it has not yet been put in action in the British service; the foundations of it are not even laid; nor can they be laid till a school, or place of instruction be established, expressly for the education of army surgeons; and till a rule be formed, that every candidate be obliged to enter at the same threshold, and to walk the same round, in the progress to promotion, in the higher ranks. If this previous step be adopted, and the education be in future conducted upon a fixed principle, so that a habit be correctly formed, uniformity will be the result in all corresponding scenes of action. Such a plan of uniformity is desirable, and it is not difficult of attainment, for the means of effecting it are under command. The recruits, assembled at the army depôt, in the Isle of Wight, previous to embarkation for foreign stations, require a medical establishment; and a collection of young unexperienced soldiers, in a new scene of life, will rarely fail to furnish instances of disease, to supply materials for medical instruction. An hospital is already prepared for their treatment; and if its economy be established upon a simple and correct principle, its management conducted with order and regularity, it may be, as it ought to be the example or model of all military hospitals. The scheme, in order to be capable of effect, requires little preparation, and little addition of expence. The
preparation

preparation is almost solely confined to lodging apartments, a lecturing room, and a small library of books; the annual expence to the salary or pension of a teacher or professor, and subsistence, at the rate allowed to hospital mates, for a given number of pupils, supposed to be sufficient to supply the demands of the army.

The advantages of the projected establishment are obvious and great in prospect, the attainment is easy, and the expence trifling, but the good in effect depends upon the judgement, with which the plan of instruction is formed, the rigour and exactness with which it is carried into execution. It will produce no benefit till it produces a habit of conduct in the management of hospitals mechanically correct; and such habit cannot be produced without demonstrative conviction of the truth and utility of the practice adopted. The principle, upon which the system of hospital management is to be formed, while it is simple, must be general, so as to hold true, in all conditions of service, at home or abroad. That no means of obtaining this principle, upon which to lay the foundations of a system of medical management, be overlooked, the experience of all persons, who have served in situations of responsibility, in the late or in former wars, should be consulted. Among these the medical board of Ireland deserves consideration; for that board has had opportunities of learning, it has shewn diligence, and it appears to have attained knowledge. Farther, to the experience of medical,
ought

ought to be added the information of military officers. Military officers are supposed to know what belongs to discipline and economy; and their opinions command respect, in what relates to the treatment of men recovering from sickness. When informations of all kinds, relating to economy and arrangement, have been collected from various sources, no ordinary skill and discernment will be required, to separate what is simple and true, from what is specious but false; for the plan formed must be consistent in view, and move upon one principle through all varieties of service. Such plan is not impracticable, and it is to be hoped, it will be the fruit of combined wisdom.

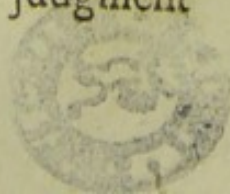
A general plan of medical management being formed from the best attainable informations, the first effects in practice will be exhibited in the medical school, at the army depôt. The purpose is important; but that it may not fail in its object, particular care must be taken that the teacher and pupils be proper subjects;—that the professorship do not degenerate into a sinecure, and that pupils be not admitted, without previous proofs of a disposition and capacity to learn. The professor, while active and zealous, must be publicly known to possess the fullest information on medical science, which the discoveries of the present age have brought to light;—for there is comprized in his duty a course of lectures, on the general principles of therapeutics, on the diseases most common in
armies,

armies, in Europe, or in tropical climates, on cases of disease in hospital,—for example and illustration of principles and practice, on the economy and management of troops, as relative to health, on the management of hospitals, under various conditions of service; the whole comprehending a range of informations, not to be commanded without a deep knowledge of general science, as well as of practical experience with armies in the field. The benefits, of such instruction will be incalculable in its effect, if well conceived by the pupil; but that this be secured, as far as possible, the talent and the character of the pupil must be correctly ascertained, previous to admission. This is a point in which great circumspection is necessary, for the pupils of this school, and these only, are to be considered as the elements of the medical establishment of the British army. It is proper, and ought to be preliminary, that no one be admitted, but under certain conditions: viz. an age from twenty to twenty-three, a liberal and classical education becoming a gentleman, a professional education, such as would be supposed to be a qualification for the exercise of the profession in civil life, with unequivocal testimonies of good moral conduct. With proof of good character, and of the previous education specified, the attendance of twelve months at the medical school might be considered as sufficient to entitle a candidate to bear the commission of assistant surgeon in a regiment of the line.

But

But though the elements of the medical staff be such as have been described, the introduction into the service regular, and the progressive movement, in the subordinate ranks, according to rule ; yet in times of war, when public good calls for persons possessing knowledge necessary for forming general arrangements in numerous armies, a correct test of positive fitness ought to be sought for. A chief medical appointment is then important. It is not due to simple seniority of service, much less to special favour. It is due to merit exclusively ; but it is often difficult to find out the real possessor of the merit which is wanted. To attain this object a new mode of investigation may be adopted. The returns of sick in hospitals may be considered as the most certain materials, upon which to form an opinion of the management of the medical duties in armies ; but before even these can be relied upon, it is necessary, that they be constructed upon a plan, calculated to exhibit a correct picture of the medical history of troops in all conditions, so that the results may be ascertained with facility, and without possibility of deception. The form of return adopted at present in British hospitals cannot serve the purpose, for it conveys no information. Constructed upon the plan suggested *, and submitted to the annual examination of a board of officers, military and medical, competent to form

* Tab. VII. Tab. VIII.



judgment upon the subject, and superior to all suspicion of bias or prejudice, it would convey correct knowledge of the state of things ; and the merit of individuals, as appearing in a series of trials, being truly estimated, the comparative scale of fitness for higher office determined, and submitted to the commander in chief, a document would be placed in his possession, directing him to the choice of the persons the best qualified for the performance of the services which he requires. In this case promotion would be the reward of merit, and of merit only. The advantages of the plan would be great and extensive. Justice to individuals, and to the public would not only be insured in the choice of a proper person, but industry would be excited in the whole department, talent improved, and knowledge studiously cultivated ; for the possession of it would be known to bring reward.

The value of an army is relative, consisting in pre-eminence of courage and military skill over the army of a hostile nation. An army may thus conquer without being positively good. The value of a system of medical management, is not to be measured by an artificial rule of so fluctuating a kind. Medical skill is progressive. It makes approaches ; but the perfect command of the object must ever stand without its reach, for the means and instruments are the feeble powers of man against the unconquerable things of nature. But though the medical art is an imperfect art, incapable of promising certainty,
either

either as curing disease or preserving health, (for mortality is an inheritance of man, and susceptibility of disease an attribute of life), yet experience and reason have shewn some useful light in both these points. Health is preserved by guarding against the operation of deranging causes, and the hand of death is apparently arrested by the use of medical means. The application of this knowledge, to the concerns of an army, is an object of great importance; for, by preserving the activity and preventing the destruction of the elementary parts, it insures efficiency in the military fabric, which, without its aid, would fall into disorganization and ruin. The care of health therefore demands attention, and it is presumed, it will obtain it. One of the most obvious, and a primary means of aiding the purpose, appears to consist in a regular and systematic education of medical pupils at a military hospital.—The practicability of the plan has been shewn.

The subject of the preceding pages is im-
 portant, and demands a serious attention. The
 remarks, which are offered upon it, are drawn
 from actual experience, and they have been duly
 considered; but it would have been well, that
 they had passed through a channel capable of
 giving them more effect. It is well known,
 that expeditions, apparently well concerted, have
 sometimes failed from sickness and mortality
 among the troops; and that campaigns, the plans
 of which seem to have been well laid, have had un-
 successful

Conclusions

successful issue from the same cause. It is moreover true, that these effects have often arisen from defects in the original plan of medical arrangement, or from ignorance and inattention in the manner of execution. The means suggested in this place hold out some prospect of remedy. If the plan of management were formed upon the informations of the most enlightened part of the medical staff, and executed by persons practically educated at the same medical school, it is presumed, that the rules would be founded upon what is proved in experience to be generally useful, and executed with a corresponding degree of exactness, by a class of pupils systematically educated; the effect would be uniform throughout. Such suggestion will be termed an innovation. It goes to violate the existing regulation, which excludes army surgeons,—the pupils of experience from the high rank of army physicians; but it gives to the service the fruits of experience in the cure of diseases, a subject on which experience alone can give knowledge. The propriety of the other suggestion—of measuring medical assistance and hospital equipments, exactly to the wants, is obvious, both on account of correct effect, and of economy of public money. It deserves attention, and it probably will obtain it; for it comprehends no mystery, so as to be disguised by the gloss of professional arguments.

PART II.

*Detail of the Management of the Hospital of the
Army Depôt, in the Isle of Wight in the Year
1801.*

IN forming a plan of management for the treatment of the sick of an army, a provision of the means, suited to restore health speedily and effectually, claims the first attention; the amount of the expence, incurred on that account, is a secondary, but not an unimportant consideration. The whole object is interesting, on the score of humanity as well as advantage; and it demands to be arranged on a solid and scientific basis. It is equally necessary to avoid the inconveniencies of excess, as it is to avoid being exposed to suffer from defect. Some attempts of arrangement were made at the army depôt, in the year 1801, intended to hit the just medium. Whether successful or not must be left to the decision of others. They are explained in the following pages; but previous to a detail of the explanation it will be proper to notice cursorily the original character of the soldiers, who composed the depôt, (the subjects of this new arrangement); the circumstances under which they are conveyed to the depôt; under which they lived when there; the probable causes of

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the sickness which prevailed at that place ; the proportion of sick at particular times to the number of the healthy troops ; the nature and character of the diseases themselves ; with notice of the extent and the quality of the hospital accommodation provided for the reception of the sick of various classes.

Subjects at
the depôt.

Persons, acquainted with the business of the British army, do not require to be informed, that the troops assembled at the depôt, in the Isle of Wight, were either recruits of regiments on foreign service, or persons who had returned from foreign service, unfit for military duty, on account of old age or bodily infirmity. They were thus mostly young and unexperienced, or they were old and diseased. The mass however consisted of recruits ; a considerable portion from Ireland,—part of them a levy, raised by contract in that country.

Convey-
ance.

The English recruits commonly travelled to the depôt by land ; and they ordinarily arrived in good health. The Scotch recruits were frequently conveyed the whole, or greater part of the way, by water, usually in coasting vessels. They were also healthy at the time of their arrival ; for they were rarely exposed to fatigue on the passage ; and the vessels not being troop-ships, were not unwholesome, or infected with the seeds of contagious disease. The Irish recruits consisted of two classes. The one, of persons recruited for established regiments, who were examined and approved in Ireland ; the other, of recruits

recruits of the levy by contract, who were not officially examined and approved till after arrival at the depôt. The persons, recruited for regiments in the common manner, were collected at Geneva barracks, and from thence conveyed to England, directly to the depôt, in government transports. They generally brought with them a contagious fever, either in activity at the time of arrival, or latent in their persons or their clothes. Whether the offspring of Geneva barracks, or caught in an infected ship in the voyage, does not particularly concern the present subject: the fact is positive, that few detachments came to the depôt, unless where the passage had been very short, altogether free from sickness. In some detachments the sickness was considerable; and generally in less than two weeks from the time of landing, upwards of one third of the whole entered into the hospital,—ill of fever,—the fever of the kind common in jails, crowded and foul ships. The recruits of the levy by contract, not being conveyed to the depôt in unwholesome vessels did not suffer from causes of contagion; but they suffered from hardships of another kind. Landed at the nearest port in England, they were again embarked in public conveyances, and hurried to their place of destination, without respite. They suffered more from sickness than the English or Scotch recruits;—and cold, fatigue and watching appeared to be the pre-disposing causes of their maladies.

Change of
place.

But whatever might have been the circumstances of the different classes of recruits, previous to arrival at the depôt in the Isle of Wight, a change of air and climate was now common to all. To the Irish, and to the Scotch recruit, the change was considerable. The effects of such changes are generally perceptible in the young and tender subject. It is vulgarly known that indisposition, in a greater or lesser degree, is a common consequence of simple change of place ; but besides change of place, there was here change of diet, and change of manner of living. New impressions were also made upon the mind ; for the recruit, on his arrival at the depôt, necessarily considered his lot as fixed for life. Separated from friends, and destined perhaps for a foreign country, temporary chagrin could scarcely fail to be a consequence ; and chagrin, if not a cause of disease in itself, is known to give force to the operation of morbid causes. The above causes are common to the condition of recruits. They may be expected at all times, and under all circumstances, to have effects upon health ; but the situation of the soldier at the depôt, in the latter end of the year 1801, was peculiar, and exposed to a mass of mischiefs rarely combined together.

Situation
of the bar-
racks.

The barracks of the army depôt are placed upon an unsheltered common, called Parkhurst Forest, on ground of sufficient declivity to give current to water ; but of a soil, to the depth of a foot or a foot and a half, of a loose and spongy texture,

texture, which imbibes moisture greedily, and which retains it obstinately; for it vanishes only by the exhaling power of the sun. The compactness of the clay below does not permit to it a downward course; and consequently it is not carried off by the operation of draining. The surface of the forest, in the barrack inclosure, in the year 1801, was broken up; the soil necessarily exposed, by the different works, the levellings and buildings, which were carrying on. In wet weather, unless streets and parade, the whole was mire; many parts of the environs were bog, and scarcely passable: the parade was only forming: the principal streets were indeed formed, covered with chalk and gravel; but they were not paved; and in wet weather they were still so wet, that shoes of common manufacture were not sufficient to defend the feet from damp.

The structure of the barracks is of a slight nature, called temporary; viz. board with weather tiling;—of one story; the floor nearly on a level with the ground; the lower parts of the walls contracting a covering of moss, and the wooden part, near the ground, tending rapidly to decay;—an effect, which proves that there is excess of moisture in the soil. In arrangement, the interior was divided into a messing apartment, resembling a tap-room or coffee-room; a sleeping room, fitted up with a double tier of berths, like platforms in a transport ship. In the sleeping rooms there was no place for fire; the

Construc-
tion and
division.

the rooms were crowded, to the utmost extent of crowding. From condensed breath, excessive damp, and defective ventilation, the walls in the mornings were covered with moisture, which trickled down their sides in small streams;—the hours allotted to sleep thus may be said to have been spent in a steam bath. Further, the fireplaces in the messing apartments were not advantageously placed for the diffusion of heat; and the allowance of fuel was too scanty, to furnish fires of sufficient power, to correct excessive dampness of air. There were no piazzas, or covered communications between the different barracks, or between the messing and sleeping rooms of the same barracks; and no covered place for parade or exercise.—Such were the circumstances of the barrack accommodation in the year 1801. It may also be noticed, though it did not appear to make much alteration in the circumstances of the case, that a part of the garrison,—about four hundred men, was obliged, from want of room, to be under canvas till late in October. During the month of October, November, and a great part of December, the weather was so uncommonly wet, that few days passed over without either heavy rains or drizzling fogs.

It is evident from what has been stated above, that, in wet weather, the soldier could scarcely avoid getting wet; and when wet, that he had not the command of adequate means to make himself dry. If he entered into his apartments in this condition, steam and damp were spread
around

around him ; and as this must necessarily happen often, the atmosphere of the messing rooms by day, and of the sleeping rooms by night, was loaded with moisture,—the exhalation of wet clothing. The sleeping apartments, it was observed, were crowded ;—they were in fact as much crowded as the 'tween decks of a transport ship ; and the effects upon health may be supposed to have been similar. There was here the wet of encampments, and the impure air of crowded quarters, or crowded ships. These causes therefore, whatever their effects may be, were in activity from October till January, when the weather changed, and the condition of the barrack rooms was improved*.

It was observed above that the mass of persons, at the army depôt, consisted of recruits,—most of them were young,—many of them were boys. It is a well known observation, and requires no comment or explanation, that youth is more susceptible of the action of causes which derange health than mature age, particularly than persons of mature age, who are accustomed

* It is to be remarked, that the accommodation in barracks has been greatly improved since the latter end of the year 1801. Instead of platforms in two tier, moveable bedsteads are now placed in the sleeping rooms, which are also provided with fire places ; and an additional allowance of fuel is granted according to occasion. The parade is finished ; the environ is undergoing great improvement, and measures are taking to render the whole as comfortable, as a boggy soil, and the original design of a temporary barrack will admit.

to changes of climate, and inured to military service. The conditions, under which the recruits were subjected to live in the barracks on Parkhurst Forest, have been noticed ; some of the probable causes of sickness have been exposed ; and it is presumed, that those, who are acquainted with military history, will not fail to perceive a resemblance here, and in the circumstances of a protracted campaign ; for the accommodation was similar, literally a weather-proof encampment. The proportion, which the sick bore to those who were not sick, was high,—nearly one in four, during October, November and December. Where the proportion of the sick is high, the character of the disease is often strongly marked,—dangerous and sometimes malignant ; but as the diseases were numerous and often malignant, so they were various in kind, originating in a variety of causes.

Variety
and cha-
racter of
disease.

In the class of those which are more particularly the product of season and local circumstances, is ranked the bilious remitting or gastric fever. It is the form of the autumnal season, commonly accompanied with affection of the alimentary canal, with diarrhoea, with dysentery ; in the present season recurring in its relapses with a gangrenous affection of the intestines : at a later period appeared pneumonic inflammations. But besides these, which are the product of season and of common causes variously modified, which appear at periods, and which decline or cease at stated times, the jail or ship fever,

fever, of a character particularly aggravated, was imported from Ireland, in September and October. A scarlet fever also made its appearance in September, accompanied frequently with an ulcerated fore throat. Small pox and measles had prevailed in the garrison from the beginning of the year. The small pox still continued, though in a lesser degree; the measles were now highly epidemic, complicated, and of a malignant and mortal nature.

The proportion of sick at Parkhurst barracks Hospitals. is stated to have been high. During the last three months of the year, the number in the sick list in hospital and in barracks, was rarely under six hundred; the number of troops, immediately at the depôt, was considerably under three thousand. The means, provided for the accomodation of this numerous list of sick, were by no means adequate. A building on the Medina river, originally a mill, converted temporarily into an hospital, was set apart for the reception of surgical patients. It was sufficiently capacious in extent; and, in other respects, as a temporary hospital, was not objectionable. A building, near the barracks on Parkhurst Forest, erected for the express purpose of a barrack hospital, was allotted for the reception of the acute and serious cases of disease. This consisted of six large wards, each calculated to accomodate twenty persons; of four rooms for nurses, each capable of containing two patients. Thus the whole

whole extent of the hospital, after allotting the rooms intended for nurses to the reception of sick, furnished accomodation for no more than one hundred and twenty-eight persons. The list of sick, subjects for this hospital, (for the surgical patients were otherwise disposed of,) usually amounted to three hundred or upwards. It may thence be inferred, that no persons were, or could be received into it, but such as were dangerously ill; and consequently that its interior presented a picture of diseases, only in their more aggravated forms.

The want of hospital accomodation, is, in all cases, a serious evil. If it be not provided in every case, in extent sufficient to receive the whole of the sick, the eye is offended and the feelings of humanity are hurt; but farther, if it be not provided in quantity to exceed by one third, what appears to be the exact measure of the wants, there is not full justice given to the chances of recovery; for unless there be means of evacuating at intervals, and purifying in succession the sick apartments, the air becomes contaminated; and under contaminated air, the progress towards health is slow, and the effect is uncertain. To supply the excessive defect of hospital accomodation alluded to in this place, hospital tents were resorted to in good weather; in winter, a barrack room was fitted up for the most advanced class of convalescents; yet with all these extra means of relief, there
were

were still within the walls of Parkhurst hospital near double the number of sick which it was properly calculated to contain.

The situation of the barracks and qualities of the soil have been noticed. The situation of the hospital is lower than that of the barracks. It is placed in a bottom; and the soil, though of a similar nature with the other, has, as might be supposed, still more of the bog. The water, which enters into the earth on the high ground in seams of sand or gravel, not finding a course onwards through the bottom, where the hospital stands, seems to rise up where it finds least resistance and shews itself in blind springs, in various places within the hospital inclosure. The rapid growth of moss on the tiles, and the rapid decay of the wooden parts of the building, which touch the ground or are near it, prove incontrovertibly, that there is excess of moisture in the soil; which, not being permitted to descend through the clay, rises up in exhalation, and loads the atmosphere with damp.

Such are the qualities of the site of Parkhurst hospital. It is not intended to point out, at length, the errors which obtain in the mode of construction; for though it would not be difficult to suggest improvement, it would require more detail than this statement admits. The size of the wards, and the position of the fireplaces are points which strike as being the most objectionable. The wards are calculated for twenty persons. Considered as wards, allotted for the
reception

reception of acute disease the size is beyond the proper bounds ; for the nurse, when placed by the fireplace, even in the centre of the room, is not capable of commanding with her eye, in a correct manner, the whole extent of her charge ; a point which appears to be the true one to determine the size of sick apartments. In a ward, calculated for twelve patients, the attendant may be so placed as to possess this command ; and on that account, a ward for twelve is preferable. The fireplace is in the side of the ward,—in the centre ; but it does not project, and the heat is not diffused to the remote parts,—not even into the body of the room. To remedy this defect, two open fire stoves were directed to be placed in the middle of the floor, at some distance from each other, facing outwards. They produced a desirable change in the temperature and other qualities of the air ; but, though the requisition was made before the cold weather began, it was nearly past, before the work was executed. To remedy the other inconvenience, it was proposed to divide some of the wards into two, for the better accommodation and separation of the different classes of acute disease ; but the measure was not practicable under so great a pressure of sickness as then prevailed*.

Under

* The qualities of soil and situation deserve to be examined and considered, in all their relations, respecting health and convenience, previous to the erection of hospitals.

Under pressure of sickness, and with the deficient means of accommodation which have been described, it is evident, that an arrangement of a very correct and active nature became necessary to keep the machine in regular movement. To class sick persons in hospitals, according to the character

Classing of
sick in
wards.

pitals. It is generally understood, that the site ought to be dry in itself, or capable of being made dry by draining; that the position be sheltered from the more piercing winds of particular quarters; and that water,—running or spring water, be abundant and at command. An hospital is thus supposed to possess shelter, and facility of having its wants supplied from position; it must possess ventilation, another essential property, from manner of construction. It does not appear, that these points have been duly regarded in directing a choice of position, or in forming a plan of construction for the hospitals in England. The hospital at Chatham, which is the last constructed of the military hospitals, and consequently the one, in the design and construction of which, it naturally will be supposed, all the lights of science and experience have been employed, depends for water on a deep well. It is placed on the crown of an eminence, ostensibly for the benefit of pure air; and it is thrown into the form of the letter Π , as is pretended by the medical authorities, for the sake of shelter, that is, of sheltering itself. The wards are of large dimensions, lofty and long; the windows reach near to the ceiling; but they do not come down to the floor by near six feet, or the height of a tall man. The inversion is singular, appearing as if the ward were literally turned upside down. Light is admitted into the hospital plentifully, for the windows are numerous and large; but no external object can be seen; and in this respect, the patient is positively in a dungeon, without the power of relieving his eye by any other prospect, except that of a sick or dying comrade. In respect to ventilation he is in the same cir-

F

cumstances

characters of diseases strikes the common sense of every man. The idea is not new; but it has seldom been duly followed up in practice. It is frequently attended to in military hospitals, as far as concerns the separation of medical and surgical cases; but the classification, which was adopted

cumstances as if he were in a cellar, six feet under ground; for he is surrounded on every side by a continued wall, six feet high. The means employed in ventilation; viz. air holes, or the depression of the upper part of the windows are not well contrived for the purpose; for air, supposed to be impregnated with contagion, is not specifically light. It only ascends, as rarified by the impulse of artificial heat. If it therefore meet with a cooling cause at the air hole, or window which is opened near the ceiling, it is necessarily condensed; and some part of it may, at least, be supposed to return from whence it came, to the lower atmosphere of the sick apartment. That such means of ventilation are not only nugatory, but deceptive, is evident. They suffer heated air to escape, and suffer cool air to enter; but this cannot be considered as a ventilation, which purifies that which is contaminated,—the ventilation which is required for hospitals. It is only by a volume of air, entering at the level of the floor, and sweeping the whole extent of the apartment, that the atmosphere of a sick ward is expected to be perfectly changed and purified. This may be called ventilation, and this will be attained by making the windows of hospitals in the Venetian form. The measure will be particularly beneficial in wards allotted for the reception of contagious fevers; for it will then be possible to renew the air completely, by throwing open the windows, in such manner that the sick remain, as long as may be judged proper, in a pure atmosphere, as if they were simply under a roof, or in an open balcony. It is scarcely necessary to mention, that the lower part of the windows must be guarded by a moveable board, both to pre-

adopted in the hospitals at the depôt, was probably never attempted before,—never correctly at least in the hospitals of the British army.

The diseases which appeared at Parkhurst barracks, in the latter end of the year 1801, were various; and they required to be placed in separate apartments, for the nature of some of them was

vent their being broken, and to prevent the entrance of partial streams of air, through crevices or loose joinings of the sash. The proposed form of window will give the power of ventilating hospitals, in a complete and perfect manner, in fine weather; but when the weather is wet, the air foggy and damp, this purpose can only be effected by the proper management of fire. The subject requires to be well considered in the construction of hospitals, for it is important. The matter ought to be so contrived, that there exist a power of raising the temperature of the wards to that of a tropical climate. It is known to those, who have taken the trouble to observe, that alternations of warm and cool air act with considerable effect upon an animal body, whether in health or under disease; and on this account, the application of heat or cold forms a material part of medical means; but independently of the medical effect, the artificial heat of fire forces a movement in the air, changes its qualities, and most effectually promotes ventilation in sick apartments. The position of fire-places in sick wards ought, therefore, to be well considered; and the fuel, which gives out the most brisk and sudden heat, ought to be employed in preference.—With regard to the dimensions of sick wards, it may be observed, that the height of the ceiling ought not to be less than twelve feet,—that the wards may be of three classes:—viz. one of twelve beds for acute disease; one of twenty-five for chronic patients or convalescents; and one of two, for those who are extremely weak, or extremely ill.

highly contagious. The fever of the recruits from Ireland, the measles, the scarlet fever and ulcerated sore throat were necessarily to be kept apart from the others, and to be separated among themselves. The common diseases, where the marks of contagion were less obvious, were placed in the same apartment—from necessity; for the means of accommodation were not sufficient to admit of allotting separate apartments for each class. The means were circumscribed, but such as were under command were in constant activity. The different diseases were separated and classed, according to their characters in the first arrangement; and the principle of the rule was adhered to, as much as circumstances would permit, in the after progress. For patients were not only placed originally in wards, according to the nature of the malady; but they were again separated, according to changes in its circumstances, and classed, in their new apartments, according to the relative progress in recovery, or tendency towards death, so as to preserve an uniformity of condition throughout, whether of actual disease, or of recovery from disease. There were thus apartments, allotted for the early and acute stage of fever for the convalescent stage; and for cases of great danger, threatening speedy death; or of great weakness, requiring unusual care of nursing.—But as the plan is new, and may not, perhaps, be easily comprehended by those who have not seen
trial

trial made of it, a more minute detail may be thought necessary.—The practice is easy, and the advantages are many.

It is a fact, not unknown to physicians, that the act of moving sick persons from one apartment to another, particularly in certain stages of recovery, accelerates recovery and tends very remarkably to establish health. This principle was acted upon systematically at the hospital of the depôt: and it was, perhaps, principally owing to the operation of this principle, that, under such pressure of sickness, and such deficiency of means, as obtained for upwards of three months, the movement was not interrupted,—comparatively but little embarrassed.

At the morning visit of the apartments, in which were collected persons in the first stage of acute disease, such patients, as shewed signs of recovery, that is, perfect termination of fever, return of appetite, return of strength, so as to be able to sit up the whole, or the greater part of the day, were selected, and ordered to move on to the first series of convalescent wards; where they were furnished with clean clothing, and admitted to a higher scale of diet,—termed half diet. After continuing in the half-diet ward for some time, in a regular progress of recovery, they again moved on, were furnished with clean apparel, admitted into the full-diet ward, and remained under this regimen till the usual periods of relapse were past, till health appeared to be established, and strength regained,

sufficient to execute a soldier's duty. This is the order of movement, which was preserved in the progress through the hospital, from the time of admission, till the return to the barracks, unless in case of relapse, or on the occurrence of symptoms which threatened unusual danger, or which were accompanied with great weakness. In case of relapse, the patient retraced his steps to his former apartment, or was placed in another apartment, which better suited his condition,—for relapse does not always assume the form of the original disease. In case of symptoms which threatened extreme danger, or in case of extreme weakness, which required unremitting care in nursing, he was removed to a small ward, calculated for two persons, to which a careful nurse was attached, assisted occasionally, in night duty, by an orderly from a convalescent ward. By this arrangement the weak were carefully attended to, for they were constantly under the nurse's eye; and objects, the sight of whom annoyed others, or who, weak and irritable, were themselves annoyed by the presence of others, were removed from the general mass, and suffered to repose in quiet.

Besides the benefit derived to health from change of apartment and change of apparel, from impulse, given to the mind, as connected with the idea of leaving a sick ward, and moving onwards in recovery, the advantages of the arrangement are conspicuous in every part of hospital administration. The whole business is simplified

plified and rendered effective by it. The general diet for every person, in the same apartment, is the same; the diseases are similar, and the treatment has necessarily a great resemblance; the nurses and attendants, who have constant practice in one particular form of duty, acquire intelligence and become expert in execution. Even economy, though not in the original view, becomes an effect of the arrangement; for, an opportunity is hereby furnished of doubling the assistance of nurses and attendants for those who require assistance, and yet of diminishing the general number of servants in an inverse proportion,—allotting the attendance according to the wants,—little to the strong, a great deal to the weak and helpless.

Such was the rule, which guided the classing of the sick in hospital at the time of admission, and which influenced it in the after progress during recovery. It next follows to notice the equipment of the wards in furniture, necessaries and utensils, so that a view of the management may be obtained in all its parts. The beds in Parkhurst hospital were all of the same kind,—equipped after the same manner, except in some few instances, where circumstances rendered change or addition necessary. The bedstead of iron painted; the bottom, sacking laced upon the frame; the palliass and bolster coarse dowls, filled with straw; the sheets strong linen, well washed and mangled; the blankets and rugs clean (not ragged or torn); two blankets

Equipment.

and a rug for summer; an additional blanket in winter; and in the small wards, where patients were weak, sensible of cold, and reduced in flesh, there was added a flock mattress, or whatever other covering was thought to be necessary. This is the manner in which a bed was equipped in the *depôt* hospital;—the addition of a hair pillow, covered with Spanish leather, would have made it complete.

The clothing and personal necessities were not precisely the same in all the wards. They were varied, according to the circumstances of the patient,—as sick or convalescent. In the wards, where disease was in its acute stage, the clothing and personal necessities consisted of a linen shirt, well washed and mangled, a woollen night-cap, a gown or robe-de-chambre of white cloth, with snow-shoes, as slippers. Into this ward no part of the soldiers' apparel was permitted to enter. The equipment was sufficient for his purposes, while he was in the acute stage of disease; but the woollen gown, in the opinion of the author, might have been exchanged with advantage, at least in the summer season, for a robe-de-chambre of striped cotton cloth. A cotton night-cap will, at all times, be more comfortable to a person ill of fever, than a woollen one, and though dearer, at the first cost, will probably be more economical in the end, as it will last longer. In the second class of wards, occupied by the first order of convalescent men, who are upon half diet, the clothing and personal

sonal necessities consisted of a shirt and night-cap, a gown, pantaloons and jacket of white cloth, shoes and stockings,—personal property, taken from the patient's knapsack, which is lodged in the pack-store at the time of his admission into the hospital. Nothing appeared in this place, belonging to the soldier, except the shoes and stockings. The clothing and personal necessities in the full-diet wards, for the more advanced class of convalescent men, were the same as in the last, only when this class of convalescents was removed to a convalescent barrack, their own clothing was delivered to them with the addition of an hospital gown, to serve the purpose of a great coat. The surgical patients were provided with a night-cap, a jacket and pantaloons of blue, red, or grey cloth. They used their own linen, for in their cases linen required only to be changed on stated days of the week. The patients in the small wards, in chronic disease, weak and reduced in flesh, were furnished with flannel shirts, flannel socks, slippers, or whatever else could appear to contribute to their comfort, or to aid in their recovery*.

The above is the kind and quantity of equipment allotted to the hospitals of the depôt in bedding, clothing and personal necessities. The utensils, for the particular uses of the sick, or

* Besides the sick in hospital, there are generally a considerable number of persons under cure of itch. The bedding and clothing, when they become bare or ragged, are set apart for their use. They are destroyed when they become so filthy as to be no longer useful.

for the general purposes of the economical administration, are next to be noticed. On this head there ought to be neither deficiency nor superfluity. There are certain necessary things, which a sick man ought, at all times, to be able to command by his own effort, viz. a vessel with drink, a chamber pot and slippers. To provide for this object, and to preserve an appearance of order and propriety in the wards, a small table, or stand, was placed by each bed, or between two beds, on which was a drinking cup, with suitable drink; on the shelves below, were the chamber pot and slippers:—the drinking cups are of tin; the chamber pots of pewter. Buckets are a necessary utensil in sick wards, for the purposes of the sick; the number allotted corresponds with the probable wants;—they are of brass. Bowls or basons, spoons, plates, knives and forks are necessary implements in messing. In British hospitals the bowls, spoons and platters are of wood. The material is not the most suitable for the purpose; and, though cheap in the first cost, it is not perhaps economical, for it is liable to split,—a destruction, for which servants cannot be made responsible. Spoons of horn, or block tin, porringers and plates of earthen-ware might be substituted with advantage. The appearance is better, and the expence to the public would probably be less, for there is little damage from wear, and no destruction, but from carelessness, for which servants and persons in a state of recovery may be made accountable.

accountable. In the wards of acute disease, besides vessels replenished at regular hours with suitable drinks, there must be a tea-kettle, a teapot, tea-spoons, and pint basons. There is also required for each ward every kind of implement necessary for purification, whether of the persons of the sick, as water-basons, towels, sponges, combs and combing trays, or of the apartments themselves, as mops, brooms and scrubbing-brushes; so that there always be at hand every requisite means for removing a common or a personal nuisance.

It is self-evident and requires no proof, that the arrangement of diet is a matter of great importance in hospitals, whether as relating to the good and comfort of the sick, or to the expenditure of public money. If it could be proved, that even the costly wines of Tokay would contribute to save a soldier's life, or demonstrably accelerate his recovery, the British nation, which is humane as it is liberal, would not hesitate to sanction the prescription, notwithstanding it were expensive. But it happens fortunately, and it is a wise provision of the Deity, that the preservation of life and the recovery of health depend, but rarely upon means which are costly and difficult to be procured. The means are common the effect rests upon the right application of them. In laying the basis of an economical system, profusion and penury are to be equally avoided; an object, which can only be

Diet.

ensured by a correct knowledge of the subject in all its relations. It is here supposed that nothing useful is wanting, whatever be the amount of the expence, for if there be want, there is no economy; at the same time, nothing superfluous is provided, for if superfluous, it is wasted, or, what is worse, it is misapplied. The matter must therefore be so contrived, that even an ounce of beef or bread be not drawn at an hospital without a specific cause; as when drawn, it is an object of economical administration that it be religiously applied to its purposes. With this rule in view was formed the diet table for the hospital of the army depôt, in the Isle of Wight. It deviates in some points from the established diet tables of other British military hospitals.

It is usual to consider sick persons in hospital, as under three general conditions, requiring three different modifications of diet. There is an acute stage of disease, in which solid food has no place. The form of diet, designed for this class, is termed low. In the first stage of convalescence, where actual disease has ceased, where appetite has returned, and where it may be indulged to a certain extent, a measure of diet is allowed, suitable in quality to the condition, and corresponding in quantity to the wants of the subject, termed half diet. In the more advanced progress of recovery, where the functions of health are restored, and where strength only is wanting, the measure is somewhat

what increased, and is then termed full diet, or the highest gradation allowed in hospitals. These are general scales of diet for the different classes of sick or recovering men in hospital; but as there often occur circumstances, which call for nourishment or refreshments, not to be expressed in a general table, which embraces only what is common to all, the defect is supplied by tables for extra allowances. At the hospital of the dépôt these were printed upon cards, with separate columns for the various articles which were likely to be wanted.—One of them belonged to each ward. Farther; there frequently are found in hospitals persons ill of chronic diseases, the cure of which requires a form of diet, not easily comprehended in a general rule. To supply the defect, without giving rise to confusion, the tables for extra are found to be sufficient. The chronic list of patients stand upon the low scale of diet in the general arrangement; the refreshments, of whatever kind they may be, appear as an addition in the table of extra allowance.

Such is the general outline of division of diet. It remains to explain its nature in quantity and quality, as adapted to the different classes of sick or recovering men. But in order to be able to execute this upon sound principles, it is necessary to be well acquainted with sick persons in all conditions of sickness, to know what they relish, and to observe what they dislike. There often is caprice in the appetite of sick men; and there
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are individuals, who have particular and habitual dislikes, not to be overcome by any effort; circumstances which make it difficult to contrive a general form of diet, which promises to be agreeable to every one. It rarely happens that there is a desire for solid food in the acute stages of disease. A full, or even a half ration of beef and bread, as it cannot be consumed, so it turns out to be a nuisance in the sick ward of an hospital. Even gruels, barley, rice and oatmeal are seldom acceptable. Tea, beef tea—or bouillon, when well prepared, are relished by most persons; they are, for the most part, favourable to the operation of the remedies, which are administered at this period of illness, and, with a greater or lesser portion of bread, are ordinarily sufficient, in point of nourishment, during the continuance of the acute stage of fever, or other acute disease. The low diet of the hospital of the dépôt was formed in this view; as is seen in the table annexed*. When disease ceases, appetite returns; but appetite, in such cases, is often beyond the bounds of what is proper, and a full meal is often followed by injury, that is, indigestion,—even relapse. The quantity of diet, allowed to persons in this stage of convalescence, appears also in the table annexed. The full diet, as explained in the same table, is of a similar kind with the half diet, only somewhat fuller in quantity, as the diet of

* No. I. A.

persons farther advanced in recovery, and obliged to take exercise in the open air, when the weather permits.

To this general basis of diet, it is in the power of the physician or surgeon, intrusted with the care of sick, to add in the extra table*, whatever farther nourishment or refreshment the case of any individual may require, whether of beef, bread, milk, potatoes, rice, flour, sago, flummery, arrow root, fruit, confitures and liquors.—The diet tables express the regular quantity for each class of patients,—the extra tables furnish a discretionary power for making addition.

The tables annexed express the kind and quantity of diet which was allowed to the different classes of sick or recovering men, in the hospitals of the depôt,—the quality, it may be added, was without fault. The tea, fouchong, such as respectable persons use in their families; the milk from the cow, without adulteration; the bread of the best flour, made by a foreign baker (unquestionably the best bread made in the island); the beef and mutton good and wholesome; the broth well prepared,—made with barley, roots and herbs,—favoury and palatable. If rice-milk was disliked,—and the dislike is not uncommon among English soldiers, oatmeal was substituted in its place. In short, every thing was good in its kind; but there was not much variety in cooking, for the kitchen was not cal-

* No. I. C.

culated to admit of any thing farther than an apple-dumpling, a fritter, or a beef-steak.

Distribution
of diet.

The diet, adopted in the hospitals of the depôt, does not exactly correspond, in kind and quantity, with that established for other military hospitals in Britain. The manner of distribution is also changed. It appears to be the custom, in most hospitals, to divide the mess in the cooking place, from which it is sent into the wards in separate portions. The beef and potatoes, where potatoes make a part of the ration, are, in this case, neither hot nor cold. They are less relished on that account, and probably less light in the stomach. In a surgical, or in a convalescent hospital, the evil of this practice may not be so conspicuous; for the whole is likely to disappear, or to be disposed of among the mass, in one manner or other; but if a fixed portion be allotted to persons in the acute stage of disease, and not consumed by them, (and it cannot be consumed where there is no health and no appetite,) the disposable part (the beef and bread) is put under the pillow, in reserve for another time. This is no unusual occurrence, and it is no unnatural effect; for there is a covetousness, that is, a desire to acquire, and an unwillingness to give away, which sticks close to human nature, and which is often the last faculty of what is called reason, which a sick soldier exercises. He thus hoards with avidity what he cannot use; and he reluctantly parts with what he considers to be his property, after it has become

become a nuisance. In the hospital of the depôt this evil had no place; for the distribution was made, not according to supposed, but according to actual wants. The diet of the acute wards was prepared separately in its own vessels, and after its own rule. The bouillon was in readiness, in the wards, at a certain hour; and it was distributed at the times which best suited with the condition of the patient. The soup or broth of the convalescent wards was prepared in one boiler, at least according to one rule. The quantity of meat, allotted to each ward, was calculated previous to dressing, and put into the boiler separately, with a tally affixed. When dressed, it was carried into the ward in the mass, and divided by the steward or ward-master at the messing table. The dinner, by this means, was served while hot and in season; and an opportunity was thereby furnished to every one of witnessing that the regulated allowance was fairly divided.

It probably may be thought, that the subject of diet is detailed with a tedious minuteness, and still that the matter is not clear. In trial, the arrangement was found to be correct, and liable to no embarrassment, but it is not pretended that it is well explained; for it is often less difficult with the author to do, than to explain intelligibly what is to be done. It is however evident, that there can be no correct economy, and no exact order in matter of diet, unless a diet table be formed a-new every day, for the

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condition

condition of an hospital of acute disease is not stationary. To form a diet table daily implies labour and a waste of time; consequently such tables are usually formed but once a week, unless they become so dirty and blotted as to be read with difficulty. In the hospitals of the depôt, the principle adopted in classing the sick and convalescent, produced a new diet table daily without the trouble of writing; while a figure, in the table of extra allowance, was sufficient to mark discretionary additions of whatever kind or extent, without leaving an opening for error or mistake.

Nurses and
orderlies.

The principle which was acted upon in classing the sick, in equipping the hospital, and in arranging the diet, has been explained at some length. The number and quality of nurses and attendants necessary for the care of an hospital of a given number of patients is the next matter to be considered and explained. The number of four hundred sick is assumed, in the present case, as a convenient one; for though it be not precisely the number which was in the hospital of the depôt at any one time in the year 1801, yet it does not much exceed. A round number facilitates calculation, and does not affect the truth of the rule. Having thus assumed a round number, as the strength of the hospital, it is admissible for a similar reason, to assume a proportion among the diseases and the conditions of disease, in the different classes of the sick, which, though not precisely exact, for it varies frequently, is
not,

not, upon the whole, far from the truth. Thus, in an hospital consisting of four hundred persons, it may be supposed that there are one hundred and thirty of what are usually called surgical cases, the majority of which, in times of peace, consists of venereal complaints and ulcers of the legs.—It may also be supposed that, in this class, there are two persons under operations of some consequence. Of the others, which are medical cases, it may be supposed that sixty persons are in the acute stage, of one or other of the different forms of fever,—ten in dangerous circumstances, or in a state of extreme weakness,—the rest in the different stages of convalescence.

In a large ward of acute disease, containing twenty persons, one female nurse with two male orderlies, was the allotted proportion of attendance in the hospital of the army depôt; and it was found to be equal to the duty. In a ward, containing twelve patients, (had such existed,) a female nurse with one male orderly would have been required. In convalescent wards, nurses were not employed; for there was no sickness. One male attendant is sufficient for all the purposes of fifty of this class. His duty is confined to cleaning the apartment, taking care of the utensils, and bringing the victuals from the cooking place, into which no patient is permitted to enter. The convalescents are capable of washing, combing and cleaning their own persons; and it is a point of discipline, that they be obliged to do it. To every hundred convalescents is, or ought to

be, appointed a ward-master, a non-commissioned officer of a firm and steady character, who bears authority, who knows what foldiers are, and what is implied in their duties. His trust is confined to the convalescent wards, for medical officers themselves look directly to economy and discipline in the wards of the sick, and from them only nurses are to receive directions. In surgical wards, female nurses are not employed.—One orderly is equal to the attendance of forty persons of this class; for there are rarely any among them who are not capable of performing common offices for themselves. It is different in hospitals of wounded men;—there the proportion of nurses and orderly attendants cannot be less than that which is allowed in the wards of acute disease. To the small rooms, in which were placed two persons, extremely ill, extremely weak, or under cure after a surgical operation of consequence, one female nurse was allotted, assisted in night duty by an orderly, taken from convalescent or surgical wards, where no night attendance is required.

Such is the proportion of nurses and orderlies, which was judged to be sufficient for the due attendance of the sick of the hospital of the army depôt, and which was found upon trial to be so. The proportion is different in other British military hospitals, viz. one attendant for ten sick persons. According to this rule, an hospital of four hundred sick requires forty nurses or orderlies; according to the plan adopted

adopted at the depôt, twenty-one are sufficient. The diminution is of one half nearly; yet a double proportion of attendants is provided for those who actually are sick and ill; for to seventy persons in the acute stage of disease, or in a state of weakness and danger, thirteen persons were attached. Thus the general means provided for the service, are fewer by one half nearly than the common rule admits, the effect, in the point of application, is nearly doubled.

Besides the nurses and attendants of the sick, another class of servants is required in the economical administration of hospitals, who must be qualified for the duty, and in number proportioned exactly to the ends. The servants of the kitchen stand among the first. In an hospital consisting of four hundred persons, there must be two male cooks, for the great mess—the provisions of the convalescent and surgical patients; one female cook, a person who has some taste and skill in preparing nice things,—the refreshments of the wards of acute disease. She must know how to make beef tea and bouillon in the best manner, tarts, puddings, jellies and all manner of drinks. The making of tea is known to every one; and in order that tea be always at hand, it was directed to be made in the wards by the nurses. For the great work of washing and drying,—a very important part of hospital administration, six washers are the smallest possible number admissible. If diligent and properly furnished with every convenience,

Servants of
economical
administra-
tion.

they are equal to the task; but they must be subjects of the better class and well experienced; viz. two women for washing linen,—sheets and shirts; four men,—two for washing bedding and clothing, and two for drying and mangling. The inspection of this was placed under an intelligent person, as steward of the linen and clothing in present use. She is supposed to know something of figures, so as to be able to keep an account of her charge. A sempstress for repairing linen, and a taylor for repairing clothing, act under her orders. The purification of the person is one of the first processes in the treatment of the sick; and bathing, hot or cold, was often resorted to in the after progress of the disease, at the hospital of the dépôt. Baths were therefore in readiness at all times. The office of providing them was committed to a careful and intelligent person styled superintendant of the bath. It is necessary in economy, indispensable to the propriety of appearance, and connected with the safety of the health of an army, that soldiers be not permitted to carry with them into the sick wards any part of their own apparel. The appointment, therefore, of a person, who may be called keeper of packs, to take an account of the sick soldiers' clothing, to destroy what is bad, to give to be washed what is dirty, to arrange in order what remains, to label it, to place it regimentally in the pack-store, to restore it when wanted, responsible, in the mean time, that there be no irregular loss,

is an office, which cannot be dispensed with in a large hospital. It were better that this keeper of packs be a non-commissioned officer. He must at all events be a correct and accurate man. In addition to the duty now mentioned, the keeper of packs may be employed to conduct the sick from the barracks to the hospital for admission; after dismissal to re-conduct them to the barracks, to deliver them over to the adjutant or serjeant-major, and obtain a quittance, that no loss of necessaries or clothing has been sustained during sickness.

The business of an hospital, of four hundred persons, particularly if it has an active movement, implies a considerable share of writing, sufficient to employ a diligent clerk. There is for instance; 1st, A register of all the persons who enter the hospital, viz. name, regiment, disease, date of admission, date of dismissal, or of death; 2d, A ticket, placed at the head of each person's bed, marking the name, regiment, disease, date of admission; 3d, A ticket of dismissal, marking the date of admission and discharge, as a voucher to ascertain the number of days, for which the soldier is liable to hospital stoppage; 4th, Ticket, marking the date of death, sent to the general's office; 5th, Morning report; 6th, Weekly state; 7th, Monthly returns,—in two forms,—one medical, the other military, marking the regimental movement; 8th, Monthly return of the medical staff; 9th, Weekly returns of admissions, for the use of the

war-office and pay-office ; 10th, Weekly returns of dismissal for the same ; 11th, Weekly returns of fuel and candles, according to the form prescribed by the barrack-office ; 12th, Weekly abstracts of receipt and expenditure of provisions ; 13th, Weekly abstract of money account ; 14th, Weekly pay-bill of servants' wages ; 15th, Monthly return of hospital stores, clothing, utensils, &c. The whole of this writing was performed by one person ; and though three copies of each paper were required, the labour was not oppressive, but the time was fully occupied.

A steward, in an hospital of the extent stated, holds an office of some trust, and of considerable labour : he requires to be active and diligent. It belongs to his duty to make out the provision returns, according to the form annexed* ; to keep an account of expenditure, authorized by general and extra diet tables ; to submit the account of expenditure for examination, at the stated periods, supported by authenticated vouchers, viz. the verified provision returns, and the certified tables of extra allowance ; to apportion the diet for the different wards, according to the different rules of diet ; to divide the meat of each ward, and to affix a tally to it, previous to its being sent to be dressed ; and to see it divided fairly and correctly after it is dressed. He is further employed to provide the small articles, which are occasionally wanted in

* Table II, B.

the hospital, bringing with him, at the time of weekly settlement, the authorities, the bills of parcels and receipts of payment, in order that he may be entitled to reimbursement of what he has paid on the account of the sick. This is a duty which nominally belongs to purveyors; but has often been done, and may always be done by a person without a commission.—To the steward of an hospital must be attached a strong, honest and intelligent person, as porter or assistant.

According to the above calculation, the number of persons, employed in the economical administration of an hospital of four hundred persons, amounts to sixteen. Every one of this number must necessarily be fully employed; but the work to be performed does not exceed the quantity of the means allotted, if the requisite qualifications be found in every one, that is, bodily strength, and knowledge of the nature of the duties. This was proved at the hospital of the army depôt.

The economical administration of hospitals is placed under the immediate direction of purveyors; but when the depôt was removed from Chatham to the Isle of Wight, it was thought to be advisable, for several reasons, to try to conduct that part of the business without such assistance. The attempt was accordingly made, and it was carried into execution without difficulty, and with very little trouble. The writing was done by the clerk, as stated. One of the

Purveyor.

the assistant surgeons, a person resident in the hospital, and particularly charged with the inspection of its economy, brought together and arranged the accounts for examination. When the accounts were found to be correct, a bill was drawn for the neat amount of the sum wanted; so that every thing was exactly quit at the end of the week, without balance for or against on either side. Quittances in full to a given date were required from all persons to whom money was paid on account of the hospital, as a security against fraudulent demands at a future time.—The purveyor's duty was thus found to be simple and easy. It did not occupy more than three hours one day in the week of the person's time who undertook it. The account of the week, it may be observed, closed on Saturday, the examination and settlement took place the Monday following:—and, as appears in the abstract, the whole business was arranged in such a form, that the expence was precisely known, every expenditure bearing its corresponding voucher, its order of authority, and acknowledgment of acquittance.

Medical
officers and
attendants.

The quantity and kind of assistance, required for the medical duties of an hospital of four hundred persons, whether of commissioned officers, mates, or subordinate servants, is next to be considered. In an hospital of the specified number, it may be supposed, that nearly one third requires surgical treatment. A surgeon and assistant surgeon, with a surgery man, are, it
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is presumed, perfectly equal to this duty. A physician, with two assistant surgeons, or mates, necessarily supposed to be intelligent, zealous and active, is equal to the treatment of the others,—in the supposition, that the sick are classed in the manner which has been shewn, and that certain remedies of common form are always ready prepared, carried round by a dispenser, and administered at the time they are prescribed. To execute the part of preparing and dispensing medicines, an apothecary or assistant surgeon will be required; a person properly qualified and conscientiously diligent, to whom must be attached two intelligent people as dispensers. This apothecary or assistant surgeon, by whatever name he may be called, is supposed to possess some practical skill in chymistry; for, besides superintending the surgery, preparing and having always in readiness remedies of common form, as well as compounding the particular prescriptions, it will be useful that he prepare many of the chymical remedies; and it is essential, that roots, which lose their virtues when reduced to powder, be powdered only according to the expected demand;—for this purpose a stout and intelligent person as a labourer must be attached to the hospital laboratory. The apothecary or assistant surgeon, acting in the above capacity, has in charge the medical stores, and consequently has to give in an account of expenditure monthly, accompanied with a voucher expressing the application, according

to the annexed form *.—To the above persons, deemed necessary for the medical duties of an hospital of four hundred persons, are to be added three barbers,—for common shaving, for shaving the heads of sick men, and for administering glysters; making in the whole, seven servants and seven medical officers, commissioned and warrant; to whom may be added a person for the management of the hospital for men under cure of itch.

Extra duties of medical officers.

Besides the hospital duties of medical officers at the depôt, the labour of examining and prescribing for sick in barracks, for whom there was no better accommodation, was of great extent at one time. For three months, the amount of the morning sick-report, including convalescents who lodged in a barrack room set apart for their reception, frequently exceeded two hundred. This duty was executed by the assistant inspector, or by the head of the hospital, assisted by an hospital mate. But to this labour was added another, which occasioned interruption and occupied time.—Every person who enters the garrison is examined and reported upon, as to the state of health or fitness for duty,—the recruits by the garrison surgeon, the old soldiers by the head of the medical department, who also examines every person who goes from the garrison to foreign service. This is a fixed duty of the depôt; but besides this, it happened, during the pressure of sickness, that every person,

* Table IV.

then

then present, was examined correctly, so as to obtain information of any blemishes actually existing, or of impediments likely to arise in the course of the service to which particular regiments were destined, with a view, that the troops of the line, in matter of health and bodily power, might be so arranged, as to prove upon trial in action an uniform and consistent whole. The blemished and objectionable subjects were noted; and the defects specified in such manner, as to furnish information for a new arrangement of the rejected parts, if such a measure should be deemed necessary; for though less eligible for the line, they were still useful, as being capable of the common duties of a garrison.

The whole of the hospital duty, which was arranged upon one principle, and connected by one bond, was directed to one point of action by a living authority, supposed to be always present, rather than by a written rule or precept, stuck up for observation, but which is apt to be overlooked. It is customary with most persons, intrusted with the direction of hospitals, to write out and make known certain forms of regulation, as standing orders for the general government of their charge. This rule was not followed in the hospitals of the depôt; and there was design in the apparent neglect. For, as it appears that persons are less impressed with what is written than with what is spoken, it was the object in this place, to teach duty by example,—to endeavour to engraft, in the mind of the attendant,

Connexion
of duty.

tendant, a habit of enlightened and correct discipline, to which instruction and confidence were thought to be previous conditions. It is from the spirit of benevolence only, which fills the breast of the nurse or attendant, that attention to the sick can, in all cases, be insured. It is therefore a duty of the medical chief to fan the sparks of affection as they shew themselves, to foster them with care till they assume a good and steady growth. The growth, even among foldiers and foldiers' wives, is not reluctant, if tenderly nursed ; but it does not thrive under harsh and rigorous treatment. The nurses and attendants of the sick, who possess sensibility of heart, are cordially engaged in their duties, by being confidentially treated, so as to be made, in some measure, a part of the medical establishment. If they possess confidence, their benevolence is warmed ; they feel an interest in the fate of their charge, and participate all the anxieties and all the pleasures of the physician. Instead therefore of giving orders in writing, which must always be cold and formal, or permitting matrons, ward-masters and others, who have no knowledge of the condition, and little interest in the fate of the sick, to give directions to nurses and orderlies, a physician, who is supposed to be oftener in his hospital than once or even twice a-day, will find a reward in personally communicating his own wishes ; for he will thereby rarely fail to communicate some share of that interest, which he himself feels. By direct communication
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he has a chance to engage the affections; and there is an evident advantage in engaging the affections, in preference to the practice of operating upon the fears. But besides this, the custom of trusting the discipline of an hospital to verbal communications infuses attention, on the part of the chief himself; for it leaves the whole responsibility chargeable to his account. Neglects and omissions, in such case, are not legally punishable, for no written order has been transgressed. He is therefore bound to guard by vigilance, that error does not arise, for he has neglected to make provision for the legal punishment of it.—Such is the view which influenced the mode of discipline practised with the attendants of the sick, in the hospital of the depôt, in the Isle of Wight in the year 1801.

A full and correct examination of every person in the hospital was made twice a day,—at ten in the morning and at seven in the evening. At these times every individual was carefully examined, whether sick or convalescent. The condition of the patients being ascertained, the changes to be made in the arrangement were determined. The progressive movements were ordered in the mornings; the retrograde, as relapse occurred, and removals to small wards as untoward circumstances arose. But besides these visits at regular hours, the wards, with diseases in the acute stage, were visited frequently, probably not less than six or eight times

Medical
visits.

times a day; remedies of importance were administered, in critical cases, under the eye of the person who prescribed; nor was there any remission of effort, till an object was attained, which placed the subject in safety, or which indicated that remedy was beyond the reach of our limited skill. In the common routine of hospital duty, the patient was examined, the remedy was prescribed and immediately administered, if contained among the common forms; if not among the common forms, it was instantly prepared at the dispensing shop, and given, before time had effected any change in the circumstances of the case, a matter of some consequence in the treatment of diseases, particularly in the treatment of fevers, the state of which is liable to fluctuate. To ensure prompt exhibition of remedies, certain forms, suited to the nature of the prevailing maladies, were previously prepared, carried round by a dispenser, and given under the eye of the prescriber. It was thus known that medicine was administered, and that it was administered at the proper time,—a circumstance which does not always happen where the business is conducted after the common manner.

The author has made an attempt, in the preceding pages, to convey some idea of the manner of conducting the hospital of the army depôt in the Isle of Wight. How far he has done it clearly or intelligibly must be left to others to judge;

judge; but it will serve to illustrate the subject, to trace a patient progressively from the commencement of illness till the return to duty.

The sick in barracks are selected, and reported by the different serjeants of division before the hour of parade. From the sick reports of divisions a general one is formed. The whole mass of sick is collected at the inspection room, and examined; the lighter cases are treated, and dismissed to their quarters; the more serious ones noted to be sent to the hospital; the name, the regiment, and disease are marked in the paper of admission. The patient thus described is conveyed to the reviving or bathing room; his head is there examined and combed; if foul, the hair is cut off, so that the person may be made perfectly clean; if bleeding be necessary, the operation is then performed, for bleeding is often preparatory to other means of cure. This process being finished, he is undressed, washed with warm water and soap, even scrubbed with a hard brush, till the incrusted dirt and impurities are removed from every part of the body. The sensibility of the skin being restored, even the animation preternaturally excited, by the use of the brush and the warm water, cold bathing, or washing with cold water, where judged suitable to the case, is next employed. Some buckets of cold water are poured upon the head and shoulders; or the body is washed all over with cold water, by means of a very large sponge.—This, as being less formidable to timid persons than a

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bucket

Progress
through
the hos-
pital.

bucket of water, and perhaps equally effectual, is generally preferred. The patient, being now completely bathed and perfectly clean in person, is rubbed dry with linen towels, or old sheets, reserved for the purpose on account of economy; particular subjects, after being dried with linen towels, are rubbed, for some time, with warm cloths of flannel. In this state, furnished with a clean night-cap, shirt, gown and slippers, he is carried, by proper servants, to his allotted ward. When placed in bed, the medicines prescribed for him are administered, and the means required in the expected operation are got in readiness. He is again visited in due time, in order to ascertain the effect of the remedy; if the intentions are fulfilled, he is allowed to rest; if not yet fulfilled, or not likely to be so, the remedy is repeated,—modified or changed, in such a manner, that the intended effect shall be secured in proper time. The visits in the acute wards are frequent till matters are in proper train. When the disease has ceased and appetite begins to return, he moves on to the first order of convalescent wards and enters upon half-diet. In the half-diet ward he is visited twice a day; and he is narrowly examined at the usual periods of relapse. If relapse appears to threaten, it is generally turned off by the timely exhibition of an emetic, or other remedy; if it actually does take place, a retrograde movement into a sick ward is necessary. The patients, in the half-diet wards, are allowed to walk out
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when the weather is good ; and in addition to the common diet, there is made such extra allowance of wine, porter or other refreshment, as the case may seem to require. From the half-diet ward he again moves on to full diet, which is the last stage of convalescent progress. He remains here, under such regimen of diet, medicine and exercise, as is thought to be most conducive to health, till recovery is believed to be ensured ; he is then dismissed to barracks, to enter upon duty, after a day or two of indulgence.

It is proper to observe in this place, that the person, who had the medical charge of the sick for the time, whether assistant inspector or head of the hospital, witnessed with his own eye every step and process of important treatment. The operation of bleeding, for instance, was performed in his presence, and the quantity taken away was regulated, not by a pre-determined number of ounces, presumed to be sufficient at the time of prescription, but by effects which arose under the operation ; for as the remedy was prescribed with an object in view, and as that object was believed to be attainable, by a modification of the means, this point was pursued with circumspection, but with firmness, till the purpose was effected. Bathing, in like manner, was not entrusted to the care of servants, however careful ; the process was witnessed, and the effects were judged of by the person who had prescribed the remedy, par-

Duty of attention to the sick.

particularly where the application of the cold washing was to follow that of warm bathing. In this attention to the mode of administration, the great success of practice depends;—for the nature of the human frame is not yet so correctly known, that we can venture to proceed in the cure of diseases by the precise measure of rule. It is necessary to watch the operation of remedies by actual inspection, to estimate effects as they rise, and to conduct the process to the proper point of issue, by cautious but firm experiment. It requires much discernment in many cases to discover the cause, a very correct judgment to measure the means, and even no small degree of knowledge to be able to ascertain that the end is attained.

The detail which has now been given of the medical and economical arrangements of the hospitals of the army depôt will, it is hoped, be sufficient to furnish a correct idea of the management which was adopted at that establishment, as far as concerns the interests of the sick. It remains to estimate the expence, and to explain the causes of the difference, which appears on that head in this, and in the other military hospitals in Britain.

Advantages
of a market
on the spot.

The surgeon-general of the British army is the comptroller of hospital expenditure, and may, perhaps, without impropriety, be considered as purveyor-general or agent for contract; for all requisitions are made to him, and he directs the supply of all transportable articles,

which

which hospitals require. Beef, bread, milk and vegetables are necessarily procured on the spot; the others are ordinarily found in the London market. The hospital of the depôt appears, from its first establishment, to have had a mixed government. Directly under the orders and inspection of the military commandant of the garrison, the communication with the army medical board, or with the surgeon-general, who is the communicating organ of the board, professed a notice of informations for the general purposes of the service, rather than the acknowledgment of immediate controul, which belonged, or was supposed to belong expressly to the general commanding the recruiting establishment. When the depôt was removed from Chatham to the Isle of Wight, in June 1801, the surgeon-general requested, with much politeness, that all supplies, wanted on account of the sick, might be drawn from Gosport. The measure recommended was not convenient; and in considering it fully, and with due information, it did not appear to be economical. It therefore was not complied with. It was presumed that the price of articles of common consumption was nearly on a level in most parts of England; but, that an opinion might not be formed on presumption, pains were taken to ascertain, how the Isle of Wight stood in that respect, with regard to what was wanted for the use of the sick. It appeared on enquiry, that the common market was not materially higher than in other places;

the conditions held out, viz. payment once a week, with a prohibition against centage on the money to be paid, operated considerably in reduction of customary prices. It may be proper to observe, that nothing was allowed to be brought to the hospital for the use of the sick, which was not of sound quality; the quality was judged of by the sample produced with price affixed, and preference given to what was best and cheapest. The proposals were open to every one; and they were renewed from time to time, in order to ascertain that the ratio with the market was preserved. It is not pretended, that a cheaper market was thus established in the Isle of Wight for the hospital of the depôt, than might have been done in London or other part; but it is believed, that it was not higher in original cost; and it follows that it was lower at the point of consumption, than if purchased at an equal price, it had been taxed with freight and carriage from a distant place. The expence of freight by sea or land carriage, the chance of damage and the waste in store, which with every care is considerable, as may be concluded from the allowance made to commissaries on that account, must be allowed to add materially to the price of the consumable article. Here there was no waste, no damage, no four wine, no four porter;—provisions were drawn only in proportion to the demands; the amount of the expenditure by the day, or by the week, was capable of being precisely ascertained; and the

the account was brought under the eye, as directly and with as clear a voucher, as the articles of a dinner bill. It is not pretended to calculate the difference of expence of thus furnishing an hospital at a market on the spot, or at a distance; but, when all the circumstances attending it are considered, it may appear not to be undeserving of attention.

Besides the saving of money which arose from furnishing the hospital with all kinds of provisions at a market on the spot, the retrenchment of superfluities makes a conspicuous figure on the head of economy. Of these, the retrenchment of superfluous servants cannot fail to attract attention. An estimate of the number of servants, judged to be sufficient for an hospital of four hundred persons, is detailed above; viz. twenty-one attendants on the sick, female nurses or males called orderlies; three ward-masters, for the care and discipline of the convalescents; sixteen servants for the economical administration; eight for medical purposes, viz. three dispensers or surgery-men, three barbers, one labourer in the elaboratory, and one person for the care and cure of those infected with itch, making a total of forty-eight persons of all descriptions. The number is perfectly sufficient, according to the plan acted upon at the dépôt, even if the sickness should be of a serious kind; yet the reduction amounts nearly to ninety persons, according to the rule which was followed at Chatham in the latter end of the

Retrenchment of superfluities.

year 1800. The number of sick at that place never appeared to have amounted to four hundred, itched men and invalids included; the list of servants exceeded one hundred and thirty. The value of the pay and provisions of this excess, according to the common rate of provisions, cannot be less than the annual sum of two thousand pounds. This is clear; but besides this, the expence of purveying, which, according to the former establishment, (purveyor, clerks and store-keeper, with their salaries and extra allowances included,) could not be much short of five hundred pounds per annum, was reduced to two and six-pence per day. The duty was executed by one of the assistant surgeons, to whom the above sum was given as compensation for extra trouble. There is here a positive document of reduction of expence to the amount of two thousand five hundred pounds per annum, with a positive testimony, for those who will take the trouble to examine it, that the administration, medical and economical, was correct, the settlement of the accounts punctual and exact to a degree never perhaps before witnessed in military hospitals.

The retrenchment of expence, in cutting off superfluous servants, is positive and clear. The retrenchment of excess in the article of provisions is believed to be considerable; but it cannot be calculated with exactness, without reference to documents, which the author does not possess. It appears however, to consist in
modifications

modifications of administration, rather than in the rate of diet, established by regulation; for the diet-tables of the hospitals of the depôt, though admitting of a lower quantity of beef, bread and beer, than the diet-tables of other military hospitals, comprehend other matters of nourishment and refreshment, which brings it nearer to a level, if estimated by the simple letter of the table, than appears to be the case in a reference to the accounts of actual expence. The proportion of relative expence cannot be correctly known, but by an examination of the hospital books, the returns of sick and servants, rate of common and extra diet. The amount of hospital expence at the army depôt was under ten pence per day for each person, including the pay and provisions of servants, as appears in the abstract of the money account annexed. What it is at other hospitals the author does not pretend to say precisely; but from the loose estimate, which he is able to form from imperfect materials, it appears to exceed by more than one half. Perhaps in an hospital of four hundred persons, the annual amount of the difference, in total expence, would not be much short of ten thousand pounds. It has been stated whence some part of this arises, but in the article of provisions and refreshment the difference is also believed to be considerable, and it is presumed, that it arises from measuring or not measuring the means exactly to the ends. In the hospitals of the depôt, beef and bread were
not

not drawn, where they could not be consumed ; and wine was not considered as a ration of right to a sick man. It was only ordered, when it could answer an useful purpose ; but it was never stinted in quantity where it could be useful.

Accounts.

The assistances and other means, wanted for the use of the sick, consequently the amount of the expences incurred on that account, were, as has been stated, exactly measured in the hospitals of the depôt. The statement of the account was arranged in a new manner ; and it is presumed in a manner calculated to bring the whole detailed process under the eye at one view,—the purpose, the authority, the application, and the quittance or discharge, being distinctly expressed on the face of the abstract. The manner may be traced throughout, by examining the documents annexed. * The provision return, for instance, corresponds with the daily report of the number of sick and servants, the quantity determined and drawn, according to the rates of diet for subjects in different conditions of disease or classes of hospital arrangement ; it is verified by the senior medical officer on the spot, who is obliged from his duty to know that it is correct ; the quantity of extra allowance or refreshment corresponds with the wants of the sick in different conditions of sickness, as ordered by the attending physician or surgeon, and certified by his signature †. These are common and

* Table I. B.

† Table C.

regular vouchers for hospital expenditure. Whatever may, on other occasions, be wanted for sick persons on detachment, or otherwise, but not on the hospital establishment, is issued from the hospital stores, in consequence of a particular order from an officer possessing authority to give an order, and specifying a purpose for which it is given*. The quantity of soap, wanted for washing and other purposes, is estimated by a fixed rule; it is issued by an order specifying a purpose, and the order is approved by a certificate expressing the application. The various items of materials, consumed by the sick in a given time, are formed into a table of expenditure. The period fixed at the hospital of the depôt was weekly. The examination made by a board of medical officers, certified to be correct, corresponding with the common and extra tables of diet and orders of authority, and approved by the president, is admitted as an authentic voucher, for so much value, in the settlement of the money account. This weekly examination of hospital expenditure by a board of medical officers was adopted by the author, in the hospital at Bremen, in the year 1795; and it appears to have been the first attempt of the kind made in British hospitals. It is a step towards system and economy,—in short, a rule to prevent abuse. It serves to furnish a concise and connected voucher, for the settlement of

* Table I. D. Tab. II.

accounts at a future time ; and so far it is useful. But if a similar examination were extended to the money account, it would prove a security against the possibility, without a combined purpose of fraud among a variety of persons, of error ever finding its way into the accounts of hospitals.—The actual authenticated expenditure of provisions, &c. in hospitals is the first point to be ascertained ; the second is the quantity of purchase or receipt into store, in whatever manner accruing, whether purchased directly at the market, or drawn from the stores of the commissary-general. These are to be compared and balanced. Such examination was easily made in the hospitals in the Isle of Wight ; for as the supplies were provided, only according to the demands of a short period, which were capable of being calculated with tolerable exactness, the balance at the time of settlement was generally quit or near it ;—the amount of the expence was correctly known at the end of every week. In hospitals abroad, where the supplies are drawn from the stores of the commissary-general, the same precision cannot be easily ascertained, so as to state the precise expence ; for prices are not supposed to be correctly known to the head of the medical department.—On this account, and on others of some importance, a commissary of hospitals or purveyor, in the wider sense of the word, would be an useful appointment ; for it is better in all respects, that the concerns of the hospital be
kept

kept separate and distinct, than that they be connected with or depend on other departments.

In the abstract* of the money account annexed, the common and regular expences are separated from the extraordinary and contingent. In the common expences of hospitals are included provisions and all manner of refreshments, washing, provisions and pay of servants. The amount of the certified table of expenditure, added to the balance remaining unapplied, determines the quantity of purchase or receipt, on account of which money is to be paid. The total of such purchase or receipt being submitted to inspection, with authenticated vouchers of expenditure, and an acknowledgement of responsibility for what is unapplied, the statement is clear; and a board of officers, authorized to examine the money account, may be empowered to destroy, as superfluous, all bills of parcels rendered in with the articles purchased or provided, taking a receipt in full for payment to a given date, as a security to the public against future claims, adding a signature of examination and approval. With the certified table of expenditure and balance of provisions in store, the certified pay-bill of servants' wages is the only other voucher belonging to the common account of the hospital. These are to be transmitted, with the money abstract, to the comptrollers of hospital accounts. The total amount of money expended, with the

* Table III.

purposes for which it is expended, is thus known, and the number of days of persons on the hospital establishment is added in the margin, in order to give the money abstract such a form that the expence of the whole, or of one man, by the day, the week, or year, may be calculated at one view, from the materials which appear on the face of it.

To the common account of hospital expenditure, is added a contingent account of money expended, on account of accidental and contingent wants. As the vouchers of this expenditure cannot be brought under a general form, as is done in the common table of expenditure, the particular vouchers are transmitted, with the general abstract; and it is required that they bear expression of purpose, authority, and certificate of application.

The common accounts of the hospitals of the depôt, in the isle of Wight, were kept, in the manner described with very little trouble, and the amount of the expence was easily calculated. It is difficult to attain the same accuracy in accounting for the consumption of stores, viz. bedding, clothing, and utensils; but it is not impossible. The hospital of the depôt, it is true, was not established on a correct plan, for a sufficient length of time, to give the opportunity of forming an estimate; but when an hospital is completely equipped with all proper furniture for a given number of men, the value of the barrack allowance for a similar number being deducted,

deducted, the expence of the extra equipment is ascertained. The surplus is chargeable to the account of the sick, and if the œconomy be correct, it will not be difficult to determine, with precision, the loss or expence, in tear and wear, for an hospital of a given strength, in a given time. When the rule is once formed on sure grounds, the calculation may be made accurately on future occasions: the means may thus be always measured exactly to the ends. But, besides that the expence in tear and wear of hospital furniture exceeds the expence of tear and wear in the barrack equipment, the account of the sick is likewise chargeable with an allowance of fuel and candles, particularly in winter, in addition to what is granted to the same number of healthy men. This probably may exceed by one-half, for fuel is an article in which an hospital cannot be stinted without injury.

The expence of medicines and surgical apparatus for the British army amounts annually to a prodigious sum; and there does not yet appear, among the forms of accounts, to be a correct method of ascertaining the application, clearly and expressly vouched. It means nothing to render in an account, in loose terms, of so much medicine expended in an hospital; and it is an impossible labour to account nominally for every draught, pill, or bolus, which may be ordered for the sick. The annexed form, it is believed, embraces as much precision as can be attained on this head,—and with very little trouble. It
will

will at least enable those who have knowledge of the subject to judge, whether or not there exists any material abuse. The quantity of medicines and surgical apparatus in store is known; a measured quantity is placed in the surgery or dispensing shop; the consumption of a given period is ascertained; and, as a voucher, to prove the reasonableness of the expenditure there is added the number of days of medical prescription, or surgical application.* To put the matter in the clearest light possible, it will be well to place the quantity of medical remedies expended, in a column by itself, opposed by the number of days of medical prescription; the quantity of surgical means, in the same manner, opposed by the number of days of surgical application: to which may be added the quantity of itch ointment, opposed by the number of persons cured of itch. These forms may be considered as vouchers for expenditure; and perhaps they are the only ones which can be obtained, possessing any thing like accuracy.

The plan of managing the hospitals of the army depôt is stated to have been changed by the author, from what he found it. It may be asked on what grounds he presumed to attempt so great an innovation in a matter of so great importance; for, if attempted without demonstrative proofs of benefit, the attempt will be justly considered as reprehensible. Proofs of benefit he believes he possessed. It may be proper

to shew, in a few words, what these are, and how he attained them. The medical profession became the lot of his life; military service was the object of his choice. Both in the American and in the late war, he sought employment in the army,—to the neglect of personal interest; for the investigation of the causes and cure of military diseases had strongly attracted his notice; and he prosecuted the study with zeal and ardour. Acquainted for near thirty years with military life, and employed for near fifteen in the scene of actual war, in camps and hospitals,—the care of the health of soldiers, as it was the duty of his office, so it was the object which chiefly fixed his attention. His opportunities of considering the subject, in its full extent, have been such as do not fall to the lot of every one; for he served in the lowest medical rank in the army; he has also been a chief in the medical department of a considerable body of troops; he has served in different climates; and, as in the course of what may be termed long service in active war, or, in circumstances similar to active war, he has seen a multitude of sick men, he may, he hopes, be allowed, without presumption, to calculate on some acquisition of knowledge; for, during all this time, he was desirous to acquire it. He learned, by casual observations in America, that the establishment of general hospitals was necessary in armies, only in a very limited degree; and that the means which sick men require, exclusive of medicines and hospital equipment,

I

rarely

rarely call for any extra expence. This opinion, which arose from casual observation at an early period of life, has been fully confirmed in later experience; the facts have been brought together, traced to their principles, digested into system, acted upon, and found to be not only practicable, but easy in execution, and correct in movement in extensive and various fields of service.

The author served in America with the late 71st regiment, a corps which took possession of Savannah in the latter end of the year 1778. It traversed, in its various expeditions, the greatest part of the provinces of Georgia, the Carolinas, and Virginia. The sick list was sometimes numerous. Georgia and Carolina, at least particular districts or particular positions in these provinces, are singularly unhealthy. The general medical staff of the army was not then so numerous as it is in the present time; and if the surgeons of regiments had been disposed to throw the whole or principal part of the sick upon general hospitals, the establishment would not have been sufficient for their care. There was, in fact, no adequate provision to be made in the establishment of general hospitals for the sick of corps, serving in particular districts, at particular seasons of the year; for, in many instances, more than one half were actually under medical treatment. Good soldiers are generally unwilling to go to general hospitals; and good surgeons are unwilling to separate good soldiers from their comrades.

comrades. The author was not surgeon of the 71st regiment, but he served with it; and he can therefore say, without arrogating to himself, that the sick were generally treated in the hospital of the regiment, unless when the regiment was ordered upon service, without being furnished with the means of carrying the sick, or without the possibility of dividing the medical assistance. In all these campaigns, and they were esteemed to be the most active of the American war, no expence was incurred on account of the sick, while they remained with the regiment; yet their condition was comfortable, and the loss of men was inconsiderable, compared with the ravages of the war which is just closed. Convinced by the experience of what he had seen in America, the author, when surgeon to the 3d regiment of foot, or Buff, in the early period of the late war, refrained, as far as circumstances permitted, from sending the sick to general hospitals. The circumstances, which commanded a contrary conduct, were want of accommodation in quarters, or want of the means of conveyance, when the regiment was on the route. The whole, or almost the whole, of the British infantry was sickly in the early period of the war, and the Buff was in a similar situation with others. The author served with it about eighteen months; and for upwards of twelve, the number of sick, in hospital, averaged forty daily: but on this account no extra expence was incurred, exceeding the usual contingent fund for house rent,

&c. except two dozens and an half of port wine. There was want of hospital equipment, for there were not provided any means of conveying it: but in all other respects there was abundance; the condition was not uncomfortable;—contrasted with that of sick in general hospitals, it was enviable, and the mortality bore no proportion.

The author arrived in St. Domingo in May 1796. The colonels of colonial regiments, or persons connected with them, had at that time a contract for the subsistence of their sick in hospital. The expence was enormous. The author was directed to visit the different posts, to inspect the medical establishments, and to report the most probable means of remedy. These were not of difficult discovery, for it had been perfectly proved by him in his former experience, that the value of the ration,—in this case, a commuted ration, that is, fresh meat in place of salt meat, wine in place of rum—*ad valorem*, with the power of changing with the commissary the species of provisions, according to a fixed rate of value, would furnish the means of supplying every requisite subsistence, or extra refreshment which sick men require. The plan was suggested, approved, and carried into effect. The saving to the public was great,—not less than eighty thousand pounds a year; and the comfort of the sick was increased, for it did not depend upon the liberality of a contractor. The same plan was recommended for the whole of the British troops in the island, and it was cor-

rectly carried into effect, with those stationed in the district of Port-au-Prince. A small deduction was made from the pay for defraying the expence of washing, of servants, or for the procuring of extra refreshment; but, upon trial, it scarcely appeared to be necessary, for the value of the ration supplied every thing in sufficient abundance.

The arrangement and superintendance of the hospitals of the Russian troops, which acted with the British army in Holland, in the year 1799, was committed to the care of the author. The causes of camp diseases are known to prevail in Holland at this season of the year; and the weather, which was wet, had been particularly fertile of them. They had begun to act before the embarkation; consequently when the troops were crowded into transports, and confined for a considerable time at sea, the camp malady, following the usual course of things, degenerated into the ship or contagious fever, so that disease continued to spread, after the original cause of indisposition was left at a distance. In a word, the Russians arrived at the islands of Jersey and Guernsey in a sickly state. They were furnished with medicines, their hospitals were equipped with every requisite furniture, an extra allowance of fuel and candles was issued, according to requisition, with a commuted ration *ad valorem*. No other expence was incurred; and this people, not partial to the English service at this time, not only abstained from complaint, but expressed satisfaction in the treatment of their sick.

A fimilar principle was acted upon at the hospital of the army depôt in the isle of Wight. It is true that there was no commuted ration ; but a sum equal to the value of the ration, or what a soldier contributes to his mess, was found to be sufficient to defray the common hospital expences according to the then rate of things, pay and provisions of servants of all descriptions included. The sum, as it stands in the abstract annexed, is under ten-pence ; but when the value of what remained in store, at the period of settlement, is deducted, with allowance made for extra expence of servants at the first establishment of the hospital, &c. it actually does not exceed nine-pence, during the time it was under a correct administration. In an hospital of one hundred patients and upwards, it may always be computed at that sum ;—under one hundred, ten-pence will perhaps be required to cover completely all the expences.

It thus appears, from what has been stated, to be proved to a demonstration, that, unless in hospital accommodation, in the excess of fuel, candles, and hospital equipment beyond the customary allowances for barrack apartments, in cost of medicines, and salary of medical staff, the care of sick soldiers calls for no extra provision of expence in army estimates. The commuted ration on foreign service, viz. fresh in place of salt provisions, and wine in place of rum,—ad valorem, or the relative value of the ration in money, the sum contributed to the
mess

meas in England, which, by fair argument, ought to be paid to the hospital establishment for subsistence, and washing during illness, will be found sufficient to answer all useful purposes.

Military officers, who are acquainted with military service, and who have studied principles of military œconomy, will be able, it is presumed, to judge of the advantages or disadvantages of the administration, which is recommended in the preceding pages, whether medical or œconomical; for the subject, in the course of their duty, must have been frequently under their observation. If the two points now considered, saving of money and order of arrangement, as conducive to medical effect, (and of which men, not of the medical profession, may be supposed competent to form an opinion,) come forward in a convincing shape, the plan suggested, or rather the innovation which was carried into execution, must be left to the sentence of higher powers. The author believes he has done his duty in imparting his best knowledge.

PART III.

Examination of the Management of the Hospital of the Army Depôt.

Νηπιοι εδ' ἴσασιν ὅσω πλέον ἤμισυ πάντος,
 Οὐδ' ὅσον ἐν μάλαχῃ τε καὶ ἀσφοδελῷ μεγ' ὄνειρε.

HESED. Oper. & Dies, 39.

Change of
 hospital
 manage-
 ment.

IT is stated in the preceding pages, that the plan of managing the hospitals of the army depôt in the isle of Wight was altered, in many points, from the plan of management established in the other hospitals in England. The changes or innovations there introduced, though arising in part, from the circumstances in which the depôt was placed, at the time of removal from Chatham, and thus to be considered as originating from causes of necessity, yet principally had their source in a conviction that they would be useful; for the practice had been tried by the author on different occasions, and proved to be simple and effective of its purpose in all. A short view of the arrangement projected was drawn up, and submitted to Major-General Hewett, inspector-general of the recruiting service, and commandant of the depôt of recruits; a person in whose opinion the public may repose confidence, for he possesses a correct judgement from

from nature, and he has learned knowledge from experience. He perceived the simplicity of the principle, and had an opportunity of seeing its operation in practice. The propositions alluded to related to œconomy, and he transmitted them to the War-Office for opinion, approval, or rejection. From the War-Office they appear to have been sent to the army medical board, with directions to furnish the Secretary at War with information on the subject. The army medical board, instead of answering the question shortly and specifically, entered into a laboured examination of the professional character of the author, asserting his practice to be unsuccessful, and the alterations introduced by him into the hospital not to the advantage of the public. This is contained in a letter, dated Upper Brook-street, 10th of December, 1801, signed L. Pepys and T. Keate, addressed to the Right Hon. Charles Yorke, Secretary at War.

C O P Y.

SIR,

“ We have the honour to acknowledge the receipt of your letter of the 14th ult. with the inclosed papers, directing us, after comparing the statement of the expenditure for the hospitals in the isle of Wight, with those for the other general hospitals in this country, to report to you an opinion, whether it would be expedient at present to make any, and what, alterations

Letter of
Accusation.

alterations in the system established by Dr. Jackson; or whether Dr. Jackson's regulations appear to have been framed with so due a regard to œconomy, and to the advantage of the troops, as to afford just ground for considering the propriety of introducing them into the other general hospitals at home.

“ We have the honour to acquaint you, that we have made the comparative statement of the expenditure for that hospital with those of the other general hospitals at home; but we find that by far the greater proportion of patients in those hospitals is of a very different description of sick from those formerly at Chatham, and now in the isle of Wight.

“ With respect to the question, unconnected with other circumstances which in the course of this investigation it will be our duty to lay before you, it appears to be whether a liberal and generous diet is requisite to restore men who have either been debilitated by disease, or by active debilitating remedies.

“ It appears that Dr. Jackson's mode of carrying on the isle of Wight hospital is an apparent saving of money; but at the isle of Wight, and lately at Chatham, we have observed an unprecedented number of deaths, (viz. 27 in the last month, and 21 in the last two weeks,) frequent relapses, and tedious recoveries, with a debilitated state of the patients; therefore, so far from œconomy being effected, there has been a very serious loss of men, and ultimately a great expenditure.

These

These returns called upon us to recommend that two physicians should be sent immediately to the isle of Wight.

“ We now beg leave to advert to the inclosed letters, Nos. 1, 2, 3, 4; and this we do in obedience to your commands when we had the honour of waiting upon you. It appears therefore, that Dr. Jackson has altered the established diet table, as used in all our hospitals, and sanctioned by his Royal Highness the Commander in Chief; and that he has reduced many other articles of comfort and nourishment.

“ We have thought it would throw some light upon the subject before you, to send the inclosed monthly report of the foreign military hospital in the isle of Wight, for the month of October last, by which a comparative statement of the mortality in the same place, under different diet and treatment, may be made.

“ Upon the whole it will appear that Dr. Jackson's system of œconomy is not to the advantage of the troops, and should not be introduced into our home general hospitals; and we humbly submit that it will be necessary to enforce the printed regulations for general hospitals in the isle of Wight.

(Signed) L. PEPYS,
 T. KEATE.”

This letter, though signed only by the physician and surgeon-general, is a full official instrument of the army medical board, for the other member

ber

ber was then ill, and incapable of acting.* As the burden of the accusation is mal-practice ;— either in diet or medical treatment, the physician-general must officially be supposed to be the mover ; and therefore the remarks, in the refutation, are addressed to him more directly than to the surgeon-general. The task of refuting misrepresentation is unpleasant ; but it has become necessary. It may also be considered to be delicate in the present case, for the physician-general possesses the highest official rank in the medical department of the army. The language of truth may thus perhaps be regarded by some as the language of insubordination. The author will endeavour to be correct ; but the circumstances in which he is placed require that he speak without reserve : he can scarcely be supposed to be restrained by official respect, for the style and manner of the accusation observed no form of official procedure.

Inconsistency of the Accusers.

The reader is supposed to know, from what has been previously stated, that the number of the diseases which prevailed at the army depôt in the latter end of the year 1801, was great, and that the nature of many of them was malignant. The letter of the physician and surgeon-general, now alluded to in this statement, asserts, that they had little resemblance, in character, with the diseases of the other hospitals in England. The fact is true, and it seems to have served a purpose to declare the truth on this occasion. By means of it, the specific question

* The present inspector-general was not then in office, consequently not a party in the case.

of the letter of the Secretary at War was evaded. But though this point is expressly stated in the beginning of the letter ; yet, in a subsequent paragraph, the Secretary at War is referred to the October monthly return of the foreign hospital at that time in the isle of Wight, (and under a regimen, supposed to be different from that of the hospital of the British depôt,) as a document to furnish a comparison of relative mortality. The reference is not candid ; and it does not shew good memory. The letter alluded to states, “ that the greater proportion of patients in the hospitals in England (of which the foreign is one) was of a very different description of sick from those formerly at Chatham, and now in the isle of Wight.” The foreign hospital, it may be observed, had then, and probably always had, less resemblance with the hospital of the British depôt, than any other hospital in England ; for it rarely contains, and at that time it did not contain any acute diseases, in which mortality is expected to take place. The comparison, therefore, does not bear ; the reference shews a purpose to deceive.

“ It appears,” says the letter, “ that Dr. Jackson’s mode of carrying on the isle of Wight hospital is an apparent saving of money ; but at the isle of Wight, and lately at Chatham, we have observed an unprecedented number of deaths, (viz. 27 in the last month, and 21 in the last two weeks,) frequent relapses and tedious recoveries, with a debilitated state of the patients ;
therefore

Specific
Accusation.

therefore so far from œconomy being effected, there has been a very serious loss of men, and ultimately a great expenditure. These returns called upon us to recommend that two physicians should be sent immediately to the isle of Wight.” The above paragraph consists of different clauses, which require to be examined separately.

Mortality.

“ The mortality in the hospitals of the army depôt in the isle of Wight, and lately at Chatham, is stated to be unprecedented.” The nature of the diseases which prevailed in the isle of Wight in the latter end of the year 1801, was acknowledged to have been malignant, by those who were appointed to inquire into the matter; the mortality was certainly considerable; it may even appear to be great in the opinion of those who have never seen military hospitals, or hospitals so circumstanced as was the hospital in the isle of Wight; but though great, it is fit to find a parallel for comparison before the term unprecedented can be applied to it with propriety. A parallel, according to the acknowledgement of the physician-general, did not then exist in England. In candour it was required of him to produce something which bore a resemblance, before he drew a comparison. Had he been disposed to seek he might have found; for the instances in the late war are numerous; and it scarcely can be supposed to be possible that the physician-general of the British army is ignorant of them. There is not any thing in the present case expected from candour towards the author; but

but the physician-general, on his own account, ought not to have suffered the mortality of the hospitals on the continent in the years 1794 and 1795, the mortality among the recruits and new regiments in Jersey and other places, and, above all, the mortality at Plymouth, where a single regiment, if report be true, lost as many men in six weeks as the army depôt did in six months, to be out of his recollection, when he approached the Commander in Chief with an accusation, the refutation of which must necessarily cover him with shame; for it must necessarily shew ignorance or wicked design. The consequence, however, seems to have been disregarded; and the assertion of unprecedented mortality is boldly made, as if all record of times past were lost. Were this the case, the truth might be concealed, and a random assertion gain credit; but it fortunately happens, in the question at issue, that a reference may be made, not only to what is past, to what was present at the time, but to what immediately followed. The latter case must be allowed to furnish the most correct illustration. The reader is referred to it; and the physician-general may satisfy himself, that if there was no preceding instance of mortality in the records of British hospitals equal to that in the hospitals at Chatham, and in the isle of Wight, while under the management of the author; the returns of these hospitals, previous to January 1802, when the medical charge was in his hands, and subsequent to January, when

it

it devolved upon regular physicians, are annexed to this statement ; * they may be compared ; — they will be found to furnish an example.

It is to be observed in this place, that it is not often an easy matter to form a just estimate of the mortality of hospitals ; for the materials, submitted to inspection, are rarely complete. The common form of the medical return, for British military hospitals, † is defective in the principle of its construction. It presents no discrimination or arrangement of diseases by their classes and characters, and furnishes no points upon which to calculate a movement through a series. But while the common return is thus defective in the principle of its construction, it does not even appear that the army medical board possessed a knowledge of the points upon which alone the movement, and consequently the mortality are to be calculated ; for if the meaning of some obscure inferences has been rightly understood by the author, the calculation proceeds upon a false foundation ; the proportion of mortality being apparently supposed to lie between the number who die in a given period, and the number remaining in hospital on a given day, points which have, in reality, no relation with each other. The proportion rests evidently between the number discharged to duty, and the number carried to the grave in any stated time. This is common sense, but it is not commonly known, — not even to directors of hospitals. From mistake on this

* Table V.

† Table VII.

head, there was probably an involuntary error in the reference to a false proportion; but from whatever cause the error has proceeded, whether from ignorance or design, it is a duty which the author, as holding a public office, owes to the public; which, as serving in the army, he owes to his Royal Highness the Duke of York as Commander in Chief; and which he owes to many friends in gratitude, to justify them in their good opinion. To remove a false impression, and establish truth by circumstantial evidence, is a measure demanded in the present case, not so much on a private as on a public account, connected with a public good.

It is stated in the preceding part of this work, that the sickness which prevailed in the barracks on Parkhurst forest, in the last months of the year 1801, was high in proportion to the number of the troops; and that the diseases had a character, innately marked with mortality. This is not chargeable to the account of the physician. It is also stated that the hospital was not sufficient in extent of accommodation; it was cheerless and damp from position; cold from want of a proper disposition of fire places: Neither was this the physician's fault. The weather was wet and unfavourable to recovery; the means which conduce to recovery, under such disadvantages, were not at command. Here also the physician was blameless, for he had made known his wants.—With these points admitted, and they admit of no dispute, such statement

of comparifon, as the imperfect materials of medical hiftory furnifh, or as defective means of information can fupply, are now to be adduced.

Fever, under one form or other, is the moft common difeafe in armies ; and it is the difeafe in the treatment of which men's opinions are the leaft agreed. It is the difeafe, therefore, which is to be brought under view in this place ; as it is the only one perhaps in the treatment of which any fair parallel can be drawn. A * board of medical officers, fpecially appointed by his Royal Highnefs, the Commander in Chief, to inquire into the management of the hofpital of the army depôt in the ifle of Wight, in confequence of the representations of mal-practice and mal-adminiftration alluded to, refers, in its report upon that fubject, to the returns of the hofpital at Chatham, in the year 1794, as furnifhing an example, on which to form fome eftimate of relative fuccefs in practice. In a period of fix months, the mortality in fever, at that place, is ftated to have borne the proportion of one, in ten ; in the fame place, from the 1ft of March, 1801, to the 10th of July following, it bears the proportion of one, in thirty-two nearly ; in the ifle of Wight, from the 18th of July to the 31ft of December inclusive, it is one, in twenty-three and a half ; from the 1ft of January, 1802, (at which time the medical charge of the fick

* Sir John Hayes, Dr. Hunter, Mr. Weir, Dr. Pinckard.
passed

passed into other hands,) to the 30th of April, when a knowledge of the state of the hospital no longer belonged to the author, it is one, in six nearly. This is the proportion of the hospital mortality, as it stands on the face of the returns annexed; but as there appear, in referring to the actual condition of the sick, to have been five persons in hospital, under the head of fever, on the first of January, in circumstances from which there was little expectation of recovery, this number, for the sake of just comparison, is deducted from the sum of mortality, in that class of disease, in the after period, and added to the amount of the mortality, in consequence of fever, in the prior period; an alteration which reduces the proportion of deaths, in the one case, to one in seven nearly, and raises it, in the other, without any credit assumed on account of probable dismissal, to one, in twenty. The difference still is nearly as one to three. These are the only statements of mortality in fevers in* military hospitals,

* Since the above was written, the author has seen the returns of the hospital of the royal artillery at Woolwich, as published by Dr. Rollo. The mortality in fever is about one in twenty, which is nearer to that of the hospital of the dépôt than any other which has been adduced; but the circumstances will be allowed to be different between an hospital of recruits, under the prevalence of an epidemic, and in an hospital of artillery soldiers, where such a circumstance is not stated to have taken place. In the one, bad cases only were admitted, for there was want of room; this probably was not so in the other. And farther, as the amount of persons cured of fevers, in the course of five years, was only

hospitals, possessing any accuracy, which have come to the author's knowledge. They are in point, for the sick were of the same class of people; only, the hospital of the depôt was less favourably circumstanced in the latter end of the year 1801, than it was subsequent to that time; and probably than the hospital at Chatham was in the year 1794; for, at that place, there must always have existed means of keeping the sick warm and dry.

The author possesses no means of knowing correctly the proportion of mortality in fevers, in hospitals not military. Dr. Willan's view of the diseases of London, for the years 1796, 97, 98, 99, and 1800, seems to present a statement of mortality in contagious fever, as one, in six or seven; but the notices are not so connected and arranged as to furnish grounds for a fair comparison with military hospitals. Dr. Currie, in his reports of the effects of water, published in the year 1798, mentions, that fever-wards were established in the work-house at Liverpool; and that, in the space of four years, five hundred and thirty cases passed through these wards; of whom fifty-one died; a proportion of one, in ten and a half nearly. A house of recovery is also established at Manchester, into which persons ill of fever are received. From the 19th of May

337 at Woolwich; and, in five months, 775 in the isle of Wight; it may be presumed, that, as there was great difference in the quantity of the sickness, there might also be difference in the quality of the disease.

1796, to the 31st of May 1797, three hundred and seventy-one persons were received, three hundred and twenty-four discharged cured, forty died,—a proportion of one, in eight.

Such is the view of relative proportion of mortality in fevers. It is not full and satisfactory; for the returns of hospitals are not yet constructed upon a principle to furnish correct information on the subject; but it is such, as imperfect materials supply. There is however no fallacy in the statement. Persons may judge of it, without professional knowledge; and the plainest understanding may discern that the mortality of the hospital of the army depôt, in acute diseases, instead of being unprecedented, as is stated in the letter of the physician and surgeon-general, is less by two thirds *, while at Chatham in 1801, than at Chatham in 1794; and less by two thirds in the Isle of Wight in 1801, than in the beginning of 1802, when the medical charge passed into other hands.

The next clause in the accusation—*frequency of relapse*, Relapse. is a point which unfortunately can neither be confirmed nor refuted by decisive evidence. It is easy to make such assertion; it is difficult to disprove it; for the returns of hospitals rarely convey information on this head. The physician-general presumes that relapse was frequent; he certainly knew not that it was so; for he never saw the hospital, and never saw the soldiers in barracks. He therefore had no opinion, on the subject, from his own observation, and no

* Table V.

official documents were before him, which could enable him to form an opinion. The opinion must then be an assertion at random, which may be right, or which may be wrong. As there can be no demonstrative proof of its truth or falsity, from want of accurate materials; it becomes necessary, on that account, to adduce some professional arguments, which may enable professional men to judge how the case was likely to stand.

It is proper to notice, in the first place, that there is one class of acute diseases, which terminates by decided and final crisis; another, which terminates also by crisis, but in a manner less perfect and secure. The first, viz. general inflammatory fever, and fever with local inflammatory affection, does not usually return after it has terminated critically. The other, viz. intermitting, remitting, autumnal and camp fever,—likewise fever of the genuine contagious character, changes or terminates apparently at a given period, but recurs, on frequent occasions, at certain intervals after apparent termination. This is an established rule. It is a periodical movement, connected with nature and the nature of things. Such recurrence of disease, after apparent termination, is denominated relapse. That it took place at the hospital of the dépôt, as at other places, may be reasonably supposed; but it may also be assumed, without any undue indulgence, that, as every person under the roof of that hospital was seen and correctly examined at two different times every

every day, the approach of these relapses was often discovered at a distance. It is known, that relapse, when foreseen, may often be prevented by the timely application of remedy ; and as this rule was uniformly acted upon, there are grounds to believe, that the effects were less fatal than they might have been supposed to be, had not such a rule of discipline been in force.

The disposition of particular classes of fever to recur at certain intervals after termination, is known to every person of medical experience. Many also know, that the periods of recurrence, though generally connected with certain inexplicable movements in the great system of the universe, moving causes into action in different portions of time, are still in some degree capable of being retarded or accelerated by the operation of means which are obvious, and under controul. Relapse, after the termination of fever, is thus known to be accelerated by full living ;—to be retarded, or prevented by the opposite. This is a vulgar observation ; and it is a true one. In the one case, the body fills rapidly and assumes the appearance of health : relapse is the consequence : it is even observed, that relapse rarely occurs, till the body has nearly attained its usual fulness and natural good plight. In the other case, viz. under spare and measured diet, recovery is slow, but progressive ;—relapse is a rare occurrence. Strong proofs of this are found in the hospitals of the French, who are rigid in the observance of rules of diet, in all the stages of convalescence. In the hospital of the

depôt relapse was not unusual ; for the nature of the diseases, which most prevailed, was prone to relapse ; but it might also be inferred, that it was probably less frequent than in other British military hospitals, similarly circumstanced in respect of disease ; for here the measure of diet was regulated daily, according to the condition of the subject.

It might be presumed, from the measures pursued, that relapse was comparatively little frequent and little fatal, at the hospital of the army dépôt ; but the materials preserved are not sufficiently accurate to furnish the means of forming an exact estimate of the proportion. In the returns, prior to January 1802, the omission of the requisite notice, in the column for relapse, is frequent ; in the subsequent period, the notice is correctly stated. The proportion appears uniformly to be higher in the latter period than in the former, wherever the notice, in the return, supplies materials from which to draw a comparison ; but the evidence is not demonstrative and complete. The assertion however, though not disproved by direct testimony, is not confirmed by any positive fact, or even supported on any probable grounds ; while the cause which seems to be assigned for the supposition, viz. spare or less generous diet, is singular and new. That abstemious and spare living should encourage relapse in fever, is contrary to the experience of medical men, even to the observation of the vulgar. But if the physician-general had spoken, on this head, from his own knowledge,

knowledge, acquired in military or other hospitals, the opinion might have been regarded as a discovery; at least it would have commanded attention: as it is, it stands as a record of ignorance, if it does not mark a purpose of misinterpretation.

The next clause, *tedious recovery*, admits of positive proof, or of clear refutation; for the date of admission into the hospital, of dismissal to the barracks for duty, or of death, which closes the account of all, is correctly registered. Abstracts of these registers are transmitted weekly to the war-office and pay-office; the number of days, which each man is borne upon the hospital establishment, is marked, in order that a deduction may be made from the pay, on account of hospital subsistence. This affords a positive testimony of the duration of disease; and it is here referred to, as it may enable those, whom the subject concerns, to form a correct opinion on the question of slow or rapid recovery. In the present case, it is to be observed, that the autumnal fever is a disease of a slow period; measles, when malignant, are not only dangerous in their attack, but slow in their retreat; contagious fever, if not cut short in the commencement, is prone to recur, after it has apparently terminated; yet with all these disadvantages, there were dismissed to duty from the medical hospital, calculated for one hundred and twenty-eight patients, and though crowded, seldom so crowded as to contain two hundred,

Tedious
recovery.

near

near thirteen hundred medical cases, from the 18th of July, 1801, to the 1st of January, 1802, that is, in one hundred and sixty-six days; a dismissal, on an average, at the rate of nine per day. From the 1st of January till the 30th of April, that is, in one hundred and twenty days, there were dismissed to duty, from the same hospital, three hundred and fifty-one cases, likewise medical; a dismissal, on an average, at the rate of three per day nearly. But besides this statement of the movement in the medical hospital, which most people will be disposed to consider as active, in the period from July to January, the average time of cure for all patients, surgical and medical, extracted from the returns, stands as follows:—viz. at Chatham in the year 1801, from the 1st of March to the 26th June, twenty days; in the Isle of Wight from the 18th of July to the 31st of December inclusive, twenty-three; from the 1st January 1802 to the 30th of April, forty-six days*.

During the first period of the returns annexed, that is, from 18th July 1801 to 31st December inclusive, such cases of disease only were received into the hospital, as threatened danger to life; for there was want of accommodation. Measles, contagious and camp fever, dysentery and pneumonic inflammations, formed the mass of the sick. During the latter period, the measles, except in the three first weeks in January, were not known; the camp fever ceased; for the season was past; the contagious
 5 fever

fever disappeared, for the importation from Ireland was withheld. From these causes, and from diminution of numbers in barracks, in consequence of large embarkations, and more than proportional diminution of sickness, from changes of weather and other causes, the hospital was capable of receiving every one who required hospital treatment. The activity of movement in the two periods was different ;— and such as is stated.

The *debilitated state of the patients* makes another article of the accusation. The assertion on this head is bold and confident. It will naturally be supposed, that it proceeded from positive and correct knowledge of the subject. The truth is, the physician-general never once visited the hospitals of the army depôt, during the time the author was connected with it: the surgeon-general was once at Chatham, and only once. It is reasonably to be expected, that, where diseases are numerous and severe, with defective means of promoting recovery, the cases of weakness and impaired vigour will not be rare. Measles, complicated with malignant fever, is a disease terrible in its course; and its effects remain long in the constitution. Several persons, in the hospitals of the depôt, were extremely reduced by it; and the lives of some of them were preserved, only by the uncommon care of the nurses. But, though this be true, yet the rapid movements, of which the extract from the returns furnishes proof, may be considered as conclusive evidence that

Debilitated
state.

that the patients were not generally in a debilitated state. They appear, by the certificate* of the garrison adjutant, which must be admitted to be good evidence in this case, to have been dismissed to the barracks apparently in circumstances of health as fit for duty as in the preceding or subsequent times. But besides the direct evidence of the adjutant on the subject of the soldiers' health at the time of dismissal from the hospital, the medical returns, which were officially before the army medical board; and which deserved some attention, contain positive information, that diseases of debility, viz. dropfy and dropfical swellings, ordinarily supposed to be occasioned by impoverished and scanty diet, or active debilitating remedies, such as bleeding, &c. had no place in the hospital of the army depôt. In the course of six months, there appear only two cases of dropfy in the returns; neither of them following in the train of acute disease, consequently not the product of mal-practice; and there existed no case of dropfy or dropfical

* CERTIFICATE.

ARMY DEPÔT, 16th Feb. 1803.

I hereby certify, from the time Dr. Jackson came to be the head of the military hospital at Chatham, and all the time he remained at the army depôt, according to the best of my knowledge, all the sick he dismissed from them to do their duty, were to all appearance in as good a state of health and as strong as they usually came out of the hospital, both before and after Dr. Jackson's leaving the depôt.

(Signed)

GEO. JARVIS,
Lieutenant and Adjutant.
swelling,

swelling, on the 1st of January 1802, when the medical charge passed into the hands of the regular physicians. This fact, which appears on the face of the medical return annexed, will be sufficient to prove to medical men, that spare diet, and debilitating remedies did not produce the ordinary debilitating effects. As the term therefore does not apply in the present case, according to the common acceptation of the word, the physician general is referred to, that he may have it in his power to give a more distinct explanation; unless he be willing to admit that he has made a hasty assertion.

One of the causes, which produced this supposed debilitated state of patients, is the manner of medical treatment. This is censured in general terms, as being of a debilitating kind. The method of treating acute diseases, it may be observed, is still unfixed, and subject to dispute. We know something,—not all we might know, and not all we ought to know. The author has no uncommon pretensions. He is sensible of the insufficiency of his professional knowledge; for his skill often fails in obviating the causes of death. He will not even maintain but that he sometimes errs, both in principle and practice; but it is clear the physician-general does not judge his practice fairly. He never himself saw the treatment of the sick in the hospital of the army depôt; even those persons, (Dr. Maclaurin, Morison, and Andrews,) who appear to have been suborned to give opinion on the subject, cannot

cannot pretend to have had much greater opportunities of information; for, though borne on the list of the Chatham medical staff, their duty did not lie in that part of the hospital, where the sick principally were *. It may be observed

* The hospital of the army dépôt was placed under the management of the author, styled physician and head of the hospital, in the month of November, 1800. The commission, in a fair interpretation of the word, appears to confer the power of prescribing for the sick and of arranging the general concerns of the department, with approbation of the general commanding. In this respect the author might be considered as a chief; but as all arrangements concerning the sick of British troops ought to be submitted, as they are supposed to be known, to the physician-general, he is ready to consider himself as under the control of that authority, and will cheerfully be judged on that supposition; readily allowing, that if the physician-general, possessing authority and executing a duty, which his office enjoins, had personally examined the management of the hospital of the army dépôt, and discovered incapacity or negligence; a representation in that case, to procure the censure or removal of such person from an office which he was not qualified to hold, would have been a just and proper act; the public would have given him praise, and the individual could not have complained; for he had been treated in a fair and open manner. But, on the contrary, if, instead of this open mode of conduct, certain persons be encouraged or suborned to give opinion and pass censure on practice and administration, the correct state of which their opportunities of observation did not permit them to know, and of which their subordinate station did not permit them to speak, till called upon in formal evidence, without a violation of the laws of subordination and customary discipline in military service, the individual may be allowed to think that he has not been fairly used; and the higher powers may, perhaps, feel that they have not been respectfully

observed in this place, that the author has written two tracts upon the subject of fever; and consequently, it may be supposed, that the principle which directs his practice in the cure of acute diseases, either is known, or may be known

respectfully treated in being drawn to listen to accusations, the truth of one part of which the accuser had not ascertained by his own observation. The physician-general could not be supposed to know the effect of the author's practice in the treatment of diseases; for even Dr. Maclaurin, his informer, did not practically know it. It is true, that the treatment, and the effect of that treatment, in the hospital at Chatham, might have been seen by any one; but it is also true, that Dr. Maclaurin was scarcely ever seen where the acute diseases were; for the duty assigned to him did not call him to witness that part of the business. He has therefore spoken on presumption. But besides this gentleman's communications, official and perhaps private, there appear to have been conveyed to the army medical board, as materials for an important design, some scattered papers containing prescriptions for the sick, procured improperly, in as much as they were procured clandestinely, though they contained no secret.—These materials were prepared, and the mine seemed to have been charged as early as May; but it was carefully covered up, till a severe sickness, and consequently a certain degree of mortality, in the latter end of the year 1801, appeared to present an opportunity of exploding it with effect. The communications of Dr. Maclaurin of different dates, the letters of hospital mates Morison and Andrews, with the evidences of the purloined leaves of the prescription books, were now all mustered in array, and played off in their turn; but the chief batteries seem to be the declamations of Dr. Maclaurin, a part of which, as relating to medical practice, is here transcribed, to furnish the reader with some idea of the science of the physician of the British forces, and

known by the public. The person who asserts its effects to be debilitating, either does not know it, or does not know the laws and principles of action in animal economy,—the laws which direct the application of his means. These means, in operation,

and of the discernment of the physician-general of the British army.—Letter dated “London, Dec. 7th 1801.”—Extract—“I have had much experience in the diseases of soldiers, at home, I must deprecate the ‘horrid system of depletion,’ I am but too well aware of its dreadful tendency, of its fatality; by a too free use of the lancet, by warm bathing instantly succeeded by cold bathing, by strong emetics, drastic purges, mercurials and low diet, sick are speedily reduced, even Herculean strength must soon sink under their baneful influence; how much, how dreadfully then must their effects be increased when indiscriminately employed, when, without reference to the constitution of the patient, the same means are adopted; merely because the symptoms are the same, the same system of depletion is pursued; *the loss of life must be prodigious.*” The letter is a long one, but as the physician-general has adopted the assertions made in it, and thereby pledged himself for their accuracy, it will not be necessary to occupy time or paper in transcribing any more of such a furious production. It will however be proper in this place to give an example of that horrid system of depletion, so severely censured; and it will be proper to take it from an example, which had witnesses, not supposed to be biassed in its favour. It shall be one of the last, which the author treated at the hospital of the army depôt: it was under treatment at the time of the inspection by the special medical board, may be referred to, and authenticated if doubt arise.—Robert Thomson, head surgery man, was attacked on the 29th of December with symptoms of fever of uncommon alarm:—the head-ach was intolerable, with an oppressive sensation in the

operation, are positively the reverse of debilitating powers; for whatever goes directly to destroy the chain of diseased action, whether it

the body, as if the chest were squeezed in a press; the countenance was dark and agitated; the hands and all the members tremulous and unsteady, as in St. Vitus's dance; the heat deep and concentrated; the pulse small and labouring;—the expression of distress great. He was seen by the physician, into whose hands he was likely to pass in a day or two. That gentleman did not prescribe; for he had not yet entered upon duty; but he noticed the danger of the case. When the business of the ward was finished, Thomson was again examined; for his case required more than common attention. The physician alluded to was not present; but the assistant-surgeon attended, and bound up the arm, in order that some blood might be taken away; for though the symptoms were not such as are ordinarily thought to indicate bleeding, yet bleeding appeared to be a preliminary remedy, and the only one which was capable of averting organic destruction. The operation was therefore determined upon. One pound of blood produced no material change; two only little relief, but an indication arose in the course of the process, giving reason to believe, that the purpose would be attained by perseverance. The blood was therefore permitted to flow;—three pounds removed the head-ach and the pressure from the chest; the labouring tumult of circulation, as communicated by the pulse, disappeared; eight ounces more, in all fifty-six, released him, as he expressed it, from chains and horrors. The countenance brightened up,—he neither became faint nor pale. The extremities,—the legs and thighs, were wrapt in flannels wrung out of hot water; the chest was covered with a very large blister; emetic tartar, with opium, was given, in a manner, and with a management, intended to direct the effect of the remedy in operation, principally towards the skin; tea or buillon were given for drink, and ordered to

L be

it be bleeding, vomiting, purging, blistering or bathing, is either directly stimulating in its own nature, or preparatory of a condition previous

be drunk very hot. In three or four hours, there were signs that the danger of the disease was past; and in four days he returned to his duty.—He got neither wine nor strong drink.

The relation of the above case may, perhaps, surprise the physician-general, and others beside him; but it is authentic; and the result shews the value, or rather the necessity of a physician superintending the actual operation of the remedies which he prescribes. Few persons, it is believed, would have ordered fifty-six ounces of blood to be taken away at one time; yet the complete effect was not produced in this case, till the quantity had exceeded the third pound. This was a case of bleeding without measure in the prescription book; but the measure was determined by effects under the operation, the only measure, which, in reality, is not indiscriminate, and at random. The principle applies in other treatment besides bleeding; for the effect of other remedies as well as bleeding is to be observed in its commencement, watched in its progress, and conducted to complete issue, by discretionary variation in management. The power of conducting matters in this manner is more in the hands of army practitioners, than others; and more in the hands of prescribing apothecaries, than of regular physicians. It seems but a humble mode of acting; but it is the only one which is not attended with great chance of error, or with non-effect; for the active powers of animal economy, though of the same kind in all men, yet vary so much in force and condition in individuals, that it is often necessary to measure the quantity of means, employed to produce effect, by actual experiment in the case. The lofty physician who disdains this, and every one disdains it who does not ascertain the precise action of prescription by his own observation, avoids error only by chance. He sometimes does too much; he oftener does nothing.

to stimulation, disembarassing the system, and leaving the excitable power at liberty to resume its natural and healthy action; a movement to which it is solicited by a variety of applications, powerful in their effect, but different in their operation from that of large allowances of beef and wine.

The specified points of accusation, stated in the letter of the physician and surgeon, have been noticed. They are followed by an inference, "that so far from economy being effected, there has been a very serious loss of men, and ultimately a great expenditure*."

Inference
of loss of
men.

This

* The inference of the physician and surgeon respecting the loss of men has been drawn from the following source: "The plan, however striking it may at first appear, has not even economy to recommend it, it is in truth more expensive, not to say one word upon the foul inhumanity of such conduct. Patients are longer in a state of disease, relapses more frequent, convalescence is retarded, the sick recover more slowly, are longer feeble; while by a liberal plan the sick recover more speedily, relapses are rare, the convalescent is quickly improved into the healthy active soldier, and this consistent with the utmost frugality. I doubt not with even smaller expence *eventually* to government, than the meagre plan, for

compare the loss to government by long and frequent illnesses of soldiers, by tedious recoveries, by more frequent deaths, and that deaths will be more frequent I unequivocally, unreservedly assert. Compare these with the effects of a free diet, the free use of wine when requisite, tempered with prudent management, I risk myself on the result of the comparison. *The*

This inference seems to place the supposed unprecedented mortality to the account of diminished diet, and to the withholding of other matters, necessary for the good of the sick. The opinion is not charitably expressed; if not true, it is wicked. The annexed returns*, which are official and authentic documents, prove the assertion of loss of men, as compared with loss in hospitals similarly circumstanced, to be the reverse of the truth. The inference is thus false;—there it must rest, for a calumny is not a subject of calm contemplation.

Cause for
superfeding
the author
in medical
duty.

The inference respecting loss of men was necessarily to be followed by the recommendation of a remedy. It is thus expressed: "These returns called upon us to recommend that two physicians should be sent immediately to the isle of Wight." The returns of the hospitals are annexed. They shew the grounds on which the physician and surgeon-general acted, with the advantages resulting from their recommendation. It is admitted, that the mortality was greater here than in hospitals consisting chiefly of itch, sore legs, and venereal complaints; but it is less, notwithstanding the adventitious malignity which

effect of the latter will be found the best economy." Dr. Maclaurin's letter to the army medical board, dated London, Dec. 7th, 1801. —The same opinion is expressed in the letter dated 8th of June.

* Table V.

prevailed

prevailed for some time at the depôt, than in similar diseases under other treatment, at other places. If the author's conduct did not give satisfaction, he might have been removed, without the addition of insult or injury,—without the necessity of recurring to a fabricated cause. For it is proper to be known, that the appointment took place without his solicitation, was indeed determined upon without his knowledge. He accepted of it, because he believed his services would be useful; he resigned it when they ceased to be so; for the duty of the office which he held, by the recommendation of the physician and surgeon-general, was at last circumscribed, nearly to that of receiving the salary. *

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* The author of this statement was appointed physician to the forces, and head of Chatham hospital, in November 1800, by his Royal Highness the Commander in Chief, contrary to the expectation and wishes of the army medical board; a mark of approbation which probably heightened, in secret an enmity against him, which had already shewn itself, in strong colours, on different occasions. The author not being a graduate of Oxford or Cambridge, licentiate of the college of physicians of London, nor, in fact, a member of any learned corporation, was not held in the opinion of the physician-general to be a regular physician, or competent to execute a physician's duty. That duty was, however, assigned to him by the terms of his commission; and, acting with a pure conscience, he prepared himself to discharge it in the best manner he could. The recruiting service was at this time active; and the influx of recruits to the depôt at Chatham being then unusually great, the sickness was, as it might be expected to be, in proportion. The medical assistance was not deemed sufficient, either in number or

Letters.

The letter of the physician and surgeon-general proceeds : " We now beg leave to advert to the inclosed letters, No. 1, 2, 3, 4, and this we do in obedience to your commands when we had the honour of waiting on you." The letters alluded

quality. A requisition was therefore made for an addition, and a suggestion for a change ; for it will readily be allowed, that a person who undertakes a trust so important as the care of an hospital, ought to be indulged with a choice of his instruments ; for they are not mere mechanical tools, any one of which, of the same form, will equally answer the purpose. The duties of the chief of the medical department, at the army depôt, are of various kinds, and thus sometimes interfere with the duty due to actual attendance upon the sick in hospital. In provision against this contingency of occasional interruption from hospital duty, the assistance of Dr. Borland, assistant inspector of hospitals, was requested ; a person, of whose skill and diligence there existed ample testimonies, in different conditions and circumstances of service. But though a physician, he is not a regular physician ; and, though he had been entrusted during the whole war with the care of men's lives, and been the chief medical officer in very responsible situations, it was not thought proper that he should be intrusted in England to prescribe for a sick soldier at the army depôt, even under the immediate superintendence of a superior. A physician, without experience in military service, was proposed for this purpose by the physician-general, and refused by the author. Dr. Borland was sent at last to the depôt as assistant-inspector, and Dr. Maclaurin, as physician. The physician was supernumerary, and the appointment superfluous ; but it was not thought at the time that there would result any other evil from it besides that of superfluity. Whether there originally existed a design in the mind of the chiefs of the medical department to effect, by secret means, the purpose which is at last effected, must rest with themselves ; but

alluded to are two from Dr. Maclaurin; one dated the 8th of June, and one the 7th of December. The general meaning is the same in both, only the last is most virulently invective.—The others, one from acting hospital-mate Andrews,

but there is positive proof in the informations and letters alluded to in Dr. Maclaurin's letter of the 8th of June, 1801, that the physician to the forces acted the part of a spy, or informer, for the physician-general; and it is also true, that he was zealous in his attempts to disturb the harmony of the hospital staff, and insinuate secretly disadvantageous impressions of the hospital administration. His presence at the dépôt, in point of duty, never was necessary; the duty which was allotted to him was light; and as it was found upon trial that, instead of contributing aid, he increased embarrassment, the wards in which he acted were broken up, and the sick otherwise disposed of. He remained at Chatham, but he did no duty; for the author considered, as he ever must consider, that, while intrusted with the responsible duty of an office so important as the charge of an hospital, he could not do otherwise than execute it as becomes an honest man, that is, to the satisfaction of his own mind. If he had assented to what he did not in reality approve, he deserved not to hold a public trust. It depended on higher powers to remove him from his office if he did not appear to be fit for it, but it depended upon himself to act conscientiously as long as he continued to act. The army medical board, in consequence of representations of Dr. Maclaurin, addressed Major-General Hewett on the subject of the hospital duty at the dépôt. General Hewett observed, that he could not be supposed to judge of the professional abilities of medical men; he could only speak to the diligence and attention which were employed in the care of the sick; and on that point he was satisfied; but he recommended it to the board to come to Chatham and look at the matter with its own eyes. The

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surgeon.

draws, dated the 3d of December; the other from Morison, who was hospital-mate at Chatham in the preceding winter. Neither of these persons did duty in the hospital where the sick were, so as to have an opportunity of properly witnessing

surgeon-general, not the physician-general, whose duty it might be supposed to be, came down at an unexpected hour, visited the hospital, examined the mode of administration, expressed satisfaction, and even made an apology for what had happened. Dr. Maclaurin was not restored to duty, but he continued at Chatham, for the purpose of taking charge of such sick men as were probably to be left behind, at the time of the removal of the depôt to the isle of Wight.

It appearing to the author, after the visit of the surgeon-general, that the army medical board did not properly understand the circumstances of Chatham hospital, a letter was transmitted, with the monthly return of June, stating some points of information which it was thought might serve to prevent the board from forming erroneous conclusions. The manner of arrangement, it was observed, was changed; persons infected with itch, for instance, and invalids, men merely disabled from military service, but who had no actual disease, were not now borne upon the hospital establishment; so that the gross number of the hospital patients appeared to be diminished from what it formerly had been, while the serious diseases were increased, for the garrison was more crowded than it usually had been, and small-pox and measles prevailed epidemically. It was known that pains had been taken to give a bad impression of the management of Chatham hospital; and, it was added in this letter, that if the physician-general, to whom the investigation of a matter of this nature is supposed to belong, could bring forward sufficient evidence to convince his Royal Highness, the Commander in Chief, that the capacity of the author was not equal to the management of so important a duty, as the medical charge of the sick

of

fining the author's mode of treatment in acute disease; and, as they had no experience of military service, and even Dr. Maclaurin himself next to none, the opinions which they give respecting the effects upon the health of soldiers in the progress

of the army depôt, or, if there was want of diligence, there could be no doubt, but that his Royal Highness, who is desirous to consult the good of the army, would, without hesitation, replace him (the author) by a person better qualified; that no one ought to occupy an important public situation who does not deserve confidence; and that, for his own part, he should be unwilling to retain it an hour after he ceased to possess confidence. To this an answer was returned, dated Upper Brook-street, July 4th, 1801, signed by Sir Lucas Pepys, T. Keate, and J. Rush, the members of the army medical board,—of which the following is a copy.

“ SIR,

“ We have to acknowledge the receipt of your letter of the 21st ultimo, with the monthly return of sick in Chatham hospital, to which we deem it necessary to say a few words in reply, with regard to the observations you make on the notice taken by us of the great mortality in that hospital; we must beg to say, that no imputation has been attempted to be thrown upon your character; you will admit that it was a circumstance which demanded our most serious consideration, and which, had we passed over silently, would have proved an inattention to the most important part of our duty wholly inexcusable. Your explanation of the cause, viz. the increased number of recruits that pass through the depôt, and the reason you at the same time give for the sick-list not being increased, although the serious cases are more numerous, are satisfactory as far as they go: but we must observe, it was the former circumstance induced the surgeon-general to suppose farther medical aid was necessary in the hospital; and if the slight cases are not admitted to be borne upon the hospital establishment, they must nevertheless require medical assistance.

“ It

progress to recovery, and after return to duty, can only be considered as random assertions, spoken without the means of knowledge, or capacity of forming an opinion, and contradicted expressly by the adjutant's certificate. It may be supposed, with
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“ It is as much our inclination as it is our duty to support the heads of establishments in our department, and in the due execution of their offices : and in justice to the public, to us, and to yourself, you cannot for a moment think that, had we witnessed or supposed any impropriety in your conduct, we should have attacked it by insinuations or uncandid rumours ; but placed in the important situation you are, and enjoying confidence which we can have no motive for wishing to shake, we submit if it is not incumbent on you explicitly to say, whether, considering the great and constant influx of recruits, the various diseases thereby brought into the garrison, and the extent of your duties ; the sufferings of many of the patients might not, in some cases, be mitigated, by calling to your aid farther medical assistance : and as it is our duty to give every proper support to the heads of departments, so must it equally be yours, to support any gentleman who may be directed to do duty under you, which we trust you will in future do.

“ We are, &c. &c.”

To the question, whether farther medical aid would serve to mitigate the sufferings of patients, it was answered ; that, if the duties of the hospital were given to persons possessing more skill, the sufferings of patients might not only sometimes be mitigated, but life perhaps might sometimes be saved ; but unless that was the case, addition would do no good, for the sick had at all times prompt assistance, such as it was. To the other part, which hinted at Dr. MacLaurin, it was answered, that, if circumstances ever should render the assistance of a physician at the hospital of the dépôt necessary, he could not be the person ;—the reasons are clearer now than they were at that time.

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a strong probability of being true, that these persons were scarcely ever on a parade, or had the opportunity of examining soldiers under arms. But whatever may be the ignorance of the assertions, or falsity of the facts, in the letters alluded to, the
 physician

The above letter, dated the 4th of July, when Chatham hospital had ceased, and when the board was in possession of all Dr. Maclaurin's informations, as appears by reference to his letter of date prior to that time, though somewhat equivocal in expression, disavows all imputation of blame, or supposition of blame, as attaching to the author's professional conduct. It is singularly unfortunate for the physician and surgeon-general, that this letter exists; for as their charges are nothing more than a transcript of Dr. Maclaurin's assertions, which were before them in the month of June, and to which nothing after that period could be added, it follows, that they either disbelieved them at that time, or that they sanctioned, with their official signature, the disavowal of a matter which they knew or believed to be true in fact. In the first case, they must be supposed to have received, encouraged, and concealed, the calumnies of an inferior against a superior officer, to the subversion of discipline and good order, even to the dereliction of common candour; in the other, there is want of truth and courage, in disavowing formally what they positively believed to be true; and if they believed it to be true, they may also be thought to be amenable to the public in neglecting, for the space of six months, to propose a remedy for an evil of a nature important to the interests of humanity, and the good of the British army. The physician and surgeon-general might have been supposed to have preserved consistency, though they would have committed themselves to speak without evidence, had they confined themselves to the errors of the management of the hospital in the isle of Wight, for they had not acquitted the author by any written document. The letter of the 4th of July,
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physician and surgeon-general must bear them; for they have made them their own; they may feel now, perhaps, that they have submitted their shoulders to a heavy load.

Diet-table.

“It appears, therefore, that Dr. Jackson has altered the established diet-table, as used in all our hospitals, and sanctioned by his Royal Highness the Commander in Chief; and that he has reduced many other articles of comfort and nourishment.” This clause is to be considered in two points of view; first, as to the propriety of the alterations which were made; and, secondly, as to the authority of making them. The alterations appear in the diet-tables annexed, and may be judged of by persons of common sense, though not of the medical profession. Tea, and beef-tea, or bouillon, when well prepared, are better relished by a sick man than gruels and greasy broth. And if tea and bouillon be allowed in kind and quality to be agreeable to the taste, and generally suitable to the condition of sick persons, the quantity, by the rule of distribution formerly mentioned, was directed to be measured by the real wants. For though it be true, that beef and bread were never to be found under a sick man’s pillow, nor were nurses or orderlies ever seen staggering drunk with the excess of wine,

Low diet.

viz. “in justice to the public, to us, and to yourself, you cannot for a moment think, that had we witnessed or supposed any impropriety in your conduct,” &c. puts Chatham hospital out of the question.

wine, which the patients did not relish, or were unable to consume; yet, whatever was thought to be useful was ordered; no more was ordered than what was useful; and what was ordered, was known to be given.

If the higher scales of diet be compared with similar scales of diet in other hospitals, the quantity of beef and bread is found to be diminished; but there is addition of other articles which gives mixture and variety, supposed to be useful in the purposes of digestion. Potatoes were, in this view, substituted for a portion of the usual allowance of bread, and it is believed with advantage. The breakfast and supper of rice milk, or oatmeal gruel with milk, may be allowed to claim a preference over the established breakfast of other hospitals. To most persons gruel, or rice with milk, will be more agreeable than gruel without milk, or the remainder of the dinner broth. Small beer, in quantity a pint, appeared to be a sufficient allowance of drink at dinner:—breakfast and supper do not require to be washed down with beverage of any kind.—Upon the whole, the diet of the hospital of the depôt, meat and drink included, is, as appears in the tables annexed, inferior in total quantity to the established diet of other hospitals in England, by one pound and a half. It is, however, superior to the allowed diet, or ration of troops on board of transport ships. It is a better, and even a fuller diet than soldiers are allowed, or can afford in barracks, and it is a diet of which no man in
hospital

Half and
full diet.

hospital ever made a complaint. It is even perhaps too full.

Extra allowance.

The letter states, " That he had reduced many other articles of comfort and nourishment." The allowance of wine was certainly diminished, for it was not given unless where it was likely to be useful; but if the table of expenditure be consulted, the physician-general himself may be convinced, that refreshments were allowed at the hospital of the depôt, which are rarely admitted in other hospitals. Even the caprices of appetite were indulged; for no man ever expressed a wish which was not gratified, unless the gratification of it was thought to be hurtful.—The attendants in the hospital are capable of speaking to this point, if it should be doubted.

The tables, which are at present alluded to, shew the general rates of diet for the different classes of the sick. The table of expenditure, which accompanies the abstract of the accounts, shews the kind and quantity of extra refreshment prescribed for a given number of men in a given time. Those who choose to inquire farther into the subject, may thus be enabled to form an opinion, from correct evidence, of the propriety,—the probable good or bad effects of the alterations which were made.

Authority to change.

It is admitted, that a desire of innovation is dangerous to the government of hospitals, as well as to the government of states; for, though it be not difficult to change, or to destroy, yet, with-

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out the knowledge of a principle on which to repair, or to rebuild, the labour will not profit. That which existed will be rendered unsafe and insufficient,—a heap of rubbish, instead of an edifice. But though a desire of innovation, without the certain knowledge of a principle on which to rebuild, is reprehensible, as its effects may be destructive when applied to the business of life; yet to continue in a bad road, with knowledge of a better, is stupid, if not criminal. The author of this statement pleads guilty to the charge of attempting to introduce a correct and economical system of management into British hospitals; but his view goes to reform, rather than to innovation. In the American war, the health of the army was provided for at a comparatively small expence; and, if an inference is to be drawn from effects, it was well taken care of. For, though some part of America be unhealthy, the sickness was, in reality, sometimes very great, yet mortality was, comparatively, of small account. In the late war, hospital expence occupies a conspicuous column in the statements of public expenditure: hospital mortality accounts principally for the diminution of the army. In these two points, indeed, the late war is held to be unexampled. The scene of action was the same, or similar to that of former wars. If a difference in effect existed, it necessarily had a cause. To find out a cause of such importance, is an object of national concern; and the investigation of it ought to be committed

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to able hands. The author does not presume to touch upon it ; he only means to observe in this place, in justification of the alterations which he introduced into the diet-tables of the hospital, that he felt it, as he ever must feel it, to be the duty of a physician, charged with the direction of an hospital, and the care of human life, to give to the sick whatever he believes will be useful to them ; and in order to preserve discipline and economy, without which his prescriptions will be of little value, to give nothing more than what is useful. This is the principle which directed his conduct. The alteration proposed, and carried into execution, on the subject of diet, was known to the army medical board at an early period. It was publicly known to the surgeon-general, in the month of June, when he visited the hospital at Chatham. It was then examined by him, and approved ; at least not represented as wrong, till circumstances connected it with something different from public utility.

Effects of
economy.

The concluding paragraph of the letter is thus expressed : “ Upon the whole it will appear, that Dr. Jackson’s system of economy is not for the advantage of the troops, and should not be introduced into our home general hospitals ; and we humbly submit, that it will be necessary to enforce the printed regulations for general hospitals in the isle of Wight.” This article is so vaguely worded, that it is not clear in what light it should be considered, whether as relating to
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the sick actually in hospital, and under disease; or to the effects which remain after their pretended cure, and dismissal to duty. If to the first, it has its answer in the hospital returns annexed, which shew the mortality to have been less, under the regimen so severely arraigned, than under that which immediately followed. If to the last, viz. imperfect recovery, as the effect of medical treatment, such military officers, as were upon the spot, may perhaps be allowed to be as good judges as the physician-general, who never saw the soldiers of the depôt, and who probably never in his life saw soldiers under arms, unless by chance in Hyde-park, or at the Horse-guards. The general, under whose command the army depôt is placed, may be supposed to know something of the treatment of the sick in hospital, as far at least as concerns the general result,—the condition of health at the time of dismissal from the sick list,—for such knowledge is comprehended in his official duty. In a letter to the special board, appointed to investigate the management of the hospitals in the isle of Wight, he stated officially, that no complaint was ever made to him, or to any officer under his command, by any soldier belonging to the garrison, of mal-treatment in hospital. And, if any cause of complaint had existed, he adds, that it must have been known, for the ear is open to receive the complaints of soldiers. There exists a regulation, and it is duly attended to, that no one shall be permitted to

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leave

leave the depôt with a grievance unredressed. Soldiers are obliged to declare their grievances, or to declare that they have not any. If no complaint was made against hospital treatment, or hospital officers, by any one soldier of the garrison, it is to be presumed, that no one soldier had a sense of wrong being done to him; for soldiers are not slow to complain, where they know they will be listened to, and can meet with redress. The general himself did not perceive any wrong, or mal-treatment. If he did not perceive it, it is not likely that it existed, for he knows what soldiers are, and what they ought to be, in all conditions of service. His official opinion may therefore, perhaps, be admitted to be put in the balance against the vague assertion, in the letter of the physician and surgeon-general, "that the system of economy was not to the advantage of the troops." The language is loose, but the expression, "not to the advantage," may be construed to imply detriment. This, it is said, was not detected by the general, or by any officer under his command, who either visited the hospital, or had the charge of the men after their return to duty. If not detected, it could not be very notorious, without a combination among all the officers at the depôt, military and medical, to betray their trust.

Effects of
Diet.

The recommendation, "to enforce the printed regulations for general hospitals in the isle of Wight," which closes the letter of the physician and surgeon-general, calls for a remark on the subject

subject of the diet. In a country, and in an age, where every animal, man or beast, is supposed to acquire powers and energies according to its feeding, the opinion, which recommends an abstemious or moderate diet for sick persons, more properly for persons recovering from sickness, is not likely to meet with a favourable reception. The author is aware of the prejudice which he has to combat ; for here appetite contends against reason, and the admonitions of experience impress but a feeble lesson. It is observed, that where disease has entirely ceased, the body soon acquires its lost plumpness and good looks, under a course of full living ; but, it is also observed, that the balance of health is then ticklish, and easily overturned. The vulgar, even in common cases, look for the causes of disease in errors of diet ; and, in most cases of recovery from disease, attribute relapse to transgression of the prescribed rules of regimen. Physicians of correct observation have noted, in various ages and climates, the mischiefs of full living in a state of recovery from acute disease. They have accordingly prescribed rules of abstinence, with more or less rigour ; but some new lights have arisen in the present age ; and, as the British nation claims the discovery, the British army has been a striking subject of the experiment. Instead of a spare and measured diet, formerly prescribed for persons recovering from acute disease, the doctrine of the present day, on this head, is not merely to satiate, but to gorge.

The diet of convalescents, in military hospitals, is fixed, by regulation, to a higher measure, than what is allowed to soldiers in health, performing military duty. The rule, like other new discoveries, occasions surprise, for it appears to contradict all former experience among all nations; but, though it may appear extraordinary, to those who are not among the number of the enlightened, it may still, notwithstanding, be true. That it may be fairly viewed in all its circumstances, it will be proper to remark, that it is prescribed by his Majesty's regulations, that the quantity of meat allowed to soldiers in barracks shall not exceed three quarters of a pound, per day, for each man. In general hospitals, a pound of meat is ordered for every man on full diet, with the implied clause, that it be a pound of meat, dressed, and without bone. In former times the quantity of the regulated hospital diet was below the standard of the common ration. Diseases were then often fatal; and, according to the nature of the disease, relapse took place occasionally. In a state of uncertainty, it might be warrantable to try, if the effects of a proportional increase would succeed better. The experiment appears to have been made on the continent, in the year 1794 and 1795. The hospital ration of beef was there fixed at one pound per day,—dressed, and without bone; and wine was almost a common beverage. The trial, it is believed, had fair play:—neither sick, nor attendants on sick, were starved or stinted; yet the

the mortality exceeded all example of mortality in any former war. The proportion is not perhaps correctly known to any one. It was said by some persons, who made inquiry into the subject, to have amounted to three out of five; but, be it precisely what it may, it was enormously great, by the confession of the whole army. It might, perhaps, be inferred from this example, that, if the high ration of the hospital, in beef and wine, did no harm, directly or indirectly, it did no good, either immediately or ultimately; for a multitude died, and those who escaped with life, returned to their regiments with a broken constitution. This is no loose assertion. It is known to every officer who commanded a corps on that service.

Such is the accusation contained in the letter of the physician and surgeon-general. The motive, which prompted these gentlemen to adopt such a mode of crimination, rests in their own breasts.—They are left in possession of the comforts of it. If the design was good, it is warrantable to say, that the manner was cowardly, contemptible in all its steps. Had the author not been informed, that an impression has gone abroad and gained belief, that the interests of the British army have suffered by the manner, in which the hospital of the army depôt was carried on during his management, he could not have been induced to notice it. Such impression might be injurious to the public service; and on that account the

present mode of explanation has been reluctantly adopted.—The documents annexed are official and authentic:—they will serve to shew where the truth lies.

Special
medical
board.

The accusation contained in the letter of the physician and surgeon-general, presented, through the Secretary at War, to his Royal Highness, the Commander in Chief, instead of calling forth a precipitate censure on the conduct of the author of this statement, was referred to the examination of four persons, appointed specially as a medical board for this express purpose. The board consisted of Sir John Hayes, baronet, Dr. John Hunter, Mr. Weir, and Dr. Pinckard, persons of professional character, and of experience in the management of military hospitals. These gentlemen repaired to the spot, visited the hospitals, took their informations, and made their report; such parts of which as relate to the author's practice and management are here subjoined.

EXTRACT FROM THE REPORT.

“ We found the hospitals at Parkhurst clean, in good order, and every thing well arranged for taking care of the sick as far as the size of the buildings would admit; for notwithstanding many were left in the barracks who ought to have been in the hospitals, several of the wards were greatly overcrowded.

“ We found the mortality, lately prevailing, to be owing to several diseases; chiefly fevers, dysenteries,

dysenteries, inflammations of the lungs, measles and scarlet fever. The dysentery and many of the fevers are the effects of the encampment, that was established during the autumn, and which remained a considerable time upon the same ground. The inflammations of the lungs arise from the present inclement season; the measles are at this time epidemic in the Isle of Wight, and are also, as well as the scarlet fever, kept up by personal infection in the depôt. These diseases would at any time prove the cause of considerable mortality; but their destructive effects are greatly increased by the foul air of the crowded wards of the hospital, which aggravates all their symptoms, and renders them though simple and mild on their first admission, in the end malignant and fatal. Considerable sickness has often prevailed in the depôt, arising out of the nature of the subjects it contained, (young and unseasoned recruits,) yet the concurrence of all the causes of mortality above stated has probably never happened before; particularly the camp diseases, dysenteries and remittent fevers (called gastric in the returns,) and the prevalence of measles, at a season of the year so unfavourable to those attacked by that disease. In these circumstances, and in another which is by no means to be overlooked, that is, the increased number of men in the depôt, we think we see causes adequate to the mortality that has taken place, and which will probably continue for some time longer, particularly if the weather proves severe.

“ The opinion we have stated of the causes of mortality will of itself remove much of the suspicion, if any such existed, of improper practice of the treatment of the diseases by Dr. Jackson. On this subject we feel called upon to express ourselves hypothetically, because the letter of the physician-general and surgeon-general did appear to us, as it seems to have done to you, to convey some such suspicion; yet the subsequent letter of those gentlemen (of which they were so good as to send us a copy,) by totally disavowing any such meaning, leaves no doubt upon that head*.

“ We directed our attention particularly to the diet of the sick, and enquired into the alterations which Dr. Jackson had made in the table of diet. We found his low diet and middle diet including the extra articles of wine, tea, porter, &c. &c., and which are directed according to circumstances, to be framed with judgment; but in the full diet we think there ought to be one pound of bread, and one pound of meat, and one quart of beer daily, as in the general table of diet. And if any reduction of bread be made, for every ounce taken from the bread,

* The letter of the physician and surgeon-general bears a charge of mal-practice and mal-administration in the hospital of the army depôt, in terms as express as well can be. No person, it is presumed, could mistake the meaning of it; but it appears that a letter was afterwards written, totally disavowing the obvious interpretation.— It is often observed in the affairs of men, that those who assert without knowledge are ready to disavow without shame.

three ounces of potatoes should be allowed. This full diet should extend to all the servants of the hospital. At the same time that we give our opinion against the alteration in the full diet, we feel ourselves called upon to remark, that we do not impute any part of the relapses or mortality to this alteration; because the mortality has proceeded chiefly from diseases, in which such a change of diet could have had no bad effect; and because we see the principal cause of relapse to be in the foul air of a crowded hospital and barracks, and the inclemency of the weather, aggravated by scanty clothing, for such we must consider the hospital dress for those convalescents, who are allowed to go into the open air. The alterations made in the diet tables by Dr. Jackson, we judge to have proceeded from the best motives, and the diminution of bread, he stated to us to have been first tried at the suggestion of the surgeon-general.

“ We examined minutely the hospital books, in which the medicines ordered for the sick are entered. Such registers we do not think alone sufficient to furnish evidence for giving judgment on the practice of a physician. For this purpose indeed we do not know any other means than those stated in our first letter to you. But the register was sufficient to convince us that there was no ground for the charge contained in Dr. Maclaurin's letter, of the universal and indiscriminate use of blood letting, and some other remedies

remedies therein mentioned. Dr. Jackson further stated to us, and that upon probable grounds, that Dr. Maclaurin had no adequate means of knowing or judging of his (Dr. Jackson's) practice.

“ We feel ourselves called upon in justice to say that Dr. Jackson appeared to us a zealous, diligent, and meritorious servant of the public, and full of humanity in the discharge of his duty *.”

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* In regard to the remark made upon the full diet, it is necessary to add a note of explanation. In December, 1800, the servants, of the hospital at Chatham, had a certain allowance of pay, without a ration of provisions, contrary to what is the custom in other hospitals. The necessity of procuring provisions, at the market, was inconvenient in itself; and it furnished a pretext for absence, and consequently for neglect of duty, on too many occasions. It was therefore proposed to reduce the amount of the pay, and to substitute a ration, as an equivalent. The commutation was proposed, and accepted with thankfulness, for every one gained by it: but it ensured better attendance to the sick, and on that account was profitable to the public. The quantity of meat allowed was only three quarters of a pound, equal to the quantity established by regulation, for the soldiers in the barracks. It is less, it is true, than the common ration of hospital servants: but no injustice is implied in the lesser quantity, for nothing was taken away. However, as curtailment in this case was merely a matter of economy, the recommendation of the special board was instantly complied with. — The servants got their pound of beef, their pound of bread, and their quart of small beer. But though there was no delay in executing this part of the recommendation; yet that which related to the full diet of patients was attended with

The report of the special board of medical officers, some extracts from which are transcribed above, having been laid before his Royal Highness

with difficulty ; for here there was difference of opinion, on a subject which related to health. It is not, perhaps, in itself a matter of much consequence, whether a recovering man be allowed one pound of bread, or half a pound of bread, and half a pound or three quarters of a pound of potatoes, though the mixture of bread and potatoes appears preferable ; or whether he be allowed one pint, or one quart of small beer to wash down his meal, notwithstanding that the smaller quantity, in the author's opinion, as it ordinarily is sufficient for the purpose, so it consequently is the best ; yet, as the alterations recommended did not appear to be of material moment, as relating to the sick, they were adopted without delay. The allowance of one pound of beef, to be consumed at one meal, as is the custom in British hospitals, seems, from the best information of various experience, to be above the just measure of convalescent diet. It is stated in the report, that no evil had arisen from the curtailed diet of convalescents, in the hospital of the army depôt ; and no specific benefit was pointed out, even no probable benefit was suggested, as likely to accrue from an increased portion. The diet, it may be observed, was reduced in this hospital, not from an idea of economy, but from an opinion of utility, the present being supposed to be a portion of diet, more correctly measured to the real wants of the sick, and the uninterrupted tenor of a convalescent progress. A pound of boiled beef rarely can be consumed by one man, at one time, even if the appetite be keen. If not consumed, it must be thrown away, or put away under the pillow, and so become a nuisance in the ward : (this is a daily occurrence.) If consumed, there are grounds to believe that it serves to accelerate

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Highness the Commander in Chief, the following communication was made to Major-General Hewett, through the Secretary at War.

War-

rate relapse. This is assumed from the difference of effect, observed under different regimen. Relapse, as far as the author's experience goes, is frequent where men are fully fed; it is rare, comparatively speaking, where the portion of diet is measured. It is frequent where the body is left at rest,—and without impression; it is prevented by exercise, even by exercise of exertion; it is prevented, with much certainty, by occasional brisk, even strong purgatives, or by emetics,—a fact which proves that relapse is connected with repletion. This, indeed, is a remark of old standing. It has been noticed by many, and it has been noticed by the author, in an experience of more than thirty years, on various occasions, in different climates, and among different subjects. But, though the bad effects of repletion, and the good effects of abstinence, be visible on innumerable occasions, they were never more strongly exemplified than among the Russian troops in the islands of Jersey and Guernsey, in the year 1800. The Russians are rigid in the observation of Lent. During that period sickness abated, and the hospitals became thin:—If Lent had lasted the whole year, there were grounds to suppose that the hospitals might have been entirely broken up. The difference was striking after the period of fasting, and prayer was past;—the sickness increased, and recovery was less secure. This fact, respecting the Russians, furnishes a strong argument in favour of the benefits of moderate, even of abstemious living; at least it furnishes a proof of the evils of full meals, and of excess. But the doctrine of abstinence is unfashionable and unpopular; and, as it strikes at the very root of the existence of the medical profession, it may be supposed it will meet with opposition, even be combated with learned arguments. But there is one point undeniable,

War-Office, 16th Jan. 1802.

(C O P Y.)

“ SIR,

“ I have the honor to inclose for your information a copy of the report of the special board of medical officers, appointed to investigate the several circumstances, lately represented by the physician and surgeon general, relative to the sick in the military hospitals in the isle of Wight, and to acquaint you, that his
Royal

deniable, that abstemious and sober people, nationally or individually, live perhaps longer, certainly enjoy better health without the knowledge of Doctors, than the pampered and luxurious do with all their aid.—To proceed, the amount of the regular full diet in British hospitals, meat and drink included, is seven pounds per day ;—the dinner alone amounts to five ; in the hospitals of the dépôt the daily amount is five and a half ;—the dinner three and a half ;—but the proportion of meat is reduced by one half. The scale is too high, perhaps, in both. It is higher, even in the hospital of the dépôt, when all allowances are taken into the account, than it is in barracks. There is no obvious reason why the diet of a man who does no work, and who scarcely takes any exercise, should be higher than that of a man who has to perform military duty ; repletion is a necessary consequence, and relapse is known to be a consequence of repletion. In the hospitals of the continental military powers, where this subject has been studied and appears to be understood, the full diet of the convalescent does not exceed the ration of the soldier on duty.

Royal Highness has perused this report with great satisfaction, as containing a clear and able statement of the causes of the diseases prevalent among the troops in the isle of Wight, of the several matters connected with the treatment of the sick, and the local situation of the barracks and hospitals, and as reflecting much credit on the very respectable professional gentlemen employed on this special service.

“ His Royal Highness conceives the unanimous opinion of the board, to have exculpated Dr. Jackson from all improper practice in the treatment of diseases, and in the care of the sick, and is gratified in seeing, that an opportunity has thus been given to that most zealous officer, of proving his fitness for the important situation in which he is placed.”

It is believed, that the physician and surgeon-general will readily excuse the suppression of the remaining part of this communication. If the representation made by them, was not found to be grounded; and if they employed means in the fabrication of it, not consistent with the rules of military discipline, it will not be expected that their conduct met with the praise of the Commander in Chief.”

The sequel of the story is not long. The army medical board had never, till the 10th of December, exercised the authority of sending peremptory orders to the head of the hospital of the army dépôt. All communications of importance,

portance, respecting the medical arrangements of the establishment, were expected to be notified to the general commanding. The physicians therefore, who were ordered to the Isle of Wight, by the authority of the surgeon-general, to take the medical charge of the hospital, not being notified through the regular channel, were not allowed to enter upon duty, till the pleasure of the commander in chief was known. Application was made to obtain information on this head. It was signified to be His Royal Highness's intention, that the physicians, who had arrived in the Isle of Wight, should act for the time. In consequence of this information, the charge of the sick would have instantly been delivered over to them, had it not been then made known, that an investigation of the management of the hospital was to take place. And, as it was stated, that this would happen without delay, it was judged to be proper, both in justice to the public, and to the person accused,—not to change any part of the plan,—the practice or the administration, till every thing had been seen and examined as it stood, by the officers specially appointed for the purpose of making such examination. This was done on the 30th of December, 1801, and, on the 1st of January, 1802, the medical charge was given up to the army physicians, agreeable to the directions which had been received. The hospital, it may be observed, was then in circumstances,

cumstances, respecting disease, nearly similar to those of the last three months; only the sickness, as appears by the abstract of weekly * movement annexed, was upon the decline. Extracts from the report of the special medical board, as far as relates to the condition and management of the hospital, are inserted above; as also the opinion of His Royal Highness, the commander in chief, on the information conveyed in that report. As the mal-practice and mal-administration stated in the accusation, did not appear to be substantiated in the investigation, it was to be presumed that the author would again resume the medical duty. It probably was so intended; but as a question had been moved respecting authority, he took the liberty at this time to present some propositions, which he thought necessary to be considered, in order that the limits of his office might be precisely defined, so as to prevent difficulty and embarrassment in future. The proposition, which principally concerns the present question, related to a request of exemption from direct communication with the physician and surgeon-general; suggesting in this case, that such business, as regarded the sick of the dépôt and required reference to higher powers, might be transacted through the military officer commanding on the spot. The proposition was not officially answered, but it did not

* Table VI.

appear to be approved ; for in a few days, an order was transmitted to the author, from the physician and surgeon-general, directing that the medical charge of the sick should remain in the hands of the army physicians, and that his duty should be confined to that of inspection. He had considered himself to be superseded by the letter of the 10th of December alluded to. This confirmed it,—without cause assigned, for the representations of mal-practice did not, upon examination, appear to be grounded. By the arrangement now adopted, the office of head of the hospital, as it was termed, became a nominal or insignificant office, almost confined to writing now and then an official letter and signing official returns. For physicians, or persons who have the immediate care of sick, must be supposed to suggest and to direct virtually all the important business which concerns hospitals, if it be intended that the sick shall reap the full benefit of medical skill. As the author therefore felt that he had no power of doing good, and, as he might stand in the way of others by remaining at the dépôt, he desired leave to resign an appointment, which, though it would have continued to bring its emolument, had ceased to be honourable or useful. The resignation was accepted.

The author has little more to add upon this subject ; for it is not a subject on which one can dwell with pleasure ; nor is it interesting to any

one, but as it is connected with the preceding part of the work. To fix the value of that it is indispensably necessary. For unless the accusations contained in the letter of the physician and surgeon-general be totally groundless, indeed capable of demonstrative refutation, the author does not think he would be warranted to state his plans and practices,—or to recommend them for attention. The returns and notices, annexed to this statement, shew, by incontrovertible evidence, that the hospital of the army depôt, while under his management, stands on advantageous ground, in point of mortality in similar diseases, with the same hospital at other periods, or with other hospitals* in other places. The cure also appears, by good testimony, to have been equally perfect,† as in the periods preceding or following. The time, required for cure, not more than half of what it was in the ‡ period which immediately succeeded his suspension from medical duty, or which preceded his appointment. He is not desirous to obtrude himself on public notice; but he can scarcely avoid saying, that after the best part of his life had been devoted to public service, and that his services had been as toilsome and as dangerous, as those of any other medical man in the army, he had not calculated on retiring with a mark of reproach. He expected no praise, and he solicited no reward, for he believed that he had only done his

* Tab. V.

† Adjutant's Certificate.

‡ Tab. X.

duty;

duty; but, as he was also conscious that he had done his duty, he neither expected censure nor feared displeasure. He has stated his conduct and the motives of his conduct with plainness and truth. If the public be convinced from the evidence before it, that he has acted in principle as becomes an honest man; and that in judgment, as manifested in result, he has not erred in the management of his trust, he will hold himself acquitted of his duty, and be content.

day; but, as he was the author of the
book, he was not expected to be
treated as a deity. He was, however,
and the words of his command, with
and a sign. If the people be
the evidence before it, that he is
able as a prophet, as a man, and
judgment, as a man, to be
and the management of his staff, he will
hold a sign of his day, and he can

APPENDIX;

COMPRISING

AN Attempt to explain the Action of
Causes in the Production of Fevers, and
the Action of Remedies, employed in
their Cure.

Nec mea dona, studio tibi disposita fideli,
Prius quam intellecta sint, contempta relinquo.

Lucretius.—Lib. I.

APPENDIX

CONTAINING

An Attempt to explain the Action of
Gases in the Production of Fevers, and
the Action of Remedies, employed in
their Cure.

THESE were done, under the Direction of
JAMES CLARK, Esq. M.D. F.R.S. &c.
Lecturer on the Principles of Medicine.

ADVERTISEMENT.

An Appendix of so great extent as the present, added to so small a work as the preceding, not being after a common rule, requires a reason to shew necessity or usefulness. The reason is shortly this. The author's manner of treating diseases was blamed by the physician-general of the British army, as appears in the preceding examination. The official documents annexed may be considered as decisive proof, if opinion is to be formed from effect, that the assertion was not well founded; but he still has thought it might be useful to explain, as concisely as possible, the principles upon which he has acted, or continues to act; for they are not precisely the same with those which generally influence medical practice in the present time.

APPENDIX.

Remarks on the Operation of the Causes which disturb the natural Rhythm of Movement in animal Bodies, that is, which excite febrile Action; on the Operation of Remedies which arrest the Course of the disturbed Rhythm, or which restore the natural Movement after the false or artificial Series is broken.

THE world, and all things in it, called into existence by Almighty power, rose up in order,—a creation of immeasurable extent and endless variety,—an universe consisting of separate and independent parts or systems, moving in a series of circles, circle within circle, from incomprehensible magnitude to a minuteness which escapes human observation; the whole connected in a chain of order, the various organs of the whole, and the various organs of the separate parts moving in due and harmonious rhythm. A creation, arising by this incomprehensible power, can only be supposed to be upheld in its course, and directed to its object by the presence of the same ineffable cause which gave it existence. The operation of this cause is manifested in the expression of the qualities impressed

impressed upon the elementary principles of things. The subject is vast and unfathomable. The human mind, which dares to contemplate it, is lost in the immensity of the object,—bereft of distinct idea, it is absorbed in a source of light. Such contemplations, though completing the circle of intellectual operation, and implying the highest and last office of man, terminate in silent adoration of a Being whose existence is manifested every where, but whose nature it is not to be known. The immortal spirit may think, but the mortal tongue cannot speak intelligibly of the Deity, and the primary principles of his laws. The first qualities of things are even hidden from our view; and there is a point in the simplest object of nature's works, beyond which human knowledge cannot penetrate. But though the first principle be concealed, the useful principle, as relating to man, is discoverable. The boundary of knowledge is capable of being extended, and the relation of things, with each other, is capable of being traced and defined. Effects are open to the observation of attentive minds; and, as effects are the causes of other effects through a long chain of connection, some progress may be made, and some progress actually has been made in classing and arranging consecutive movements. Thus, in what concerns the economy of animal bodies the laws are simple and uniform; they are open to observation, and attentive observation shews, even to demonstration, that a variety of seemingly opposite results hinge upon

upon a common centre. This is the exterior circle, and it is in this circle only that the labours of man are employed with advantage:—the interior is cut off from view by an impenetrable veil.

The presence of life in animal bodies is indicated by capability of action; organic life is expressed by a train of organic movements; health, or the perfection of life by a certain rhythm and harmony of movement among complicated actions, followed by effect in function. If this be true, and it is a matter of simple observation, it follows that those causes, which disturb the rhythm of movement in order of time, or which change the quantity of its force, are causes of disease; as those which completely subvert it, so as to annul motion, are the causes of death. The rhythm of movement here alluded to, as disturbed in order of time, or in quantity of force by different causes, is a visible fact in most cases of disease. It is conspicuously so in the febrile class, for as this class affects parts of the system where motion is obviously connected with function, the rise, progress and terminations of the derangement are easily observed, so as to be capable of being traced with accuracy.

The causes which primarily derange the action of the moving fibre in its smallest circle, at which point the elaboratory of the vital principle may be supposed to exist, as well as in the wider circle of organic movement, are various in kind, and diversified by combination. But though varied in kind, the manifestation of the effect is uniformly

formly discoverable in the mode and qualities of force of action. The expression of life, or animal action may be considered as a forced condition. The nature of the radical quality in which it consists is not known; but the expression of it is visibly called forth by the application of peculiar and appropriate causes. Its manifestation is thus the effect of stimulation. A pause of rest is the consequence of action; for it is a fundamental law of nature, that whatever is moved to action by stimulation, tends to rest when the action, the effect of the stimulation is produced. Thus, as action is the consequence of stimulation, and a tendency to rest the consequence of an action completed, alternate action and rest, however varied in period, necessarily follow each other while cause and condition of organization preserve their relations. A certain rhythm of movement is consequently a condition inseparable from a living animal body; as the integrity of the order and force of that rhythm is the index of health. But as movement is an expression of the presence of life, and rhythmical movement an expression of health; so the mode of health is liable to be perverted, the motions of the machine to be even finally arrested or annulled. The scale of the deranged modes is extensive; and as the modes are various, though errors, they have their train of errors, and their productive effects variously multiplied and combined.

The application of atmospheric air to the bodies of animals, intended to inhabit the surface of the earth,

earth, appears to be the common stimulant of life; abstraction of air, the cause of rest or of death. But as the air of the common atmosphere is a compound body, and as its mixture is of different proportions, under different circumstances and conditions; so the stimulating quality of its constitution seems to vary according to causes of accident, occasioning variation in the proportion of its elements. According to excess or defect in the quantity of the stimulating quality, the effect upon the living principle of the animal machine may be supposed to be. The excess necessarily provokes a more rapid and vigorous movement. The defect is accompanied with languor, for it permits an approach to rest. The scale of the limits of health is not very extensive. It admits of some variation, both in point of time and of force; but causes which push the movement beyond certain bounds, or which permit it to rest short of certain bounds, break the rule of harmony, and terminate the effective or healthy mode. A mode of error then arises, which proceeds through an extensive and irregular scale, varying widely in its forms, but generally moving under the influence of the figure or key of movement at which it originally began. This mode of error, called disease, seems to originate in many cases from what is supposed to be deviation, though inexplicable deviation in the proportions and conditions of the elements of the atmosphere; but it also frequently arises from the operation of extraneous matters, that
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is, from adventitious qualities enveloped or suspended in the mixture of the atmosphere, without forming part of its natural constitution. The errors or diseases thus produced, from whatever source they may arise, are uniformly accompanied with a marked want of effect in function. The scale of health (and health consists in action of effect,) has only one mode. The expression of want of effect in function, the consequence of derangement in rhythmical movement, the effect of the action of a preceding cause, is commonly termed debility. This word of late has risen to great importance; for debility is, at present, considered by most persons as the primary hinge of action in febrile diseases. It is a fact which will not be denied by any one, that an expression of debility, that is, want of effect in function, is an almost constant indication of the action of the causes of fever; but it is not from thence to be inferred that it is the first step in the derangement. It is, in reality, the immediate and direct consequence of disturbed rhythm in movement, whether occasioned by an irritating or a sedative cause, and whether expressed by an apparently increased or diminished force of action. It is posterior, appearing in its train, continuing while it continues, disappearing when it is removed;—and frequently removed by the operation of causes which common opinion considers to be of the debilitating class; so that language is here apparently at variance with itself.—But as the subject is of importance, from the influence which the doctrine at present has on the treatment

ment of diseases, particularly febrile diseases, it becomes necessary to examine its foundations with some attention. The limits of an appendix do not indeed permit of the length of discussion, which a subject of so important a nature may be thought to require; but, it is believed, that a series of facts may be brought into a narrow compass, which will be sufficient to prove, that debility, though an expression of the effect of a febrile movement, is not a primary action of the cause of fever; and hence, that it is not necessarily followed by a train of consequences.

A change in the rhythm of movement is the first visible, even supposable step of action, arising from the operation of the causes of fever. Such derangement seems to proceed, either from the application of powers, which are in their own nature stimulant of the ordinary movements of health, erring by excess or defect of just quantity; or from the application of new and extraneous matters, stimulant in their nature, but subversive of natural movement—both in time and force, productive of new and artificial action in the minutest circle of organization, communicated to combined organs, and manifested in the operations of functions. This new action originates in the application of a new material, the effect corresponds with quantity and quality, and condition of subject to which the application is made. This last requires a minute consideration in forming an estimate of effect, for it seems to be the principal circumstance which modifies the expression of symptoms. Action is supposed,
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in all cases, to be in proportion to the force of the stimulating power and the capacity of the excitable organ. This has different conditions or capacities,—different degrees of facility or difficulty in manifesting action. The facility in excess may be termed irritability, the difficulty torpor. The condition varies radically, that is, constitutionally in different subjects ; and it varies in the same subject, according to differences of accidental circumstances.

If those causes, which occasion the deranged action visible in the class of febrile diseases, be in reality, as they are said to be, sedative powers, inducing debility as their peculiar effect, it is natural to suppose, that such condition of subject as is most allied with the effect to be produced, would most favour the manifestation of the action ; that is, that those persons who are naturally weak and feeble, or who are accidentally rendered so by circumstances of treatment, will be most liable to be acted upon by causes of a debilitating kind,—calculated specifically to produce debility. The effect appears, in fact, to be the reverse ; for the young, the strong, and vigorous, are more liable than others to acute disorders ; and they are the persons in whom the attacks of such disorders are usually most violent and most dangerous. This is a common occurrence under the prevalence of sickness in civil life ; and it is observed frequently, almost uniformly in times of sickness in the army, that grenadiers, light infantry, and others of great animal

animal power, sicken and die in greater proportion, than the puny and more feeble subjects of the battalion, who are under the same circumstances of exposure. This fact, and it is well ascertained, is not favourable to the common opinion concerning the action of the causes of fever. But besides this, there are others occurring accidentally which bear strongly upon the same point. For, where the causes of fever abound; and where the subjects, upon whom they are supposed to act, possess, in appearance, a community of qualities susceptible of their operation, it is a matter of no rare occurrence to observe, that those, who work hard, who labour daily, even to fatigue, or who are constantly and actively employed in military service, escape sickness, while the idle and indolent suffer extremely. And further, while health continues without interruption during the continuance of the labour uniformly and constantly pursued, it rarely fails to be affected at the intermission of the toils and apparent hardships. In a similar manner, it usually continues secure in times of sickness, with a sober, temperate, even with an abstemious regimen. Multitudes are the victims of the indulgences of the table,—even of indulgences without excess. Many also are apparently preserved from the attacks of fever in sickly times, by the use of means which lower the animal powers, as bleeding and strong purges, repeated at intervals;—they suffer when such means are neglected. From these instances, and

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there are many of the same kind, it is reasonable to conclude, that, as the circumstances which diminish, or in some manner expend the excitability of the moving power, in which strength as well as life consists, do not appear to forward the operation of the causes of fever, but on the contrary to counteract, even to avert an expected explosion, the supposition that debility, as a specific effect, is the first step of this action, stands on suspicious grounds. The action of the supposed debilitating power is not favoured by a condition of previous debility, according to the common meaning of the word. Even when the debilitating action is actually begun, it is liable to be cut short, or broken in its course, by processes which are considered to be debilitating in the highest degree, viz. large bleedings, the action of severe emetics, and brisk, even violent purges. Nay further, nature's principal remedy, the product of the disturbed rhythm, is, in such case, directed to evacuation, considered by most as a debilitating process, while she is commonly abhorrent from nourishing food, and rich or cordial drink.

But if it be inferred from the facts now stated, that the causes, which excite a febrile movement in animal bodies, are not sedative powers; for by sedative must be understood that which lowers action, not that which perverts it, it will probably be concluded from other connecting circumstances, (there is here no positive proof,) that they are actually of a stimulating kind; and
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that they sometimes produce effects from error in excess of quantity, as well as from error in change of quality. It is a fundamental point to be kept in view, in accounting for all derangements of movement, that the condition of subject is always to be coupled with force of cause. The agency of the principle of heat visibly communicates activity to the operation of all the elements of nature. It multiplies the force of the cause, and it increases the susceptibility of the subject to impression. The action of the principle is of great latitude, as the materials upon which it acts are of great variety. The quantity of the heat, and the materials upon which the heat operates vary in different seasons of the year; they differ materially in different climates of the earth, even in different districts of the same climate. The common atmosphere, a product of the earth, which is mediately or immediately the parent and nurse of all things which are useful for its inhabitants, appears thus to be evidently affected in the proportions of its component parts by the agency of heat, acting upon the mixture of heterogeneous matters. If this be granted, and it is an obvious truth, it may be supposed, that atmospheric air possesses more of the stimulating quality in some situations than in others, as it is evidently known, that though susceptible of the impregnation of extraneous matters or qualities in all its conditions, it is differently susceptible according to circumstances. Hence, if the excitable power

of the animal machine be moved, by quantity of stimulus, to stronger or more frequent action than the rule of harmony permits; or if it be solicited, by the presence of extraneous matters, to assume new and unnatural motions, the rhythm of order is broken in either case. A diseased movement arises, which, according to a law of organization, continues to pursue a given course. These accidents, as formerly observed, are much under the influence of condition of subject. The causes which stimulate the mechanism of life, animal as well as vegetable, are most abundant in hot weather and in hot climates; and as the condition of subject appears to be then most susceptible of impression, such diseases, as are the product of irritation, are necessarily most frequent and most dangerous. It is a fact of common observation, that the young subject, who is full of life and vigour, and apparently in high health, rarely escapes, for any length of time, from the attacks of acute disease, when transported to the hotter countries, lying within or near the tropics; as it is witnessed by melancholy testimony, that the disorders of such, in these climates, are generally violent and often fatal.—The old, the feeble and the valetudinary are differently affected; the old man is, as it were, renovated; the feeble acquires an addition of power, and the valetudinary recovers health. An effect, similar, though weaker in degree, is experienced, even from change of place, under the same latitude; for, on such occasions,

cautions, the young and vigorous seldom altogether escapes from sickness; the valetudinary frequently becomes strong and active. From this it may be concluded, that, as there is probably some difference in the proportions of the principles of the atmosphere in different places; and, as every change of proportion or addition of quality has the effect of stimulating to stronger, more frequent or new action, the irritable subject is excited, in the one case, to a point which disturbs the rhythm of health; the torpid habit, in the other, is only moved to action which is just in measure of time, and just in quantity of force.—Hence disease or improvement of health.

The nature of the derangement which takes place in fevers is obviously, for the most part, a derangement manifesting irritation. It arises from causes of irritation, that is, causes which produce motions which are actively perverted. The other class, on the contrary, manifests signs of defective irritation. It arises from causes, inadequate, in the force of stimulation, to produce just and effective movement. Undue torpor furnishes the pre-disposition; abstraction of a portion of the ordinary force of stimulus the accidental condition which permits the effect. The effect is congestion, an effect of want of power. It is, for the most part, local; and it is seldom accompanied with febrile irritation, till its effects produce another effect, that is, the irritation of an extraneous stimulus. Thus febrile motions may sometimes be the product of con-

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gestions; congestions, depositions or evacuations are uniformly the product of febrile motions, that is, of irregular action. The congestions, connected with torpor, are frequently local; the accelerated and irregular motions, connected with irritability, are ordinarily general. It is according to these forms, that the perverted movements of the animal machine are chiefly manifested. These are extremes, and easily comprehended, for the operation is visible; but besides these, there sometimes arise, among the accidents of disease, conditions of complication the explanation of which is difficult.

The presence or influence of atmospheric air is universally necessary to the movement of animal action; total abstraction is necessarily accompanied with total suspension; corruption or contamination uniformly perverts or impedes the natural expression of action, perverting it variously, or impeding it in different degrees. In this manner, in low, damp and ill ventilated cottages, in jails, in work-houses, hospitals or other places, where persons, destitute of changes of apparel, prevented from exercise and the contact of the pure air, are crowded together in narrow space, the atmosphere becomes contaminated, and the animal movement is deranged with circumstances of a peculiar character. The mixed and stagnating atmosphere of many persons, confined in unventilated places, is an unnatural production. As such it is calculated to produce irritated motions; but while it possesses this quality

quality as a cause, the condition of the subject, as affected by the vitiated air, seems not to obey the impulse. Hence febrile motions, in such case, do not ordinarily explode with force. In proof of this, numerous instances are on record, where the bodies of persons, under the circumstances described, go far into a diseased process, without manifesting any very distinct marks of an open febrile action. It is even observed, that, under this obscure process of deranged movement, a creative process is carried on. For, a material is here generated, communicable to clothing, capable of being conveyed to a distance, and of proving the cause of a disease in a healthy person, of which the body of the subject in question had never ostensibly shewn the signs, but which it actually possessed, and which it would have shewn, had it not been restrained from expression by the artificial condition of the atmosphere, in which it was confined. In proof of this it is observed, that the explosion of a regularly formed fever is not unfrequently the consequence of the admission of the pure air of the atmosphere, particularly of the act of moving the persons here described in open conveyances, at a quick pace, through a free air and open country. It thus appears that the state of the atmosphere affects the condition or expression of febrile diseases. It affects it in a singular manner, apparently possessing the power of giving action, of changing the form of action, even of suppressing action, under the same apparent force of cause.

The conditions which produce these effects are sometimes local, sometimes general, sometimes obvious, sometimes not discernible.

The causes of fever thus appear to be stimulating or irritating powers. The evidences which may be adduced in support of the opinion are numerous and strong. The action is manifested upon the excitable parts of the system; and it, for the most part, corresponds with the visible circumstances of the capacity of excitement. In the early periods of life, the power of excitability is supposed to be most abundant. Action is, at least, then sudden and rapid; if not strong, it is because the organs have not attained the capacity of manifesting strong action. In confirmed age it is less instantaneous; but the expression of it is strong; for the organs are in a state of perfection. In old age it is slow and sluggish, effected, in many cases, only by repeated efforts of the will, as if the cause of motion were not sufficiently abundant to animate the whole extent of the organ. If this observation be correct, it will naturally be concluded, that, as the action, which arises from stimulation, is excited with facility or with difficulty, according to the abundance or defect, the mobility or torpor of the excitable power; so febrile motions, which are evidently irritated motions, ought necessarily to be most frequent in youth, and in the prime of life. The case is so in fact. Youth is the age in which fevers are most frequent; the prime of life, the period in which

x. Does the author mean febrile action? ^{they} His speaking
 here, and then going on to say "the action" would seem to
 imply, it is understood that the meaning is, the action of the

they are most violent ; old age, that, in which they are least common, unless as connected with local affections,—a form of congestion usual in declining years. Thus, the constitutional state of excitability, abundant or diminished, mobile or torpid, seems to be the general condition, which favours or counteracts the operation of febrile causes. The circumstances which accidentally call forth the latent excitable power, which increase its quantity or which diminish its just expenditure, as heat, full living and indolence, or their opposites with their opposite effects, act upon a common principle, either as preparing or restraining the disposition to the explosion of febrile movement. These conditions are thus either constitutional and natural, or they are accidental and of loose connexion. They are various in degree in different subjects ; and they are variously acted upon by sporadic causes. The force of sporadic causes is not easily known and appreciated, for their action is solitary. An inference is not easily drawn from such scattered evidence ; but something more explicit is discoverable in the changes and successions of seasons, as marking the existence of a general influence or connexion between the operation of cause and the condition of subject. This applies more directly to the class of disease, strictly and properly called endemic fever ; a disease, which seems to depend fundamentally upon conditions, qualities, and proportions among the elements of the atmosphere. The effects

effects in this case usually follow a regular rule. The rise, progress and decline of such fevers, as well as the apparently fluctuating changes of form, observe a steady connexion with the causes, which influence the animation or decay of vegetable production. In the class of diseases proceeding from endemic causes, are comprehended all fevers of the genuine periodic form, whether intermitting or remitting, however complicated with local congestions, bilious, dysenteric, rheumatic, catarrhal or pneumonic symptoms. This forms the great class of acute diseases; and though abounding in some climates, and in some situations of the same climate in greater proportion than in others, it is still connected in its rise, progress and decline with the changes of season in all countries, so as to be properly considered to be the genuine offspring of endemic causes.

Besides endemic, there is another class of acute or febrile diseases, the epidemic or adventitious, which arises at uncertain periods, which continues an indefinite length of time, and which is not so visibly connected with the circle of the seasons as the preceding. It arises in particular countries, or in particular districts of country, travels frequently in particular tracts, sometimes confined to narrow bounds, sometimes widely diffused. Its appearance is more frequent in some climates than in others; but the intervals at which it appears are uncertain. It travels like a destroyer, and often bears the
name

name of pestilence. It is perhaps capable of being affected by the common qualities of the atmosphere; but it often proceeds in its course undisturbed by visible changes of weather and season. During its dominion, the common diseases of the country, district, or place in which it prevails are impressed with a feature of its character, which is often malignant, and sometimes very fatal. To this class belong the influenza, the most generally diffused, and the mildest of the epidemics, certain forms of the erysipelatous class, as fore-throat, &c. some forms of dysentery, and even some peculiar modes of general fever.

The other class of causes which produces febrile irritation is referred to the class of specific contagions, viz. the matter of small-pox, measles, &c. The character of disease and the expression of symptoms are here modified by the conditions of atmosphere. The activity of movement is occasionally increased or diminished by the qualities of the air, or the constitution of the seasons; but no condition of air seems to be capable of producing small-pox without the application of the specific cause, as no condition of atmosphere prevents its action when directly applied.

The disease, denominated fever, consists, (as has been observed) in the derangement of the natural rhythm of animal movement. Such derangement appears to be the effect of the application of a variety of causes, possessing an
irritating

irritating power, supposed to offend from excess in quantity, or from nature of quality. As the health of the machine consists in the harmony of its movement, and as the application of a foreign force breaks, by its impulse, the order of harmony, the movement becomes disjointed and irregular; or the general effect, which arises from the joint harmony of action is not attained. Hence want of effect, that is, an expression of debility is manifested in separate parts, or in the more compound functions of the system. An expression of debility is thus the effect of the perversion of the natural rhythm of movement; the perversion, the effect of the application of undue force of stimulus, or of common stimulus, acting on undue irritability. This is a consistent truth, almost a visible fact, comprehending no mystery, and implying no hidden operation. But if, on the contrary, the causes of fever be supposed to be sedative powers, producing a directly sedative effect; or whatever their nature be supposed to be, if they are supposed to produce debility, as the proper specific act of their operation, the process is brought to a state of rest; for debility, whether direct, or such as is termed indirect, is the want of power to produce effect. It is therefore negative, and as such cannot be the active cause of any thing. Hence, if the apparent debility of fevers be a proper specific action, and not the expression of the effect of a preceding operation, viz. the perverted or disturbed rhythm of movement, the event

event is totally inexplicable. Without supernatural aid the machine must rest for ever, for debility stands here like a cart before the horse. In this position arose the *vis medicatrix naturæ*, like a fairy queen, to put the wheel in motion. The *vis medicatrix naturæ* is a loose term, but it is supposed to consist in a power given to the animal machine,—not explicable by the common laws of its mechanism, to raise efforts to combat the action of the causes of diseases, and to avert their destructive tendency. It is thus a species of provisional power, and as such, proceeding from wisdom which cannot err, it cannot be supposed to be otherwise than perfect. It cannot, however, be denied, that the movements, (the efforts of nature as they are termed,) which take place in fevers, are frequently, in obvious appearance, causes which lead to destruction of life. If they are, in reality, the remedy provided by the Creator of the universe, for the preservation of animal life against accidents, they often err in their purpose, or they fail in their effect from want of power,—a supposition impious and absurd; for whatever has proceeded from the Deity, and all nature is the work of his hands, is perfect according to the principle upon which it is formed. As these efforts therefore frequently err, and often fail in the purpose of restoring health, we cannot do otherwise than conclude, that they really are not provisional efforts of nature, but rather the expression of sufferings, the effect of stronger, or more varied modes of stimulation.

lation. The effect sometimes leads to a salutary issue, sometimes to a fatal one. It is defective as a design of the Deity; but on the grounds here suggested, it admits of a consistent explanation in all its circumstances, without leaving a suspicion of imperfection, chargeable to the eternal laws employed by the Creator for the government of the world, and the things which are in it.†

It is assumed as a position which admits of no dispute, that the health of an animal body consists in a just rhythm in the movement of animal action. Health has only one scale. It admits of some latitude in measure, but change or perversion is disease. In health a variety of operations are carried on in various circles of movement, under different figures or forms of action. The movement, though various, is in unison in the parts, and in the whole. The effect is complete, and the final purpose of the mechanism is accomplished. The rule of health consists in this unison,—an unison preserved correctly by the application of causes of a measured, regular, and appropriate force. The mode or scale of health is not very extensive. Errors, in the nature and condition of causes, produce error and deviation in effect, varying in form and degree, and corresponding with the nature of the cause, and the condition of the part or organ, which is the subject of the action. The modes, in the scale of perverted rhythm, or diseased action, appear to be various, and the measure of the

†. We know nothing about ⁴ eternal laws. Every thing we see, tho' no doubt wise & good in general, is yet subject to most obvious imperfection in the detail. How does come in movement

movement is different. In some it is rapid; in others it is slow. The duration of the period is also different. It generally bears a ratio with the velocity of the movements, the most rapid usually completing the circle in the shortest time. Some complete it in twelve hours, some in thirty-six, some in three days, some in five, and a great number in seven. There are indeed few which extend beyond seven, in uniform tenor. For though perverted movement, in acute diseases, often continues for months, yet it rarely continues so long without manifesting certain changes in mode and measure, at certain intervening, usually at septenary periods. In health the movements are regular throughout. They are in due time, and in due force in all the parts, and the functions are correct. In disease the movement is disturbed in order of time and in force, with impaired function in the whole. It is also disturbed in some parts more than in others. Movement is even often subverted, and effect actually annulled in parts, without great commotion being discoverable in the general system. Nay, where local action is very violent, general action is ordinarily moderate, till the effects of the local action produce a cause which again becomes a mover to other irritated motions.

As the harmonic rhythm of movement is supported by the regular and just application of the common stimulants of life; so the irregular movement is excited by causes, stronger in power than the natural means of stimulation. In such

imperfections in structure ~~then~~ as it comes out of the hands of the Creator, where is the impurity & absurdity of believing that it may still continue so in the strength & regularity of its functions, or in that power of self preservation with which it is ob-

case a peculiar form of action arises, which extends itself to the whole system. It is manifested in some parts more than in others; and it is marked in all by a difference in the time and measure of movement. The action manifested, on this occasion, is impressed with a variety of configuration, which gives out a variety of product in effect. Different modes and measures of diseased action have different periods of duration on the whole, as well as different forms of revolution or change during the duration. The tertian period predominates,—perhaps it is sole,—masked in appearance only by complication. The existence of period, in acute diseases, explains the doctrine of critical days; the predominance of the tertian period accounts for the pre-eminence of the odd days, as days of crisis. To every action belongs an effect of one kind or other. The irritation of a new cause occasions a new figure of action in the animal machine. A new figure of action produces a new effect, that is, a product according to its mode. Hence crisis,—a morbid matter, the product of a diseased action. This product of diseased action is manifested, in some instances, by increased secretions of sweat, bile, mucus; in others, by effusion into cavities, or by abscess in the substance of organs.

Of the artificial products which arise in the progress, and which mark the termination of the diseased process, the change in quantity is visible; the change in quality is not easily known or appreciated. Some possess the quality of propagating

gating their kind ; that is, of extending themselves by a multiplying process of singular activity. Others are unproductive. The unproductive are generally visible and gross,—viz. secretions changed in nature and in quantity ;—the productive are entirely artificial,—sometimes subtle and invisible. Of the productive, one class has a specific cause, and a specific product ; the other a more arbitrary or general cause, and a product not easily defineable. The specific produces its kind in all susceptible subjects, but only on susceptible subjects ; for specific contagion, as the matter of small-pox and measles, has the power, only once in life, of producing a general febrile irritation, or such a series of motions as multiplies a matter similar to itself. The cause of contagion, propagating the cause of fever generally, is an artificial product. It is capable of being multiplied to a great extent, and the human body never loses, as in the other case, the quality of being susceptible of its impressions. But as the source is artificial, depending upon an arbitrary condition of the subject, giving origin to a propagating process ; so the condition is capable of being arbitrarily changed, and the course of the multiplying process interrupted ; an event not perhaps to be accomplished, where a specific cause, which has once made its impression, proceeds by its own rule of action to its specific effect ; for it does not appear to be possible to suppress small-pox or measles, after the specific action has commenced,

ced, without a violence which endangers life, if it does not actually destroy it. But though the one class may be checked in its progress with safety, and the other must be permitted to proceed in its destined course; yet it is observed, in either case, that diseased motions have a product, manufactured under a certain form of action, perfected in a certain period of time, and, when perfected, followed by an abatement of irritation, that is, a cessation or termination of fever.

A knowledge of the nature of the product of the diseased action, which bears the name of fever, is a subject highly interesting to the public. The precise nature and qualities of it cannot, indeed, be defined in any case. But though there be here an impassable barrier; yet, if the laws of its action can be discovered, and ascertained with clearness, something will be gained, of no small importance in the purposes of life. The fears of contagion, particularly the fears of imported contagion, have spread widely of late years, and seemingly have contributed to render mankind unhappy, selfish, and unkind. Fear banishes judgement; and persons, under impressions of fear, never discover truth. Danger is often magnified by distance, and false conclusions are often the result of want of opportunity, or want of courage to look things in the face. The author of these remarks boasts of no uncommon endowments; but the nature of his services has obliged him to examine acute diseases in all their circumstances. His observations, on the subject
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of febrile contagion, have been gathered in an ample field of experience; they were made without prejudice or prepossession, and he ventures to offer them as being correct.

The modifications of the products of febrile irritations are various, and not easily defineable; but the whole are comprehended under two general characters, viz. such as produce their kind by multiplication, and such as do not possess that quality. To this last class belongs all that train and variety of disease, which arises from the constitutional qualities, the varied proportions and accidental conditions of the atmosphere, connected with season, and, in common language, distinguished by the name of endemic,—the common offspring of the soil. This cause, the prevalence and activity of which follow season of year, and circumstances of place and situation, produces the most violent disturbances in animal movement; but though it excites movement of a violent kind, and varied figure of action; and though every variety of action has its own variety of effect; yet the product of the derangements, arising from the operation of endemic causes, does not seem generally to possess the power of propagating to another body a derangement similar to that by which it was produced; in short, it does not multiply its cause. On this subject medical men are not all of one opinion. What is here stated is the result of observations, made in various climates, on a

great mixture of subjects, verified by what may be esteemed a long course of experience.

The cause of endemic fevers, which is generally diffused over the surface of the earth, appears to exist in greatest abundance in low and swampy grounds, and in the oozy and foul banks of fresh water rivers. It ascends as it proceeds from its source ; and the width of the circle to which it extends, often not less than two miles, on some occasions perhaps a great deal more, seems to prove that it is a component part of the atmosphere, at least a material dissolved in it, rather than suspended. Its force, in application, is increased by causes which give impulse, as by currents of wind sweeping a swampy ground, and striking with effect upon surrounding eminences ; for it is found that the operation of the cause is ordinarily stronger on eminences in the neighbourhood of swamps, than at the level margin of the swamp itself. But though the force of action is evidently increased by causes which give momentum or impulse to the air ; yet no power with which we are acquainted is capable of concentrating and condensing endemic causes, in such manner as to render them conveyable to a distance by an intermediate substance ; for there are no grounds to believe, that clothing, exposed to the atmosphere of the most pestiferous swamps, becomes, in any degree, impregnated with a noxious material. Nay further, the product of the diseased motions which arise in human
bodies,

bodies, in consequence of the application of endemic causes, appears to be totally unproductive. Nurses and attendants are not ordinarily observed to suffer similar malady; nor do the bedding, clothing, or other matters which have been near or in contact with persons ill of endemic fever, attract, or retain any thing hurtful; for they may be worn by others with impunity, even without purification. The opportunities of observing and confirming this truth are numerous, and there is not, perhaps, any medical fact better established than the one in question, that endemic diseases are not, in their own nature, contagious; that is, that they do not possess the power of multiplying their kind.

But though it be true that endemic fever is not contagious in its own nature; yet it must be admitted that it is capable of becoming so; more strictly speaking, a contagious process often arises in subjects under cure of endemic fever, in consequence of the conditions in which the subject is placed. Artificial causes here overrule the impressions of the original febrile movement, and produce a new form of disease. There are particular situations of place, particular seasons of the year, particular circumstances of subject, and particular forms of febrile action, arising from endemic causes, in which the previous disposition to the contagious process being stronger, or rather less averse than in others, the effect is more easily engendered. In autumn, in the bilious autumnal fever of slow progress, in damp,

foggy, and thick weather ; in damp, cold, and ill ventilated cottages ; in camps, under canvas, where the soldier lies on wet ground, or on wet straw ; in crowded, damp, and ill ventilated hospitals, the transition from the one form to the other is easy. The endemic then assumes the contagious process ; and, under this new form, generates a cause which propagates disease through a long series, transmitting it to places, where the cause of the original indisposition does not exist. Thus the autumnal bilious fever, or camp dysentery, vanishes in the contagious fever of winter quarters. The loss of health, whether in civil or military life, occasions confinement in tents, quarters, or hospitals ; confinement in tents, accumulation in quarters and in hospitals, added to the various circumstances with which these conditions are usually attended, generate a contagious process ; disease is multiplied, spreads widely through the ranks, and frequently commits great ravages. It is a manufacture arising from error in economical management. It often originates from the nature of the covering provided as a protection against the injuries of weather. The mixed emanations of animal bodies are not friendly to animal life. Such emanations abound in crowded tents ; they are condensed, and concentrated with double force, in cold, damp, and foggy weather ; and whatever the specific qualities of their nature may be, the fact is certain, that the canvas becomes impregnated with something noxious to health. The tents
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are infected; and an army is thus often condemned, in addition to all its other hardships, to carry an infected lodging in its train. A contagious disease frequently originates in the field, in the manner described; it is also frequently generated in hospitals from want of due care of the persons of the sick, want of bedding, clothing, and want of suitable accommodation, that is, hospitals with space and ventilation, rather than strong walls and lashed windows.

The disease, thus generated, is the contagious fever of the crowded lanes and suburbs of manufacturing and sea-port towns, of jails, ships, and hospitals. It is capable of being conveyed from place to place, and from people to people, by the medium of bedding, clothing, &c. as well as contracted by approaching the persons of the sick, or by occupying their unpurified apartments. But though its influence be decidedly and directly contagious, the sphere of its action is not extensive. It does not appear to affect the air beyond the walls of the sick apartment, and it probably extends but a few feet from its source. The proofs of this are numerous; and they are important to be known, for men's fears are, at present, unnecessarily alarmed on the score of contagion. It is admitted that the generation and propagation of contagious fevers are considerably facilitated by certain conditions of the air; but it is also evident, that such diseases neither arise from, nor radically depend upon obvious or latent qualities in the general constitution

tution of the atmosphere. For it is well known, that a contagious fever often prevails in certain districts or suburbs of towns, among the poorer classes of the inhabitants, while the rich and wealthy are in perfect health. It even often ravages the ranks of an army, while the military officers experience no disease. The medical officers, nurses, and attendants on the sick in hospital, suffer, in many cases, in the most exemplary manner; the servants employed in the exterior duties remain in health, unless where they come in contact with infected clothing. Persons who occupy the cabin of transport ships, and who confine themselves to the quarter-deck, generally escape from sickness, while a fever of the most horrible character prevails between decks. Further, it is even true, that fevers of the most contagious and aggravated kind may be admitted into villages, without danger of being communicated to the inhabitants. In proof of this a strong instance occurred on the continent, in the year 1795, which it may be useful to relate. When the British army embarked for England in May 1795, about seven hundred sick men were left behind, in the neighbourhood of Bremenlehe. They were the gleanings of the hospitals. Upwards of two hundred of the worst of them were collected at Dorum, and placed in barns and other unoccupied houses. The disease was of a most aggravated kind; for no person entered the sick apartments, as nurse or orderly, or even touched their clothes as washer, who did
not

not suffer an attack:—the villagers were not affected. A part of the same people, though in a less desperate state of disease, were disposed of at a neighbouring village,—distant a mile and a half. They were also placed in barns; but here the villagers lived under the same roof. The disease was communicated to them; and, in the course of two months, one-third of the population was dead. Instances of a similar kind are numerous. These and others serve to prove, that the sphere of contagion is not extensive; and as it must pass from man to man, or from what has been near a sick man to one in health, it scarcely can be supposed that it ever will spread extensively, so as to communicate a general epidemic, either to a town or country. Hence the dread of imported contagion is a bug-bear^x.—The fact of importation, in the manner alleged, is not supported by one authentic history, and it is not consistent with the nature of things.

When the contagious process has been engrafted upon the endemic fever of the autumn, in the manner which has been stated, the autumnal disease then disappearing, a new one arises, which proceeds to propagate itself from person to person through a long series. The power of propagation acts more vigorously, that is, the cause acquires concentration and force, in damp, foggy, and cold weather, in ill ventilated apartments, in crowded barracks, crowded transport ships, in crowded hospitals, and in damp and low cottages. It is checked, that is, the

concentr-

x. Is the dread of Plague Contagion a bugbear? If so, what was the plague at Marseilles, the contagion which was imported in bales of cotton, &c. concentrated in its nature.

concentration, which gives force to the cause, is prevented by dry, windy weather, by exposure to pure air, but, contrary to common opinion,^{*} not by cold air. In proof of this fact it may be observed, that the fever, which arose in the British army on the continent, in the year 1794, continued during the intensely cold weather of 1795, without abatement. But though the contagion of fever be not destroyed by very intense degrees of cold, it is evidently weakened, diffused and prevented from acquiring concentration, under the operation of heat, whether the heat of the sun, or the heat of fire carried to a high temperature. It is proved in a multitude of instances, that, under a high degree of heat, with free ventilation, the propagation of contagious fever makes but little progress; for though the noxious cause may even then be generated, it is not condensed or concentrated, so as to acquire a vigorously noxious power. That the power of the contagious material is increased by condensation, after production, is concluded from the known fact, that the forms of contagious fevers, which date their origin to contact with infected clothing or infected apartments, are of a worse character, or shew the action of a stronger cause, than those which arise immediately from contact with, or near approach to the diseased body of the living subject. The causes, which favour condensation, are obvious; as those, which prevent it, are plain and commonly known. According to the general principle

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^{*} Common opinion in these matters, is the result of common observation, and is not to be overturned by one exception. The opinion

ciple which regulates this matter, the contagious disease, which arises so readily among sick persons, in the latter end of autumn, shews a disposition to diminish towards the beginning of spring, when the weather is dry with an accompanying warmth. The sick then naturally desire ventilation, or court the refreshment of successions of pure air. The disease thus usually disappears in spring; and the errors in management must be supposed to be great, where it continues in force in the summer months: yet such errors, though great, are not uncommon; for contagious fever committed great ravages, in the late war, among new regiments, even in summer. The greatest care is necessary to prevent propagation when imported into a transport ship; and the greatest exertion is scarcely equal to the extinguishing of it in any season, while the ship remains in European seas; but where there is good management, it, for the most part, declines on entering into the trade winds of a tropical climate. When existing, it is known to decline or disappear under the transition mentioned; so it is scarcely ever observed to be generated within the tropics, unless in cases of the most unpardonable neglect, or under very peculiar circumstances of situation.—The contagious process is thus a condition generated artificially; it is capable of being counteracted and annulled by natural or artificial means. The disease may be arrested in its course; but it is still true, that, where it arises from a contagious cause, it receives
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an impression of action at the date of its origin, which produces, as its genuine product, a cause similar in kind, though weakened and rendered abortive by a variety of controlling circumstances.—Such is a short history of endemic fever in its origin, of an effect arising in its train, the product of artificial causes, and of the natural or artificial destruction of that product or effect.

The other, that is, the epidemic class of febrile diseases, is not explicable on so plain a principle as the preceding. The circumstances of its cause are still dark and mysterious. It does not correctly follow the course of the seasons ; for epidemics are found to appear at any time, in any place, and usually after an interval of several years, or consecutively in a series of years. The appearance of such diseases is frequent in some countries ; it is rare in others. The cause is inexplicable in our present state of knowledge ; but it seems to be connected with some secret movement in the interior, or in the surface of the earth. It arises in districts, travels in tracts, sometimes confined to a narrow sphere, sometimes spreading widely ; and, like a destroying angel carrying famine with it, as well as pestilence. When epidemic sickness happens in the season of vegetation, it has often been observed, that vegetable productions are blighted or changed in their qualities ; in prevalence of endemic sickness, vegetation is often luxuriant, and the harvest abundant ; for the causes of abundant vegetation and abundant endemic disease, if not the same,
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are nearly connected. It is proved by sufficient evidence, that endemic diseases are not contagious in their own natures. It will scarcely be supposed by any one, who weighs the matter maturely, that epidemics originally arise from human contagion. It is difficult to say positively, whether or not they are propagated by it; for the persons who visit or attend the sick may be supposed themselves to have come near the original source of the malady. But whether epidemics be personally contagious or not, it is perfectly plain, that their progress cannot be stopped by the laws of quarantine; for it issues from the earth, so as not to be seizable, or it travels widely in the air, — a medium too subtle for the fetters of man. It has been observed by writers, that the products of the earth shew marks of change or alteration preceding to, or during the prevalence of epidemic sickness; yet it is not always, indeed it is rarely, that there are visible changes in the sensible qualities of the air; for undue degrees of heat or cold, of dry or damp, in the weather, are not peculiar to these times. The malady arises suddenly, it often disappears suddenly, — or leaves one district, to appear in another. Of this class of epidemics may be reckoned a certain species of catarrhal fever, called influenza; the class of erysipelatous affections, as certain kinds of angina, ophthalmia, dysentery, and even general fever of a peculiar character. The epidemic is sometimes widely extended; sometimes it is merely local. When widely extended, it
must

must be supposed to depend upon some hidden derangement in the materials of the earth,[†]—on a movement of parts into new contact, giving out a new or unusual product. This may be general in a country, or a district of country, or it may be confined to a very narrow spot. If extensive, it is the work of nature; if local, it may sometimes perhaps be artificial,—the work of man forming new combinations in the soil, or exposing the materials to the action of new causes. The character of epidemics is frequently, though not always, malignant: when malignant, it is fatal by a different rule from that which obtains in diseases of the endemic class.

The other class of febrile diseases, of which febrile irritation only is a circumstance, is the eruptive class, specifically contagious. Such are not the product of season or local circumstances; yet their propagation is favoured or discouraged by accidental circumstances connected with season. The fever arises from the stimulation of extraneous matter, the motions excited produce a similar product, and subside when that is perfected. The character of the accompanying fever is various,—mild or malignant, according to circumstances of season, situation, or condition of subject. The plague, a disease not yet well known, seems to be specifically contagious, and locally eruptive in its peculiar nature. It seems to have a direct disorganizing effect, as appears to be the case with several other poisons, animal, vegetable, or mineral.

†. This is Sydenham's *Hypothesis*; for such it It
 at be called, seeing that there is not the shadow of

It is stated in the preceding pages, that human diseases, particularly the class of diseases denominated fever, consist radically in an altered rhythm of animal movement. The scale of deranged movement is extensive, and the modes are various; but the character of the action points to two general objects only, viz. an action of creation, or an action of dissolution. In health, the rhythm of movement is regular; the product of that movement is suited to the purposes of health. In disease, the rhythm is disturbed, and the product is changed, corresponding with the impression of the original cause communicated to organism, variously diversified, and differently combined in different subjects, according to difference of radical or accidental circumstances. The effect is communicated generally to the whole of the moving parts of the machine, or it principally manifests itself in one. It is locally that its products are chiefly conspicuous. The expression of the action of the causes of fever is of two characters. In the one, the character of which tends to issue by creation, that is, by bringing forth a new or modified production, the consequences are not fatal by primary effect. They are fatal by secondary effect, that is, by misplaced evacuations, effusions in important parts, inflammation and abscess; or they are fatal by non-effect, that is, suffocation, the action, from accidental counteracting causes, not corresponding with the impression. Such disease may either be contagious or not contagious; and it is not

not in its own nature, what, strictly speaking, is called malignant. It has a period of duration, and a crisis or product, according to an established rule of order; and, according to the nature of these, is the event—salutary or fatal by secondary effect. The morbid cause has here its genuine expression in action, and the movements tend to a given issue according to rule; but besides this, it frequently happens, that the expression is clouded and obscured by circumstances, principally by circumstances connected with condition of subject. The genuine action is not developed; a mixture of tumults and irritations arises from contending causes; the movements are oppressed, and the productive effect of the disease is marred; action subsides, and the tendency to dissolution ensues. Such event is frequent in strong and plethoric subjects in very hot and dry weather; or in European subjects suddenly transported to hot climates. The suspension of the creative process, and the tendency to the opposite effect, seem here to originate, in force of cause and combination of circumstances, that is, in excess of irritation and excess of irritability producing complicated action, rather than in the operation of a cause producing a radically malignant corruptive process. In diseases, the operative process in which tends to creation, the principle of life is strong; but the motions of life are perverted in a greater or lesser degree. Such action has many different shades; and it mixes, in various complications, with the
 action

action of the counter process. Diseases, which arise from endemic causes, many of those which arise from specific contagions, even the artificial product of general febrile contagions, have radically, in their own natures, the character which belongs to the creative process; but the regular effect, as observed, is often suspended, or rendered abortive by a concurrence of counteracting causes.

The diseases, which arise from the operation of epidemic causes, have frequently, though not necessarily or uniformly, a characteristic tendency to the corruptive process, the action of the cause loosening, in an inexplicable manner, the hinges of organization. They are thus radically malignant. Of this nature are certain forms of the erysipelatous class, as ulcerated fore throat, and all those maladies which assume the ulcerating process, some kinds of ophthalmia, bloody flux, plague, fever with a particular tendency to gangrene, particularly fever in relapse. In the pure and unmixed forms of this character there is no distinct period or form of crisis. The process, proceeding in its course of disorganization, terminates in death; or, it is checked by the application of artificial means, or by some inexplicable condition among the processes of nature. A new movement then arises at the sources of life, the corruptive process ceases, the creative commences; as, in contrary circumstances, the creative, when ineffective, degenerates into the corruptive.

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The outlines of general character are distinct in their extremes ; but they have, on many occasions, a certain mixture and complication, and they sometimes appear to alternate or to change place. The cause of the malignant or gangrenous character, in diseases, is often a product of nature. A malady possessing such character is epidemic, at certain times and in certain places, in an extensive degree. It is then a manufacture from Nature's store-house. It is also sometimes evidently the product of human errors and neglects, concentrating, changing and modifying condition of cause and circumstance of subject, in such manner that an artificial corruptive effect is the consequence. This is not rare in crowded, ill constructed hospitals, where the corruptive process is strongly manifested, particularly in the character of relapse. In diseases of the malignant or gangrenous character, blood drawn from the body does not cohere, or separate decidedly into different parts. It shews no life,—no disposition for new formation. This effect is obvious at particular times and in particular situations ; but the cause is inexplicable, depending on a latent principle, which affects the hinges of vital organization. The vital principle, in such case, does not appear to be generated in due force and activity,—and animal action is weak. In the other case, the blood coheres strongly, forms rapidly into firm and compact parts, as if it had an excess of the creative quality. But though so disposed to unite, and to form into new combinations,

nations, there is variety in the mode. In these points,—that is in excess or defect of vitality, with their various modes and shades, consists a most important consideration in the treatment of diseases. —The gangrenous or corruptive effect,—the expression of the action of a peculiar cause, marks the character of a malignant disease; but a malignant disease which is not necessarily contagious.

The limits of the present sketch do not permit a detail of all the illustrations of which the subject is capable, on the grounds assumed in the preceding pages. In searching for a principle, as a basis on which to form opinion, and direct effort in the endeavours to restore lost health, observation carries us no farther than to changes in the rhythm or harmony of movement in organic action. Such derangement is the obvious effect of the application of powers stronger in force, or of a nature different to those which maintain the natural harmony of action, on which depends perfection of function in parts and in the whole. The restoration of the lost harmony of action is the restoration of health. This admits of no dispute; but the doubts and difficulties lie in accomplishing the purpose; for the modes of derangement are various, and cannot be brought into order, in all cases, by the same means;—so different are they, indeed, that means, which tune to harmony in one case, loosen the cords of life in another. Hence the office of physician is a difficult one. It implies a previous

knowledge of all that can be known of a human body ; it demands a most minute and attentive observation of changes and accidents in individual cases of disease, in order to ascertain precisely the error, or mode of error ; and it requires the possession of a bold and penetrating judgement, capable of rapidly seizing the means, and of measuring them correctly in the quantity, which insures the accomplishment of the end.

The principle, which animates organization, is the principle upon which medical means only can operate. We are ignorant of its nature, and must ever remain so ; but observation is capable of instructing us in the knowledge of the most essential of its laws. We learn from experience, that there are many cases where we may act boldly with safety, and accomplish our object with certainty ; others, where our steps must be cautious, and where the object can be attained only imperfectly ; while there are some conditions, where our observations have brought us no light, or where our means can furnish us with no aid. The art is thus imperfect, and it is difficult to say whether or not it is progressive. It calls more than any other for the exertions of genius ; for, next to a pure mind, there is nothing so valuable as a healthy body. Yet, with all this claim to consideration, the medical art stands with the public at a very low point of estimation. It is only accidentally that it leads to riches, and it never leads to honours. On its own account it is little respected ; and it is difficult to say, whether

whether the want of respect be chargeable to the insensibility of mankind, which little esteems its greatest blessing ; or to an opinion, that the pretended art has not this blessing to bestow ; for the art of healing has as yet attained no established principle, which furnishes a demonstrative proof of its truth and utility. Medical opinions fluctuate and change ; are, indeed, often so directly at variance with one another on points which externally appear to be the same, that the sceptical are ready to pronounce the whole science of medicine to be a fabric without foundation, and the practical art a trade of imposition on the credulity of mankind. The art, indeed, is not perfect ; nor has it yet arrived near to perfection : but it is not entirely fictitious. It has a basis. Those who are esteemed ignorant have discovered some part of the truth ; the learned, by attempting to go farther than the limited power of man is permitted to go, have stopped short of the point which the knowledge of man is permitted to attain. They have conjectured, where they ought only to have observed and recorded. Observations, correctly made, lead to knowledge. If the appearances which arise during the state of disturbed economy, are found to spring from one source mediately or immediately ; and if they be found to arrange themselves immediately, or by their consequences in effect upon one visible principle, one essential point of relation is established. The

view may be limited, but it will be correct. It is permitted to man to observe Nature's laws. We may observe them accurately, but we err when we presume to conjecture about the hidden springs of her action.

It is within the reach of common observation, that the natural rhythm of movement, which obtains in health, is disturbed during the existence of fever; or rather, that fever actually consists in a rhythm of movement irregular in time or force; hence the restoration of rhythm is necessarily the restoration of health. This is a clear point; but previous to such attempt of restoring the natural harmony of movement, it is often necessary to arrest the irregular course of the existing motions, in order to bring back, with greater facility and certainty, the form of the rhythm which has been lost; in the same manner, as it is often necessary to cause a military column to halt, when moving incorrectly, so that it may more easily lay hold of the regular cadence of the step. There are many cases, where this may be done boldly and without fear; some, where it must be done with the greatest care and caution; and others, where it cannot be attempted without imminent risk, the movements being so rooted, that they must be permitted to go on to the appointed period and usual form of termination, unless where they absolutely threaten danger to life.—But, where the condition is present, which

warrants the attempt of arresting the disordered rhythm of movement, previous to the application of causes calculated to excite motions analogous to those of health, the means differ, according to the circumstances of the case and condition of the subject. Of preliminary remedies employed in this view, bleeding and emetics are two of the most powerful and most generally applicable. When the diseased motions have been arrested, or subverted by the employment of these or other means, the pure air of the atmosphere, the universal and common stimulant of life, is often sufficient to solicit the organic structure to resume its natural action. But, where the power of this fails, or is supposed not to be sufficient to effect the purpose, others which are of greater force, or which are capable of more direct management, are called in aid. Of these, bathing,—alternate warm and cold bathing are among the most powerful; and as the manner of using these, and some other remedies, may not have been fully explained by the author in his former publications, he will now attempt to define such circumstances as he had then overlooked altogether, or touched in a hasty manner.

BLEEDING. Bleeding has, perhaps, experienced more revolutions of reputation as a remedy in the cure of fever, than any other remedy which has been employed by physicians. In some ages, and in some countries, it has been considered as the cardinal hinge of medical means; in others it has been, and by some it is

even now regarded with abhorrence, considered as a practice most certainly paving the way for destruction. Such opposite opinions can scarcely be accounted for. They serve to bring disgrace on the medical profession; for, as diseases are fundamentally the same now, which they were fifteen hundred or one hundred years ago, Galen and Sydenham must either be supposed to have been singularly deceived, in reporting so favourably of the effects of this remedy; or we must ourselves be supposed to be precipitate, in condemning, as hurtful, the use of means which they found to be so beneficial. Galen was a man of great knowledge; Sydenham was a man of great candour. If the one reasoned well, the other reported truly. It may be alledged, that their opinions concerning causes biased their judgement, and led them into error. From such opinions, the present times are not exempted. If Galen was led to the use of the lancet, by a pre-conceived opinion of plethora, we are deterred from it by a belief in debility,—an opinion not resting on better foundations than that of plethora, viz. both effects of febrile action,—not causes.

It is unfortunate, where the arbitrary and fluctuating accidents of symptoms come to be acted upon as causes influencing a scheme of medical treatment; for the views formed upon such grounds must necessarily be fallacious. They cannot be general; and if they happen to be right, they are only right by accident. In illustration

tration of this it may be observed, that the course of fever has often been cut short abruptly by a very copious bleeding; it may even, perhaps, have sometimes happened, that a similar result has followed the exhibition of an over dose of opium, or strong liquor. The fact may be true in both cases: the means are thought to be of a directly opposite nature; and the appearances of the disease were probably not very different. One considers the malady as arising from, or depending upon plethora; the other considers it as arising from, or depending upon debility. The truth more certainly is, that neither the one nor the other is a cause. The existence of the fever depends upon a perverted rhythm in organic movements;—plethora, or expression of debility, are comprehended among the signs. The action consequent to bleeding, or the action of an over dose of opium, or strong liquor, changes the condition of the system; the existing effect ceases, and a new movement arises. The effect may be considered, as the effect of the force of a new stimulus, or of a condition, consequent to the change of circumstances, in consequence of which the common stimulants of life become sufficient to restore and support the action necessary to health, and inseparable from it.

In fixing upon a principle upon which to arrange a plan of cure, it is necessary to proceed with caution,—not to advance a step beyond what is visible and demonstrable. The principle cannot

cannot be true as a principle, unless it apply in all conditions: therefore any foundation built upon a symptom or part must be imperfect. If the principle be imperfect, the application of it in practice will often be defective. It will still be more unfortunate, where, instead of being simply imperfect, it is positively false. It is thus that the expression of debility, or want of effect in function,—a necessary consequence of perverted rhythm in organic movement, is considered, at present, as the specific and primary expression of the action of the cause of fever, consequently the effect to be removed;—the removal of that effect is supposed to be accomplished by direct addition to the force of the moving powers. In the economy of a machine, the correct performance of the offices of which depends upon a due form of movement in time and force, the effect is regulated by the addition made to the energies of the moving power, or by the removal of resistances which interrupt the course; for resistance is necessarily implied in every act of motion. It is thus observed, that effect, or energy of movement, in certain conditions of disease, is often more assisted by taking away two pounds of blood, than by adding two pints of wine, or other strong liquor. The fact cannot be disputed, for it occurs daily. It forms an important basis in regulating the movements of the animal machine. Abstraction has thus an effect, stimulative of the energies of movement. The change of condition, arising from a change of

of condition in the resisting power, has the effect of a direct stimulus; action, consequently becomes more effective, though no power be visibly added, which can be supposed to give energy to the moving principle. The proofs of this are numerous. They can scarcely be supposed to have escaped the notice of persons of even the most narrow experience. For it is no unusual thing to observe, that persons debilitated to the last extreme, that is, persons in fever, who are, as it were, paralyzed, or not capable of producing a single action of effect, rise up instantaneously into full force and vigour, in consequence of a very copious bleeding. It may hence be inferred, that abstraction of blood has not, in its own nature, a positively debilitating effect; for in consequence of it, there instantly arises energy of movement, and action of the natural force. This fact is so much under the eye of every one, that it can only be from oversight or prepossession, that bleeding, and even some other modes of evacuation, employed in the cure of fevers, are considered, as they generally appear to be at present, among remedies of the positively debilitating class. There are positive evidences, of the truth of which the common sense of every man is competent to judge, that the effects of these means are sometimes in the highest degree stimulant of the movement necessary to health. The idea, that abstraction is directly and unqualifiedly debilitating and addition the contrary, could only have arisen at the table of
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the feast. From thence it has borrowed all its illustrations. For observation of the condition of the sick, where evacuation is so often followed by the return of health and vigour of action; and where evacuation, Nature's remedy,—the product of the perverted train of action and mark of termination, furnishes it but small support. It does not require any very deep insight into the laws of animal economy, to perceive that debility, that is, want of power to produce effect, is not the first and fundamental hinge of fever. The doctrine of the cause is palpably erroneous. The means of remedy,—the addition of matters of a directly stimulating tendency, the most dangerous that ever has influenced medical practice; for though it be admitted, that the direct stimulation of opium and wine may sometimes forcibly terminate the course of a fever, by adding to the energies of the moving powers; yet, where the quantity of the power, and the quantity of resistance are not correctly estimated, the effect is a random effect, succeeding by chance; and, when failing, precipitating the fatal event by accelerating exhaustion or paralysis, the consequence of an exertion not carried to the point of accomplishment. It is, therefore, the safer measure to diminish resistance previously. It is the surer measure, for a weaker degree of stimulation has then a proportionally greater effect. It is in this view that bleeding was usually employed by the author, as preparatory in the cure of fever. The simple effect of
bleeding

bleeding was, sometimes, of itself the apparent cause of the return of health. It rarely failed to prepare the condition, under which the operation of the other parts of the treatment was effectual. It must not, therefore, be understood, that bleeding is considered by the author, as a debilitating process. Its effects are stimulative, relatively according to the circumstances of the subject: and they are extensive, for they are felt in all parts of the circulating system, and consequently, through the whole extent of the animated machine. The abstraction of blood, by its express effect, diminishes the quantity of a body to be moved; and thereby increases the power of the mover: it thus facilitates motion; but this is not all. The diminution of the quantity of blood, and change of movement in consequence of such diminution, is in some manner productive of change of condition at the sources of life: motion is affected,—changed, even suspended; diseased motions are arrested; an opportunity is thereby furnished for the more effective action of those powers, which are provided and expressly calculated for the stimulation of the due action of health. Bleeding, as it is the most manageable power, so it possesses the most absolute influence over animal movement, either as directly effective of a final purpose, or as preparatory to the action of other means necessary to insure the final purpose. Bleeding arrests disordered movement, restores, or increases susceptibility of impression; therefore,

fore, where that is deficient, it is, in point of time, the first on the list of remedies. But while valuable, indeed indispensable, in one case; it is unnecessary, even dangerous in others; for it is useful, or it is not admissible, relatively, according to the condition of subject. A derangement in rhythm of movement is disease in all conditions; the recovery of the natural order of movement is recovery of health; yet, as the modes of derangement are various, so are the means by which the recovery is to be effected. The great power of bleeding consists in effecting actual change; in restoring, or increasing a certain susceptibility of impression, in consequence of which the body becomes capable of being more easily acted upon. Where decided changes cannot be effected with safety, it is not admissible in the full extent; and where susceptibility of impression, generally and locally, already exists, it is not necessary. The conditions which determine its use are sometimes connected with general circumstances, consequently common to many; they are at other times peculiar to particular subjects, under particular circumstances of disease.

Among the general circumstances, which influence medical practitioners in the use of bleeding, may be reckoned age and sex. It has been already observed that bleeding is less necessary, where there already exists susceptibility of impression. On this ground, it is less necessary in tender years, and in youth, than in grown persons, or in old persons;

persons; less necessary in females than in males. It is also less necessary in persons of a soft, thin skin, a lax and delicate fibre, than in the opposite circumstances. It also has appeared to be less necessary among the inhabitants of champaign, fertile and moist countries, than among the inhabitants of hilly, barren and dry districts. It is less necessary, for the most part, among the rich, luxurious and enfeebled classes of men, with their excesses of sensibility of mind and body, than among the poor, temperate, and hardy rustic;—less necessary in summer, unless in very hot and very dry weather, than in spring; and less necessary in autumn, than in winter.—These are general circumstances, which have, or which ought to have some influence in forming an opinion concerning the propriety of bleeding;—knowledge of them may often be useful, in directing the proper measure in point of quantity. The particular circumstances belong to particular subjects, under particular forms of malady.

The remedy of bleeding commands, more directly than any other, such condition of fever, as is principally manifested in derangement of the circulating system. In case of fullness and oppression from quantity, whether general or local, the use of the lancet is obvious. The propriety of the remedy will then scarcely be disputed by any, if the signs which determine the presence of the condition be agreed upon: in this there is often difference of opinion.

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In the earlier stage of fever, where the pulse, in its motion, is irregular in time and force; in its action, quick, hard, irritated, and labouring to overcome a resistance; or where it is regular in time, but sluggish in action,—oppressed, and without energy, that is, without freedom of expansion and celerity of contraction, the effects of bleeding are equally beneficial, though the conditions be seemingly different. The circumstances, which accompany these opposite states of the pulse, are also different and peculiar. In one, the respiration is quick and hurried,—and the breath is hot; in the other, respiration is oppressed, interrupted with sighing, or connected with a difficulty of expanding the chest,—as if from want of power,—without interruption from pain. The pain of the head, in the one, is rending and tensive, with strong pulsation of the carotid and temporal arteries,—and with great heat on the forehead; in the other it is heavy and dull, with stupor and inability of commanding thought,—with a clammy, and sometimes a cold forehead. The countenance, in the one, is agitated and confused, with marks of agitation, expressive of pain,—sometimes threatening and grim; in the other it is heavy and torpid, sometimes dark, bloated, and inanimate. In the one the skin is thick, the surface dry and distended; in the other, damp and greasy, without that activity of life, which occurs in natural perspiration. In one the heat is deep, concentrated rather than superficial,—ardent,
rather

rather warm ; in the other it is often below the just point of heat in health, but its impression is different from that which the heat of a healthy body imparts,—known, by sensation to persons of experience, but not easily described. In one, the pains in the back and limbs are severe, and all the joints seem as if they were broken and unhinged. In the other, there is torpor,—an inability of producing action of effect rather than any excess of pain. In both, the secretions are suspended with a sense of fulness and tumult, or with marks of bloated stagnation and inability. These conditions are different externally ; but they are often only parts in the same chain, under different circumstances of expression ;—they are under the influence of the same remedy in the processes of cure. This form of fever, whether appearing with the marks of irritation or suspension of action, (for that appears to be an accidental circumstance,) is more common in dry weather and in the spring season, than at other times, or in other circumstances. It is common in excessive hot and dry weather in Europe ; and it is common with Europeans, as the first disease, after arrival in the tropical climates, particularly in dry situations and in dry weather ; or under change of condition, from free air and the practice of exercise in free air, to crowded places and a state of rest,—as in embarkation in crowded ships. In one case, the circulation seems to stagnate, the blood moving slowly in the veins, as if from the operation of a suspending power ; in

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the other, movement is tumultuous, but circulation is impeded. In both cases, seemingly so different, bleeding is an indispensable remedy. If properly managed, it either effects a safe and speedy cure, or it paves the way for a cure being effected by other means. In the case of tumult and irritation more particularly, the blood ought to be drawn from a large orifice,—not measured by ounces, but allowed to flow till the end is attained, that is, till the tensive pains, sense of fullness, and the sense of resistance in the pulse be no longer perceived, the movement becoming regular, free, and open; or, till the movement from being sluggish, languid and oppressed, become brisk and energetic, till the countenance brighten up, till the power of expanding the chest be restored, till the skin be relaxed, and till the secretions resume their course,—an effect indicated by the breaking out of a general perspiration, by sickness, vomiting, evacuations by stool, or by faintness. It is seldom that less than twenty ounces will ensure this purpose in a violent disease. It may even sometimes require forty to produce complete effect; but it is necessary that effect be produced; and it will be produced by perseverance, for it is presumed, that it has been previously ascertained, that the remedy in the case, consists in bleeding properly conducted. The most scrupulous may rely with confidence, that the quantity of forty, even of fifty ounces will not bring life into danger in the commencement of a fever, where the conditions are such as have

been described. It is safe, and it is even frequently adviseable to continue it till fainting actually takes place, or till a disposition to faint is strongly felt; for it is under such circumstances, that susceptibility of impression is restored; an end, when effected, which lays the foundation for a speedy and a safe cure. In such case, the application of pure air, the common stimulant of life, is often sufficient for the purpose; at least the application of others, more powerful and properly managed, renders the process almost certain *.

In the other condition of general fever, where the pulse is open and unconfined, expanding, or as it were rising to the surface, the heat superficial, warm, rather than ardent or pungent, the skin soft, thin, giving an impression of

* There may be some of the learned, perhaps, who will not be displeased to see that the authority of Galen sanctions a practice fully as bold as that recommended in this place. The example is the case of a young person, ill of a strong fever of the kind, considered as connected with plethora. On the beginning of the third day, Galen determined to bleed him. Αφαιρω τοιουν αυτου εξεπιτηδες, ως λειποθυμιαν επιγενεσθαι, μεγιστον τι εσθημα τουτο πυρετων συχων εν ισχυρι δυναμει, και τω λογω και τη πειρα διδαγμενος, πρωτον μεν γαρ εις εναντιαν καταστασιν αφικνεται ταχιστα ψυχομενον εν τη λειποθυμια το σωμα, τουτου δ' ουτε τοις καμνουσιν, ουδ' αυτη τη διοικουση τα ζωα φυσει δυναιτ' αν τις ευρειν ηδιον η χρηστοτερον. επιτα δ' εξ αναγκης εν τοις τοιουτοις σωμασι επιεται διαχωρησις γαστρος, εστι δε οτε και χολης εμετος, εφ' οις αυτικα κοτιδες απο παντος του σωματος, η ιδρωτες, απερ ουν κακεινω πανθεξης γενομενα, παραχρημα τον πυρετον εσθισαν. ωστε τινας των παροντων υπειν, ισφαξας, ανθρωπει, τον πυρετον. De Curat. Morb. Lib. III. Tom. IV. edit. Bas.—The above is a case in point,—strong in fact, and well reasoned,—the young man fell into a profound sleep,—the disease was completely extinguished.

buoyancy and elasticity; the countenance clear; pains, if they exist, of a sharp nature, flying through different parts, but not connected with sensations of weight and oppression, bleeding is not by any means necessary. Such form of disease generally terminates by regular crisis on or before the seventh day, when left to itself, or treated with gentle remedies. If it be determined to cut short its course by forcible means, the abstraction of a small quantity of blood will be serviceable; for by increasing the susceptibility of impression, the means afterwards employed to excite new motions will act with more certain effect. The remedy however is not indispensable; and, where useful, the quantity to be taken away is limited to a measure not exceeding twenty ounces.—Such form of disease is more common in mild, moist and warm weather, among persons not exposed to causes of unusual violence, as excess of cold or heat,—persons of soft skins and delicate frames,—as females and persons in the higher ranks of life.

In fevers of the genuine periodic form, bleeding is a remedy for which there rarely is occasion. Where the intermissions, or remissions are distinct, the paroxysms terminating by copious perspirations, by copious vomitings and bilious evacuations, plethora not existing and the fibre seeming to possess sensibility to impression, bleeding is by no means necessary: yet, in certain conditions of fever, radically periodic, but, from force of cause or circumstance of subject, not assuming

assuming their genuine form, it is often not only useful but indispensable. Where the pulse, in the state of remission, conveys an idea of hardness, confinement, or want of expansion, particularly where connected with a clouded aspect and defective secretions, bleeding is usually followed by distinct intermission,—and the disease enters into the common road of cure. Further, in instances of endemic fever, fundamentally periodical, but connected with a dry, thick and torpid skin, a bloated countenance, suspended secretions, a sluggish and oppressed movement, or an irritated movement without productive effect, bleeding is indispensable; for it is the only remedy with which we are acquainted, capable with any certainty of removing the mask which covers the genuine expression of the disease. It effects a change in the circumstances of movement; the susceptibility of impression is restored; the disease appears in its own character, and yields to ordinary remedies. It is probable, even more than probable, that the fever, which has committed such devastation in America for some years past, was only conditionally malignant, masked by circumstances of a more general or local nature so as not to appear in its real character. The circumstances of its history prove it incontestably to be endemic; and there is good reason to believe, that bleeding, to the extent here recommended could have brought it to assume a remitting form, and consequently would have brought it within the reach of common means of cure. Such, at least, was the

effect of the treatment proposed in the concentrated endemic of St. Domingo, with which the fever of America seems to have a great resemblance.

Besides the above rules for regulating the use of bleeding, in the early stage of periodic fevers, there sometimes occurs a condition in these diseases, of very difficult discrimination, but of very great importance to be correctly known. In certain forms of this disease, of a latent malignity of character, the paroxysms sometimes come on unexpectedly with stupor, suspension of sense and motion, or with the evident oppression of some important organ,—the head or lungs. Sometimes, there is no visible accompanying tumult in the circulating system; the suspension continues for a given period, and ceases without a visible effect. Sometimes, there is an evident tumult in the circulation,—a marked determination to particular organs :—Evacuation or effusion into a cavity—the head or chest,—is the consequence. In the first, bleeding is not necessary; in the last, prompt and copious bleeding, so as to make a decided change in the existing circumstances of the case, is the only means which can save life. To discriminate such conditions, is not always easy; and they are sometimes, perhaps, in some degree, complicated. In the one case, the neglect of bleeding is destruction; in the other, though it may not be necessary, it is not injurious. In all cases of doubt, it will therefore be adviseable to adopt the safer measure, taking away blood where
function

function is merely suspended from a caprice in movement, rather than neglect it, where function is oppressed by quantity, endangering suffocation.

The fever, which arises from a contagious source, does not appear precisely in the same form, or ordinarily tend to termination by a similar product, with that which arises from endemic causes. The effect is not so strongly and permanently manifested, in the grosser circle of circulation. The natural secretions are not usually so completely suspended, during the continuance; and the termination is not so uniformly marked, by an increased evacuation, or distinct crisis. The action of the cause of this disease manifests itself, in the first instance, in the stomach *; the functions of which, it in some manner

* It is believed, that the cause of contagious fever enters by the mouth, and has its first operation on the stomach. Whether it may enter by other channels or not, the author will not pretend to say; but that it enters by the mouth, the following relation may be considered as decisive in proof. The fact is correct, for every part of the operation was felt and noted at the time. On the 3d of December, 1799, (about 11 o'clock) the author, in visiting the Russian sick at Chateau du Val, in the island of Guernsey, besides an unusual secretion from the salivary gland; customary with him in entering into infected places, felt in the throat, &c. extending to the stomach, certain sensations of huskiness, dryness, and burning heat, as if from Cayenne pepper, but without grateful warmth. The sensations were unpleasant, accompanied with nausea and flatulence;—they vanished, at least were less perceptible after dinner. In the act of undressing to go to bed, about 11 o'clock, the heart was perceived to palpitate singularly. In a short time, a quivering of a

manner impairs. Its first manifest action, as a febrile irritation, when the cause is not controuled by counteracting circumstances, is perceivable in the surface of the body, the conditions of which are generally changed in one form or other, either as expressed by an apparent increase, or by an apparent defect of action. The skin and stomach have a radical sympathy; and it is principally upon the stomach and skin, and their connexions, that the cause of contagious fever exerts its force.

most extraordinary kind, was felt about the stomach and neighbouring parts, the whole was agitated for near fifteen minutes, with the most rapid successions of tremulous motions, but without pain. A pain, in the mean time, sharp, as if from a pointed instrument, darted to the head;—the motion was sudden as lightening, and suddenly passed away; a certain confusion, or rather a rapid succession of ideas, as is usual after drinking some glasses of Champagne wine followed; the tremulous motions at the præcordia ceased; a glow of warmth succeeded, extended over the breast, and, at last, to every part of the body, followed by an equal and gentle moisture, generally diffused. The mind was in reverie; and the night passed over without much sleep, but upon the whole with more pleasure than pain. 4. In the morning, the throat dry and husky, as if something extraneous adhered to it, which required to be washed off,—a sense of heat and huskiness in the stomach, with unpleasant sensations in the bowels. Breakfasted as usual, eat bread and drank tea, but without relish;—walked several miles, and was employed for seven hours in visiting sick in hospital, or in selecting sick from barracks to be sent to hospital;—felt no unusual weakness. Nausea troublesome,—less perceptible after dinner. 5. Slept better. Nausea,—unpleasant sensations in the stomach and bowels,—same duty, and of the same continuance

force. The skin, in one form of this disease, is hot, sensible, often painful of the touch; it burns,—but without strong heat; the face flushes, as from wine or heated air; the eyes appear red; they are hot and painful, sometimes glisten brilliantly; the pains of the head are often severe, sharp, even shooting, but irregular and inconstant; pains fly rapidly through the limbs in explosions; the pulse varies; sometimes it is frequent and quick,—even full and open; it rarely

as yesterday,—fruit grateful, with large draughts of cold water,—eat breakfast or dinner without being hungry,—better after dinner. 6. The same symptoms,—unpleasant sensations,—and swimming of the head,—same duty. Sensations at stomach so unpleasant, that it is with difficulty the desire of taking an emetic is resisted. 7. Little alteration—same duty—the same sensations. 8. Same sensations—the functions of the alimentary canal suspended, as if from want of power;—at nine in the morning swimming and giddiness in the head, with ringing in the ears,—obliged to sit down to avoid falling,—went off in less than half an hour,—same duty,—the sensations at stomach less unpleasant. 9. Better. 10. Better,—functions of the alimentary canal restored with more than natural effect.

This case is adduced in this place, in proof of the opinion, if it should be doubted, that the cause of contagious fever enters by the mouth. It was traced in its progress, day by day, with a view to determine a question, which was considered as a curious one, viz. the length of time which intervenes, between the receiving an infection, and the explosion of a regular febrile irritation. The cause was distinctly felt to have been received in this case; but it passed off without producing a regular febrile effect; and of course left the question undetermined. It proves the other point clearly, and

rarely expresses a sense of struggling motion as if from resistance, so common in some other fevers; sometimes it is little changed in point of time; but it always expresses some change in condition, though it be not describable in words. There is, upon the whole, something peculiar in the sensation;—the motions are of a lighter kind than in endemic fever, and the observer gets an impression, that a different circle of movement is affected;—it is not possible to say in what manner. Bleeding is rarely necessary in this fever. In the more concentrated forms which attack with a stupor like apoplexy, or which are accompanied with motions of unusual irritation, it may sometimes be useful as the first remedy. But

and proves the grounds on which emetics come to be so useful in the cure of fevers of this class,—similar effects in the stomach have been experienced by the author, in many instances, from similar causes; but the same kind of quivering and palpitation was never noticed in a similar degree at any other time. The sensations in the stomach and throat are commonly huskiness, a sense of a burning of an unpleasant nature,—a desire of drinking cold water, and opening the mouth to fresh air,—flatulence, fulness of the stomach,—impeded functions of the alimentary canal,—costiveness, or frequent ineffective motions;—dreaming and disturbed sleep,—there are rarely any particular sensations of weakness;—there is pleasure from being in the open air, and even from being wet with rain. An emetic, or a strong dose of physic, generally removes these uneasinesses.—In the above instance, the sensations were unpleasant; but they were not interrupted, in expectation that the event would determine a doubtful question.

But unless where this is the case, an emetic is more properly first, in order of time, to commence the cure of the contagious fever. It does not indeed often happen, that bleeding is a remedy absolutely necessary in contagious fever ; yet it is sometimes useful, and it is by no means destructive, as practitioners seem generally to believe. Wherever the susceptibility of impression is deficient, particularly where such deficiency is connected with an appearance of fulness, a dry and constricted surface, bleeding may not only be safely employed, but, by restoring susceptibility and all its consequences, it eminently tends to render the other means safe and effectual of their purpose. That it should be so seldom necessary, seems to depend upon the mode of action of the morbid cause, which rarely has an operation calculated to absorb the sensibility of the system.

In the opposite condition of contagious fever, where the countenance is fallow and dull, the skin greasy, damp, dirty, and cold ; the eye white, and idiot-like, with a general look of despondence and want of animation, where there are no marks of oppression of organs, or signs of general plethora,—a condition frequent in damp weather, crowded and unventilated places, bleeding is not useful ;—it is not certain how far it is safe. In cases of increased mobility, with tremors, faintings, a skin open and free from constriction, it is not only unnecessary, but evidently hurtful.

Bleeding

Bleeding is useful, is indeed a remedy of the first value in the purely rheumatic fever, particularly as preparatory to the other means of cure, which consist in the various processes and alternations of warm and cold bathing. Here, the quantity must be measured by effect under the operation,—modified according to the circumstances of the case, but carried to the point to insure the effectual operation of the other remedies. It is scarcely necessary to say, that the bleeding must generally be a large one.

There scarcely occurs an instance, where the febrile irritation obtains, in a perfectly equal degree, in every part of the system, at the same time. In one class the irritation is general,—the principal and leading circumstance,—the local affections are secondary and subordinate. In another class, the local derangement seems to be primary, at least it is principal; it demands and obtains the principal attention in arranging the plan of cure. In acute diseases, where inflammation of internal organs is a prominent or leading feature, bleeding is the first and almost the only remedy. In real inflammation of the lungs, and parts in the cavity of the thorax, (the most frequent and the most serious of local inflammations,) bleeding possesses a decided power of doing good; but, in order to be effectual, it often requires to be carried to an extent, which common opinion, in the present times, regards with horror. It is not possible, by any previous examination, to determine precisely the quantity
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of blood, which ought to be taken away in inflammation of the lungs and surrounding parts. The measure can only be determined by effect, as it arises under the operation. It is a constant rule never to be forgotten, that as an effect, that is, relief from certain destructive symptoms, is the object of the practice adopted; so that object must be ensured before the means are dismissed. The quantity of two pounds of blood, in real inflammation of the lungs, is not excessive; it is not always sufficient; it may even be carried beyond three, without danger to life; nay the object in many cases is not attained, till actual fainting, or a strong disposition to faint is induced.

Where real inflammation exists, bleeding is an indispensable remedy; but the existence of such condition is not always easily ascertained. It is apt to be confounded with pituitous suffocation, denominated peripneumonia notha; or with affections of respiration,—a fluctuating symptom of contagious fever. The distinction may often be known by actual inspection; it is difficult to detail the discriminating marks so precisely in description, as to preclude all ambiguity.—The real inflammation of the lungs and parts within the cavity of the thorax, is generally attended with great tumult in the circulating system; but the expression of the fever is not always open; it is often, as it were, suffocated and oppressed; the heat is deep, strong and ardent, particularly on the chest; the pulse is usually frequent, but not uniformly so;—it is hurried,

hurried, irregular, impeded in its movement,—without freedom or expansion; the heart sometimes beats or throbs irregularly; and the whole organs concerned in circulation evidently labour, even struggle in the performance of their offices; the head-ach is frequently severe and rending, as if the skull were ready to split; sometimes it is heavy and oppressive; the eye is full and painful, the eye-ball distended,—glistening rather than inflamed; the countenance is flushed, clouded,—often grim and expressive of pain,—or dark and bloated; the respiration is hurried,—even to panting; the breath is hot; the lips dry,—with intense thirst; the cough is troublesome, dry, or without expectoration; the pains in the chest and sides are more or less severe;—sometimes sharp and stinging—aggravated by motion; sometimes obscure, dull, with a sense of oppression and difficulty of expanding the chest; the back and limbs ache severely, as if all the moving parts were broken and disjointed; together with these, there are particular sensations of heavy distress,—a sense of fulness, and a suspension of natural secretions. Such form of disease is more common in cold weather than at other times; and its origin is often traced to sudden exposure, or long exposure to cold.—When the symptoms described are present, blood must be taken away without loss of time. It is adviseable, that it flow from a large orifice; and that it be allowed to flow till the symptoms are completely removed; till the chest can be filled
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with ease and freedom; till sweat and relaxation of excretories take place; in short, till the existing movement be completely subverted. The foundation of cure is then laid, and the course of the disease is short. The effect, produced by this means, is confirmed by promoting a determination to the surface, by means of antimonials,—James's powder, or emetic tartar joined with opium, by warm fomentations to the limbs, and particularly by the application of very large blisters to the chest, and between the shoulders. In the early stage of the disease, before expectoration has taken place, or before the foundations of effusion or abscess are laid, the method of cure here detailed may be trusted to with confidence; afterwards it cannot be carried to any extent with safety, or good effect. If expectoration be decidedly established, it must be encouraged; for it is the natural product of the deranged movement,—the attempt to repress it is followed by a new and dangerous commotion. Effusions in the chest, or abscesses in the lungs, are generally fatal in effect. Medical means do not avail;—when fortunate events do take place in such cases, they are more the effect of accident, than of plans of medical treatment.

Besides real idiopathic inflammation of the lungs; pneumonic symptoms, frequently occur in contagious fever; and the countenance being then lurid and grim, or flushed deeply, the case is readily and sometimes dangerously mistaken for

for real inflammation ; for though bleeding be not positively forbidden in this case, the aid of the lancet is seldom required in any extent. The appearance of inflammation of the lungs, is thus often a symptom of another disease,—but a fluctuating and variable one. The respiration is hurried, even laborious ; but it is without that sense of fulness and oppression, that suspension of secretion, deep aching of the limbs, and heavy struggling tumult in the circulation, which are observed to be in some manner characteristic of genuine inflammation. There is here a resemblance of pneumony, but the character is lighter ; the symptoms more fluctuating and changeable, with marks, though not easily describable, which give rise to a suggestion, that the movement is performed in a different circle.

Besides the fluctuating symptom of disturbed respiration assuming the mask of pneumonic inflammation, not uncommon in contagious fever, there also sometimes occurs difficulty of breathing, pain of the sides and chest, with sensations of burning heat, connected with a bilious cause. This form of disease does not require the lancet, or bear it, in any extent, with benefit. It is, therefore, of consequence, as far as can be done, to describe the marks which discriminate it from real idiothetic inflammation. It is generally accompanied with more or less expectoration, which is glairy and tinged with yellow ; sometimes it is accompanied with nausea, sometimes with vomiting of bilious matters ; the tongue is generally

generally foul,—often moist, or at least only dry in the middle; the sense of weight and oppression, with difficulty of expanding the chest, is less sensibly felt here than in the other, and the movements are less oppressed; pains are irregular, change place; they are often sharp, and accompanied with sensations of burning heat; perspiration is not uncommon,—it is even sometimes copious; distinct periodical revolutions are frequently perceived; head-ach is irregular, sharp, shooting,—not heavy and oppressive; the eye is bright,—comparatively sparkling; the countenance rarely clouded or grim.—Emetics are here a principal remedy.

The two preceding are accidental symptoms of another disease, rather than distinct forms of a particular malady. But there is also to be noticed in this place, what is properly a disease of the lungs, though not strictly speaking what is called inflammation. It is characterised by an oppressive secretion of glutinous phlegm tending to suffocation. Its forms and degrees are considerably different; but the leading mark consists in expectoration of a thick gluten, like a jelly. The disease does not terminate in abscess in the same manner as real inflammation; the lungs become impenetrable, and, as it were, agglutinated in the mass. The respiration is impeded in different degrees; it is high, laborious, and often accompanied with a rattling noise; but rarely with panting and pain, as in real pneumonia. The pulse is frequently soft, regular, and full; the coun-

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tenance appears often to be greasy and dirty; the skin damp and clammy. The malady is often, in some manner, epidemic in certain seasons, and in certain places. It is the most fatal form of pneumonic affection; for it is not, like real inflammation, under command of the lancet. The blood drawn from the vein is like a jelly, — rarely of a firm cohesion; and it is generally without distinct separation of parts. It is difficult to speak correctly of the benefits of bleeding; even emetics have no very decided effects, and blisters do not appear to be generally useful. The indication is evidently directed to the means of rectifying the agglutinating quality of the blood, which tends to render the substance of the lungs impermeable. Some remedy no doubt exists in Nature's store-house; but it has not yet been discovered. A mercurial action, if it can be induced in time, bids fairer than any we know; — the alkaline substances, volatile or fixed, given in large quantity, may also have their use. But as the pituitous secretion is frequently, in some degree, combined with real inflammation, the curative indication is also combined.

In catarrhal affections, particularly in the epidemic affection called Influenza, bleeding is rarely necessary, or useful; as it is rarely useful in any case where a secretion is established; for secretion, in this case, is the product of a salutary process, and Nature's cure of deranged action.

In the class of erysipelatous epidemics, as various kinds of sore throats, dysenteries, &c.
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the blood rarely shews a firm cohesion of parts; and bleeding is not found to be useful,—not even to be safe. In the ulcerating process of such diseases it is evidently hurtful. The effect of bleeding, tends perhaps to change a process in a certain train towards effect; a product is thereby marred, through which the disease would have found a termination. It changes the condition of the circulation, disposes perhaps to absorption; the cause of the disease, which had now assumed a local action, is moved in its condition, passes into new channels, and infects the general mass. It is thus perhaps that delirium, weakness, and a new train of symptoms follow the use of bleeding, sometimes even the use of blistering, in the gangrenous or ulcerating class of erysipelatous inflammations. The point of cure, in such cases, is not to subvert, or disturb the existing process, by affecting the channels of circulation; but to solicit the action of the creative or vital process, adding to the energy of the moving powers, by means which absorb excess of irritability.

In diseases of specific contagion, as small-pox, measles, &c. bleeding is only a remedy to be resorted to, in urgency of symptoms which demand bleeding on their own account. In cases of plethora, with evident symptoms of inflammation, it is necessary; but, unless in evident symptoms of inflammation, bleeding seems to be hurtful in the early period of measles. Small, but repeated bleedings on the contrary, afford the most

signal relief, in the symptoms which arise in the later periods of measles,—whether diarrhæa, cough, or difficulty of breathing.

Bleeding is thus a powerful means in the cure of acute diseases ; capable of a great deal of good, or of a great deal of harm, according to the circumstances under which it is applied, and the mode in which it is managed. It arrests perverted movement, or it increases susceptibility to impressiion ; in consequence of which, other remedies become capable of producing those motions, which are analagous to, or which are the identical movements of health. In this view, it is useful in the commencement of fever. If indeed the circumstances, in which it is employed, be the proper ones ; and the management of the remedy be well conducted, it seldom fails of producing a salutary effect. In the advanced stages of acute disease, it is only useful occasionally ; for its effects are only decided, where the movements are not yet rooted, that is, where they do not yet tend, by a regular though diseased process to an issue, which terminates the course of the derangement. In such case, it is subordinate ; in the beginning, in some forms of disease, it may be said to be sovereign.

In the EMETIC class of remedies is found another of the powerful aids employed by medical men, in arresting the perverted rhythm of organic movement, and in restoring susceptibility of impressiion, preparatory to the application of other means. The emetics of the antimonial class act powerfully,

powerfully, and, if properly managed, produce great effect upon animal bodies. They are often employed in the early stages of fever; and in some conditions and stages of fever, their benefits are signal. The lancet commands the cure of a certain form of fever, the action of which is manifested in the grosser circle of circulation; emetics have great power, where the action is directed to organs of secretion,—not where the functions are suspended, but where the process, is in some manner changed; more particularly, where the diseased organ is connected with the part upon which, the action of the emetic has its first and immediate operation. But though emetics are eminently useful, they are not indiscriminately useful. The conditions which define their use, require to be well and minutely considered:—the present view is only an outline.—In the first form of fever, that is, the plethoric, where the action is so particularly manifested in the grosser circle of circulation, and where the advantages of bleeding are so obvious,—(a form of disease, frequent in spring, in dry weather, and among Europeans soon after their arrival in tropical climates,) the use of emetics is not beneficial, not proper,—perhaps not safe, without previous preparation. On the contrary, where there are congestions in secreting organs, or rather excess of secretions, as of bile and mucus, their benefits are great and evident. They are then commonly employed;—and they are employed with manifest advantage, in intermittents, remit-

tents, and autumnal bilious fevers, in diarrhœa and dysentery, in most forms of catarrhal affection, or defluxion on the lungs, in epidemic or erysipelatous sore throat, in eruptive fevers, and generally in specific contagions. In the artificial contagious fever, the cause of which is generated in crowded places, and the action of which has its first effect upon the stomach and bowels, an emetic is the first, as it is the peculiar remedy. It often alone removes the disease in the beginning. Even after the febrile irritation has become general, if the process be not far advanced in progress, so as to be engrafted in the action of the system, an emetic followed by warm and cold bathing, and that followed by the application of blisters to the forehead, temples, neck, or between the shoulders, frequently cuts it short; at least perfectly removes the danger, which might be expected to ensue from the continuance of it. But while emetics are useful in congestions connected with increased quantity and changed condition in the secretions, they are not useful in congestions in the actually circulating system, that is, in inflammation of parts or organs, no more than they are in general fever connected with plethora and accompanied with suspension of natural secretions.

It would require much detail, to identify all the circumstances and conditions, and to estimate correctly all the advantages or disadvantages which result from the use of emetics; but it may be considered as a general rule, and, it is believed, it is a
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safe one, that emetics have no place where the action of the disease is chiefly manifested in the circle of the greater circulation, with suspended secretion, the case in which the lancet is so useful. On the contrary, where the action of the disease is manifested in the secretions of secreting organs, in which case bleeding is rarely necessary, the benefits of emetics are remarkable. Besides a previous and correct estimate of the conditions, which prescribe the use of emetics in acute diseases; the manner of exhibiting the remedy, and of managing the patient while under its operation, deserves some consideration, in order to ensure fully the beneficial effect. In diseases of the intermitting, remitting, and bilious forms, the antimonial emetics obtain the preference, as they ought in all cases, where strong and general effect is required. It is necessary, in the exhibition of emetics, that the state of the stomach, if not naturally, be rendered artificially susceptible of the full effect of the operation. In diseases, with an increase of the bilious secretion, or in constitutions which naturally possess the bilious character, the operation of emetics is generally full and effective,—and the benefits are in proportion. In accidental conditions of disease, or in constitutional circumstances of subject, where this character is wanting, or where the excess of secretions tend to phlegm, the stomach is acted upon with difficulty,—and the effect of the operation is then seldom complete. In such case it is adviseable to give some water,

as hot as it can be drunk, either alone, or with the addition of an alkaline salt, previous to the exhibition of the emetic. It is farther adviseable, that persons, under the operation of emetics, be placed in bed, well covered with clothes, and that the air of the apartment be rather of a high temperature. It is also serviceable in many cases, as aiding the effectual operation, that the feet be previously bathed in warm water, or that the limbs be fomented with cloths wrung out of hot water ; in short, that the general sensibility to impression be increased, as well as that the condition of the stomach itself be consulted, and previously disposed to answer effectually in operation.

BATHING. When the perverted motions which obtain in fevers, or rather, in which fever consists, have been arrested by the effects of bleeding, emetics, or other means ; or, though the motions be not actually arrested, when susceptibility of impression has been restored to organism, by these and other suitable processes ; the next, the great and the final effort, is directed to the means of bringing back a movement, similar to that of health. When the impression of the cause of diseased motions has been removed ; or when the condition, under which it acts, has been changed, or weakened, the application of the common stimulants of life, is often sufficient to recall the natural movements of the machine. Where this is not the case, and there are many instances where it is not, the attainment

tainment of the effect is committed to other powers. Of these, bathing, that is, the application of water to the surface of the body, alternately warm and cold, has a powerful operation; and it is considered, with justice, as a most powerful means of originating new motions. This remedy has been known since the time of the Emperor Augustus; and its use and management were well known to Galen*, and well defined by

* It will not be altogether foreign to the present purpose, to transcribe a case from Galen, as an example of the manner in which he conducted the management of this remedy. The cause of the fever is supposed to be constriction, arising from washing in certain styptic waters.—Δεον αυτικα του πρωτου παροξυσμου παρακραζοντος, απαγειν εις το βαλανειον επιτρεπειν τε λουεσθαι πολλακις ει βουλονται, μη μονον απαξ, αλλα και δις· εγω γουν εασας απαντους τους αλλους, αναμνησω σε του λουσαμενου μεν εν τοις στυπτηριωδεσιν υδασιν, α καλουσιν Αλδουλα, πυκνωθεντος δ' εκ τουτου το δερμα, κεντευθεν αρξαμενου πυρεττειν, αρχεσει γαρ ενεκα σαφηνειας ουτος οϊον παραδειγμα τι του λογου γενεσθαι, παρησαν μεν επισκοπουμενοι των ουκ αφανων τινες ιατρων, ο μεν Ερασιστρατειος, ο δε μεθοδικος· εδοξε δ' αμφοτεροις ασιτησαι τον ανθρωπον· ου μεν εισασαμεν γε ημεις χωρισθεντων αυτων ελθοντες, αλλ' εις βαλανειον εισαγαγοντες ευθως, και χλιαρον ελαιον επιπλειστον αυτω περιχεαντες, ανατριφαντες τε πραοτατα το πλειστον του χρονου μερος εκτω της θερμης δεξαμενης υδατι διατριβειν εκλευσαμεν· ειτα εξελθοντα και χρησαμενον υδατι ψυχρω κατα τα ιωθοτα, σκεπαντες σινδοι, και βραχυ καθισαι κειλευσαντες ως ανακτησασθαι την δυναμιν, αυθις εισαγαγοντες εις το βαλανειον, ομοιως τε παλιν αλειφαντες τε και τριφαντες, και κατα το θερμον υδωρ χρονισαι κειλευσαντες, ειθ' αυθις εξαγαγοντες και τω ψυχρω βαψαντες, απομαζαντες τε, τροφην εδωκαμεν, αυτικα μεν εξελθοντι μετα το πινειν υδατος, πισσανης χυλον· &c.—Galen details this case as an example of his practice in the treatment of fevers from constriction. It is here only transcribed, as an example of the manner in which he conducted the process of bathing; and in that view it is instructive and valuable. Galen, tom. IV. lib. viii. p. 119. ed. Bas.

by him. It farther appears, by the relations of travellers, to have been, and to be even now a practice with several of the Eastern nations. It was tried by Dehahn at Warsaw, in the year 1737; and rubbing of the body with snow, a process somewhat similar, but still more effectual than cold bathing, was employed by Samoilowitz in the plague of the year 1771. These facts existed, but they seemed not to have made any impression; for bathing in fevers, has not been reckoned among the regular means of regular physicians, till very lately. It has now attracted some notice in England,—a notice chiefly due to the popular manner in which the subject has been treated by Dr. Currie, of Liverpool; for though the remedy has been employed by the author for near thirty years, that is, since the year 1774; and though the knowledge of it has been before the public since the year 1791; as well as that the fact had been communicated to several persons before that time; it is not probable that it made much progress, in consequence of his recommendation.

In the year 1774, cold bathing was not a remedy commonly recommended by medical teachers, or medical writers, in the cure of fever. The hint, here acted upon, first suggested itself from the relation of a fact mentioned by a seafaring man, who had been master of a transport ship at the siege of Havannah. In noticing cursorily, among the events of that service, that several of the men, who were on board of his
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ship (which was a kind of hospital ship), threw themselves into the sea in the delirium * of fever, that some were drowned, that others were recovered from the waves; it was asked, if he recollected what was the effect upon health. He had noticed the fact, and remembered the event:—the delirium ceased, and the greater number recovered. The fact, which was candidly expressed, made a strong impression. An opinion was suggested by it, and that suggestion was strengthened by an event which occurred in the island of Jamaica, early in the year 1774. A negroe child was lying in a piazza, apparently within a few minutes of death, in the secondary fever of small-pox. A pail of water was by chance at hand, the presence of which probably connected the ship-master's relation with the present case. The negresses who attended the child was desired to sprinkle its face and breast. It was done;—the effect was striking; for the apparently dying object was instantly revived. The effect, however, was only temporary; the former state recurred again; the affusion was repeated, and the effect was similar.—By repeating this process at intervals, life was preserved for upwards of twelve hours, when apparently it could not have gone on, without such means, for

* The delirium noticed in this case, was probably of that species where there is a deception of vision, representing the sea as a meadow or green field.—Some instances of this occurred among the sick on the passage to St. Domingo, in the year 1796.

for as many minutes. The effect was singular,—similar to what follows the affusion of cold water upon a dying fish, the subject of the experiment reviving and sinking alternately, according as the means were employed or withheld.

With the relation of what happened at Havannah in mind, and the example of what happened to the negroe child before the eye, the subject of cold bathing strongly attracted the author's attention. The practice, in short, was adopted by him in the year 1774. It was tried without fear ; and the effects were favourable beyond expectation. It was employed freely in the West Indies ; and it was even tried in England, prior to the year 1791, though only in a few instances ; for the prejudices, against such a remedy, were not to be easily overcome. The experiments of the practice have, however, been so numerous, and the proofs of the benefits so multiplied, so varied, and so amply extended in different climates, and in different conditions of disease, during the late war, that the memory of what happened in the preceding period may be allowed to be superseded, or blotted out. Since the year 1791, that the author's treatise on the fevers of Jamaica made its appearance, his experience has been exercised in an ample field ; and his opportunities of witnessing the effects of bathing, have probably been greater than those of any other person in Britain, probably than any other person in Europe. Without predilection in favour of a remedy, of which, though
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not the discoverer, (for the discoverers are not of this age or country,) he assumes some claim in defining the principle which ought to direct the application, he does not hesitate to say, that, if there be a charm among the means employed for the relief, or abrupt cure of fever, it is found in a judicious management of warm and cold bathing. The proofs are not confined to solitary instances; for it has occurred almost daily, that persons who had entered the bathing room, under symptoms of the most threatening aspect, have demanded their clothes, that they might return to their military duties, after the routine of operation performed in this place was completed,—a routine, of which bathing, was the last and most important part. In fevers of a certain form, in a certain stage of progress, or after a certain preparation, the effect is generally decisive of health.

But in order to be able, in all cases, to employ so powerful a remedy with advantage, it is previously necessary to investigate minutely, and establish demonstratively, the principle upon which it acts fundamentally, as well as to define correctly, the circumstances, which favour or oppose its successful operation. Bathing, like every other power in nature, acts upon the excitability of organism, and produces, more obviously than most others, an effect upon organic movement. It is immediately applied to the surface of the body, it consequently acts upon the surface, and produces effects, corresponding with its own power, and the capacities of the part

upon which it acts. From attending minutely to the circumstances of the conditions, in which it appears to produce the greatest change or greatest good ; susceptibility of impression, with a power of producing action, termed excitability, seems to be that alone, which is uniformly and radically connected with its operation. According to the degree of this condition, may be estimated, *à priori*, the effect of the means. The means are in this case applied to the surface, and as the change produced, is in proportion to the power of the cause, and the condition of excitability of the part, to which the cause is applied ; so the effects are proportionally most remarkable, where the surface is most excited,—or most excitable. The balance is then ticklish, and a new train of action originates from a slighter cause. It is a common observation, that excitability is ordinarily connected with, or influenced by, the operation of heat. Hence an increase of the degree of superficial heat, promoted, even by artificial means, presents itself as a cause calculated to ensure effect. The presence of heat, however produced, is also considered as a general index of forming a judgement of the result.

That the state of excitability, is the cause upon which cold bathing acts as a remedy in the cure of fever, is so clear, as not to require any proof; that heat is frequently an accessory cause of excitability is also true. The author has always considered the subject on this ground ; consequently, where the excitability of the surface was deficient in the actual

tual circumstances of the case, his efforts were uniformly directed to the raising of it artificially to a point, where it becomes capable of an easy impression. It must, however, be remembered, that excitability, or rather susceptibility, is not suppressed or dormant from the operation of one cause only, or expressed in one condition simply : hence the means, required to restore it, must have a corresponding variety. Torpor is unfavourable to action of every kind ; and torpor, connected with plethora, stagnation in the venous system, and suppression of secretions, is unfavourable to the action of cold bathing. In this case, susceptibility is restored by bleeding. Torpor arises from other causes ; and susceptibility is restored by other means, viz. by increasing the heat of the sick apartment, where the weather is cold and damp ; by frictions of the skin ; and particularly by warm bathing.

Cold bathing in its action, in the cure of fever, is considered as a stimulating power, producing a new movement, analagous to that produced by the common stimulants of life. Its powers are exerted relatively, according to the circumstances and condition of the subject. The operation is connected radically with susceptibility of impression, and more directly with susceptibility in the surface,—the organ to which the application is made. The proofs of this are numerous, but they are nowhere so clearly illustrated as in the Russian mode of bathing. Here the surface of the naked body is stimulated by heat and titillation

titillation to a high point of excitement. Every torpid fibre is animated, the whole surface swells with the circulating tide, and expands with life; but the condition is forced and artificial. The balance stands at a ticklish point. The application of cold, whether of snow, the affusion of cold water, or exposure to cool or cold air,—means directly opposite to those in action, not only arrests the progress of the superficial excitement, but produces a movement of a contrary nature;—a new train of action in all the functions of the animal machine is put in motion. The body here is not simply cooled, that is, the artificial heat is not simply abstracted by the application of the cold; the fundamental movements are changed; life, which had been languid, is, as it were, renewed, and health is invigorated by the application of means, the power of which is increased, indeed almost created, by the production of an artificial previous condition. The practice is an enlightened one. It affords a good illustration of the operation of warm and cold bathing, employed alternately in the cure of fevers; and it proves decidedly that the condition of excitability, in the part to which the application is made, is the circumstance which principally conducts the process to successful issue.

But though it be obvious from what is said in this place, that the action of cold bathing, as acting radically upon the excitability of surface, raises new movements in the organic structure,
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analogous to those of health, and thereby cuts short the course of fever; yet others, indeed all others, from the time of Galen to the present day, have considered the salutary effects of the operation to be connected with the condition of heat. The application of the remedy is thus indicated by excess of heat;—the benefits are even estimated according to the absolute quantity of heat, measured by a thermometer. The rule of measuring the heat by a thermometer aims at exactness; but it is defective in application, for it does not touch all the circumstances of the case. It will be found, upon trial, that sensation gives a better idea of morbid heat than a thermometer; in short, measure by sensation is that to which we must at last resort. A thermometer only measures absolute quantity; it gives no information on the subject of quality, whether of the kind consistent with life, or of the kind which indicates the presence of a process leading to disorganization and destruction. It is commonly known, that increase of heat, is usually a symptom in fever; and it is admitted, in this place, that a certain condition of increased heat,—but not every condition, furnishes an indication for the employment of cold bathing. It is possible that excess of heat may exist, and it actually does exist, without superficial excitability, that is, without a due share of sensibility of surface, both in the early period, and in the latter stages of fever. Such condition of fever is common in spring, common with Europeans,

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soon after their arrival in tropical climates, both at the commencement, and in the after period of the disease, either as connected with plethora, or with internal congestion. The heat is then often ardent,—particularly on the trunk of the body. A thermometer, in this case, proves a fallacious guide. It indicates a high temperature; but experience proves, that cold bathing does no good;—it probably does harm in the case connected with internal congestion. To trials in such cases, it is believed the credit of this remedy, has been often sacrificed in the fever of the West Indies, and probably in the fever of America. But further, if an increase of heat, as indicated by the thermometer, or even by sensation, be considered as a circumstance uniformly necessary for the safe and useful employment of cold bathing, the remedy will be denied to that numerous class of fevers, in which the skin is moist and soft, cool, even cooler than natural, though retaining an equal share of the life and sensibility, which yet continues to animate the frame; a case not uncommon in warm climates, where tremors, startings, and faintings, make prominent features of the disease. Here, washing with cold water, at least with cold salt water, is known to be singularly beneficial. If it then be true, that cold bathing is useful without an apparent excess of heat, and that an excess of heat may exist where cold bathing is not useful, it is evident, that excess of heat, as expressed by a thermometer, even by sensation, cannot be allowed

lowed to be the radical condition, on which the benefits of cold bathing in fevers depend ; nor the measure of such heat, the rule whereby to sanction its use. Cause and effect are not separable. Cold bathing always produces effect, where there is a quick susceptibility of impression ; where that is wanting, it has little perceptible action. But if cold bathing, independently of this, be supposed to cure fever on the principle simply of abstracting excess of heat, the cure of the disease may be conducted in such manner as never to fail ; for cold, in its application, is capable of being carried to the point, not only of abstracting excess, but even of extinguishing just proportion. It is, however, fully proved, that morbid excess of heat may be extinguished, while disease remains ; or that processes, destructive of life, may go on in fevers, without any unusual extrication of animal heat. Heat is only one condition, or one expression of deranged action ; it is not the uniform and positive cause of the disease, which it ought to be, on the supposition, that abstraction of its excess cuts short the course of the diseased motions. This is so evident, that it would not have been necessary to have said so much in explanation of a matter which is clear, did not common opinion rest the value of the remedy on a supposed abstraction of heat. In that view it is only of limited application ; it even appears, if there be any faith in experience, to encounter contradiction, in the point of fact, on that ground. On the other, as acting by re-

storing the natural rhythm of movement in the organic structure, by the force of a new stimulus, it preserves a consistent, intelligible, and clear explanation throughout.

It is assumed as a visible and incontrovertible fact, that the recovery of health consists in restoring to the natural order, the rhythm of movement in organic structure, perverted by the action of a morbid cause. This, it is evident, can only be effected by an operation on the moving powers; and, it is evident, that the effect can only be in proportion to the power of the cause, and capacity of action in the subject. The quality termed excitability, that is, susceptibility of impression, and capability of manifesting action, is uniformly the condition of subject which regulates these effective movements; for, according to relative conditions, a great variety of effect is produced from the application of the same causes. The causes, which affect the condition of excitability in animal bodies, are various; the degrees and modifications of the effect have also considerable diversity of shade. Torpor, or insensibility, is placed in the opposite scale to excitability, or susceptibility of impression. It is of various degrees, and it has different modifications; but there seem to be two points, to which they severally arrange themselves, viz. torpor, from defect of the quality of excitability, as in old age, in consequence of artificial circumstances of life and of previous morbid derangement; or, from the influence of the existing impression of a foreign

foreign cause, commanding the energies of the system to a foreign object of action. The last is more common in recent disease, and more complicated in its causes and conditions, than the first. It is the condition, chiefly to be attended to, in preparing the body for the operation of means calculated to restore the ordinary movements of health. Where it exists, whether connected with a plethoric and bloated stagnation in the venous system, or with a constructive impediment to the animating influence of life in the minuter channels of circulation, the effect of cold bathing is obscure,—at best temporary, and rarely beneficial. Both conditions are found in the early stage of fever. The first is common in the fevers of spring; also in summer, when the weather is very hot and very dry; and among Europeans, soon after their arrival in tropical climates. It is connected with plethora, with suspension of secretions. It seems to result from the influence of a foreign impression, engrossing the excitability of the system in a perverted action. It is thus an act forced by power;—the natural sensibility is suppressed or suspended. In such case, head-ach, a common symptom in fever, instead of being acute, is often heavy, dull, and oppressive; the whole animal movement is torpid, as from oppression; the motions languid and dislocated; the heat of the body deep, rather than superficial,—ardent rather than warm. Cold bathing, when employed in those circumstances, gives only a temporary relief. It is

misapplied; for the condition, under which its benefits arise, is not present. But though not present in the actual circumstance of the case, it is easily produced. If blood be drawn, and allowed to flow, till irregular and flying pains take place of sense of weight and oppression; till faintness, connected with mobility, be succeeded by sweat; or till relaxation of the skin, and susceptibility of impression are restored; the copious affusion of cold water upon the head and shoulders, by means of buckets or large sponges, so as to imitate a shower bath, rarely then fails (the diseased movement being now arrested) of restoring health speedily and perfectly. The other case of torpor, or defective sensibility is more common in damp, foggy, and cold weather, in crowded transports, in miserable cottages,—ill ventilated, damp, not warmed by the influence of fire; and among persons under artificial restraint. The countenance is here fallow and greasy, as if it were dirty; the skin dry and withered, or damp and flaccid; head-aches are frequent, nights sleepless, with irregular flushings of heat, but without an apparent form of proper febrile action. The disease alluded to, is radically of the contagious class, and cold bathing is ordinarily a remedy of value in the cure of contagious fever; but the condition, which sanctions its use, is not yet present. The surface of the body is torpid, but not torpid as in the preceding case, where there is an oppressive plethora, or a strong, but perverted form

form of action. Bleeding here, is not the previous remedy. Warm bathing, frictions of the skin, a warm atmosphere, the act of travelling in open air in carts, carriages, or other conveyances, with the effects which result from the use of emetics, generally in this instance, prepare the condition, under which cold bathing acts with such effect, as to break the chain of diseased movement entirely, or to bring it into a good and regular train, by which it proceeds to a safe issue.

Besides the above conditions of torpor, connected with the existence of fever in its early stage, there often occurs, in the latter period of the disease, a torpor of a different character from the preceding. The character of the disease is supposed to have been of a violent kind in the commencement; the circumstances of resistance are such, that the product of irritated motions is not effected. The diseased process seems, in reality, as it were marred in its course; the irritated motions subside; the heat forsakes the surface and extremities, but continues ardent on the trunk of the body, and about the præcordia; the skin, which had always been thick and dry, becomes thick, torpid, and impervious; congestion takes place in the internal parts; and though there be no local pain, there is an undescribable anxiety, with a fidgeting and unceasing desire of change of posture. There is with all this, no disposition to faint, and rarely any delirium:—the mind is stoically firm, as the body is inanimately torpid. The action of the

cause of the disease was principally exerted, in its early period, in the system of the great circulation. The excitability of the system seems now to be absorbed, or exhausted, in consequence of the violence and continuance of perverted action; changing organization, even to paralysis. The blood loses its power of cohesion;—the veins lose their power of action;—they are uniformly found to be distended after death, in all the internal organs, as if artificially and successfully injected. In this case, even in that stage of the disease where the trunk of the body is still ardently hot, cold bathing does no good:—if it has any effect, it may be thought to be an injurious one, for it tends to increase accumulation of blood in the internal parts.

In these cases of torpor and insensibility to impression; whether connected with a strong existing impression of a foreign cause, and suspension of sensibility; or with exhaustion, and absolute defect; cold bathing, (whatever may be the other circumstances,) does no material good. On the contrary, where there is excess of mobility in the moving parts, (not unfrequently a characteristic mode of action of the cause of fever,) its benefits are signal. The limbs and members tremble in such case, when motion is attempted; the head can scarcely be raised from the pillow, without fainting or loss of sight; tremors, agitations, delirium, and startings, threaten the greatest evils; the pulse is generally frequent, small, and sometimes weak; the heat
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of the body is not increased, perhaps it is even below the standard of heat in health; there is no internal anxiety,—no signs of internal congestion; and the skin is soft and sensible, or susceptible of impression. The case is apparently a case of great alarm, but, in reality, not a case of great danger; for cold bathing, or rather washing the body with cold salt water, usually places matters in safety. The changes, in consequence of this application, are so great and beneficial as scarcely to be credited, if they were not verified, by repetition, in frequent instances. This condition of disease occurred very often in Jamaica, between the years 1774 and 1778. Such form was rarely seen in St. Domingo, in the years 1796 and 1797.

It may not be unnecessary to notice in this place, as serving to give confidence in the use of the remedy, that the condition of patients, in undertaking the process of bathing, was so ticklish, that fainting was sometimes the consequence of removal from the bed to the floor, even by means of a sheet; yet even in this condition, washing the body with cold salt water was not only safe, but scarcely ever failed to reanimate the frame, at least for a time; nay, it frequently was powerful enough to impart such vigour that those seemingly dying persons, rose up and returned to bed without assistance;—nay, after the second or third repetition often walked about the apartment in an apparent state of convalescence.

valescence. Excess of superficial heat was not present in these cases; but there was an excess of mobility, that is, susceptibility of impression in all the moving parts: There was no change or destruction of organization, which renders action difficult or impossible.

The management of bathing in the cure of fevers, is a subject so important in itself; that it will be less blameable to repeat instruction, in some parts, than to leave it defective in others. The general condition, with which the effect is so intimately connected, has been noticed, viz. susceptibility of impression in the whole system, and more particularly in the organ, or system of parts, to which the application is made. It now follows, to notice in detail, the forms and conditions of disease, in which the effects of the remedy are beneficial or otherwise.

As the good effects are merely relative to the condition of the subject, it is evident, that, if the favourable condition does not exist in the actual circumstances of the case, the first object is directed to the means of giving it. In the first form of fever, noticed in this place, viz. that connected with plethora, oppression, tumult, and irritation, (seemingly from resistance in the circulating system;) suspended secretions, a dry, hot, and impervious skin;—a condition frequent in the fevers of spring, even of summer, in very hot and dry weather; and in some manner peculiar to Europeans, newly transported to tropical

cal climates ; the affusion of cold water on the naked body, has only a slight and temporary effect. It refreshes for a time ; it does not change the nature of the disease, or arrest its course. But while cold bathing, applied under the circumstances described, is followed by no material or permanent advantage ; yet, where the condition is changed by previous bleeding, carried to the point of arresting the existing movements, and of restoring the susceptibility of impression to other causes ; the affusion of cold water, then, gives origin to a train of action, similar to that of health, which, with due care, is eventually confirmed into the healthy habit,—without injury, and without danger of retrograding to its former path. Bleeding and cold bathing, here, furnish a speedy, a safe, and effectual cure for a form of fever, which destroys life occasionally in every country ; but which has committed dreadful ravages among Europeans, particularly, among European soldiers in tropical climates. The remedy is comprehended in the means now mentioned ; but the effect depends on the management. A scanty bleeding, rarely prepares the condition prescribed for the application of the means ; and, unless the condition be duly prepared, the effect is looked for in vain.

In the second condition of general fever, where there already exists a due share of susceptibility, and more particularly, where there is increased excitability in the surface, the application of cold
bathing

bathing requires no preparation. The condition exists, and the effect is decisive of health.

The fevers of the periodic class exhibit great variety of condition; and as the benefits of bathing are relative to condition, so this remedy is sometimes the cause of great good,—sometimes of no value. In intermittents, and in remittents not accompanied with signs of internal congestion, in which the hot stage develops freely, tending naturally to a copious and warm perspiration,—cold bathing, properly managed, is capable of eminent good. When the hot stage is completely formed, the application of cold water to the head and shoulders, in repeated affusions, sometimes extinguishes abruptly, generally shortens, the duration of the paroxysm;—the succeeding intermission is also more perfect. If care has been taken previously to remove all congestion from internal parts, particularly from the biliary organs, it often seems to suspend the course of the disease, in a similar manner with Peruvian bark. But though this be true, it ought also to be remembered, that where this effect is expected as a result; the expression of the disease, ought to be more in the outer circle of the circulation, than in the internal parts; for it is found by experience, that cold bathing is less useful in the low autumnal bilious fever of European countries, than in most other kinds of acute disease. The expression of febrile action is, in this case, little in the channels of
general

general circulation; the excitability of surface is not strong and permanent; while there is often irritation, and sometimes a congestion in the organic structure of the alimentary canal and biliary system. The good effects of cold bathing, in such case, are not remarkable; and the remedy, when employed, requires to be preceded by a particular management, viz.—by warm bathing, by frictions, and warm temperature of air, capable of producing the previous condition, that is, excitability of surface. But even with this management, as the change perhaps can scarcely be rendered complete, the effect is seldom so decisive, as it is in some other forms of malady. Yet, when the condition of a fever so originating, has been changed by accumulation in ships or barracks, or by circumstances of weather and other management, so as to produce a form of disease, the action of which is more particularly manifested in the vascular system and surface of the body, cold bathing resumes its place. Such change often happens, when troops retire from the field into winter quarters; or when they embark in transport ships for foreign service.

The action of the fever of the contagious character is particularly directed to the skin; consequently the action of bathing, may be supposed to be particularly adapted to its cure. In this form of fever, there are rarely marks of internal congestion:—The first passages—stomach and bowels, receive the first impression of the action of the cause; the superficial parts of the
body

body manifest, more than others, the signs of the first febrile irritation. The skin and superficial parts are differently affected; they are either preternaturally susceptible of impression, with various flying pains and burning sensations; or, they are cold, dull and torpid. Circumstances so opposite, though fundamentally requiring the same radical remedy; require different means of preparing the previous condition. The first action of the cause of contagious fever, is demonstrably upon the stomach;—a vomit is the first remedy. After the operation of an emetic, the affusion of cold water rarely fails to cut short the course of that form, which is distinguished by heat and superficial excitement. Where the surface is torpid, languid, and greasy; air of a warm temperature, exercise in open air, frictions to the skin, emetics, and warm bathing, as animating and enlivening the surface, precede the use of the final remedy,—the affusion of the cold water. The effect is then, for the most part, complete.

The good effects of bathing are observed to be most remarkable, where the action of the disease is principally manifested in the surface of the body; they are also considerable, where it affects the muscular parts, or moving powers. Thus, in fevers of the rheumatic form, bleeding, warm and cold bathing, employed in the proper order of succession, and with due attention to circumstances, may be almost always considered as means, effective of a safe and speedy cure.

In the class of eruptive or exanthematous fevers, the safety of the application of cold bathing is doubtful; at least the effects of it have not as yet been precisely ascertained by the author. In the eruptive fever of small-pox, the washing of the body with cold water, appeared, in many occasions, to do good. In measles it was not attempted, from fear of affecting the circulation in the lungs; whether on good grounds or not is uncertain. In scarlet fever, with ulcerated fore throat, a disease which shewed great malignity of character in the latter end of the year 1801, the custom of pouring cold water on the head and shoulders, from buckets, as recommended in some other fevers, was not resorted to; but the body was washed frequently, by means of sponges, with cold water, vinegar and water, even with spirits of wine and camphire,—and evidently with benefit. The practice was not however carried so far as it might have been; and it was not so managed, if capable of such effect, as to stop the course of the disease abruptly. Strong effort is necessary, to stop destructive progress in this disease. It is not perhaps possible to suppress all at once the morbid expression. In small-pox and measles such idea cannot be entertained; the disease proceeds, and is allowed to proceed in its course; so as to bring forth its regular product.

In fevers, where an internal local affection is a prominent feature of the diseased action, the good effects of cold bathing are very limited;—

the application of the remedy is even sometimes dangerous. It has been observed already, that cold bathing has no very decided power over the autumnal fever of European countries. Cold bathing generally applied, has, in like manner, but little effect over the pure dysenteric form; the application of wet cloths, or wet sponges to the abdomen; and still more the sitting down in a tub of cold water, or in a running stream, under the torments of this disease, produce singular relief from tenesmus, and contribute materially to the cure of the malady, whether in the chronic or acute stage. It may be concluded from such example, and the truth of the fact is well ascertained, that the benefit of cold bathing actually depends upon direct application to the part preternaturally excited, or to parts connected with it, by direct continuity; for, when the action of the cause of fever is principally manifested in the organic structure of the superficial parts of the body, the change is great, and the good effects are signal. Where this condition is wanting, the same application does no good. On this ground, the application of cold water in glyster, or the application of cold water to the fundament, as a part continuous with the internal surface of the alimentary canal, gives great relief in the dysenteric form of fever; the same application to the body generally, more especially to the extremities, is usually hurtful. The fact is well established, and it is well illustrated, in the example of drenching persons ill of
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burning fevers with cold drink. It is proved, that in fevers, accompanied with excessive and raging thirst, the coldest water may be drunk with safety, and without limitation of quantity. If the raging thirst be completely satisfied, the fever, or the paroxysm of the fever, will probably be extinguished; and it will be extinguished without danger, in the same manner as a fever, manifesting its action in the surface, is extinguished by cold bathing. On the contrary, when the surface and external parts of the body are preternaturally excited, the limbs at the utmost stretch of their exertions in exercise, or in travelling, the skin scorched, and the body melting under a burning sun, a draught of cold water, drank suddenly at such time, often occasions death,—instantly, as a stroke of lightning. The excitement is then in the surface; the cold drink is misapplied, for the stomach is faint rather than thirsty.—But if cold drink, in such case, has fatal effects; washing the body with cold water, is safe and refreshing; for the application is direct to the cause.

The benefits of cold applications, whatever these may be, are capable of being communicated directly or indirectly, in a greater or lesser degree, to most parts of the body. The heart and lungs, the centre of circulation and elaboratory of life, stand in circumstances somewhat peculiar from others, with respect to the application of this remedy, in the cure of their diseases: Connected with the rest of the body, only by

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vessels,

vessels, the instruments of functions, the operation of the causes which affect these instruments at their sentient extremities, is communicated, with more or less impression and effect, to the original source and centre of the movement. The fluids of the body are in a state of constant motion, with different velocities. The sudden application of cold water to the surface, particularly, when dashed with force upon the naked body, either from the circumstance of actual cold, or from the manner of application, necessarily causes the blood to move rapidly into the interior, so as to be accumulated in the lungs and great vessels near the heart. If inflammation, which is a congestion in a certain state of preparation towards rupture of vessels and effusion, exists in the lungs under the circumstances described, the sudden application of cold water, which is usually accompanied with agitation, interrupted respiration, and tumult among the great organs of circulation, may reasonably be supposed to aid the disposition to such effusion, or to lay the foundation of future abscess. The action of the cold water not being applied directly, or even through continuity of parts, to the substance of the organs preternaturally excited; has, in such case, no power of changing, by a direct operation, the perverted movement of the organic structure, which constitutes the disease; on the contrary, it probably adds to the congestion, by accumulating a load of blood in the inner circle, in consequence of which the functions

become

become impeded and oppressed. On this presumption, the practice of dashing cold water, by means of buckets, on the heads and shoulders of persons labouring under pneumonic inflammation, was considered to be dangerous ; and therefore was not attempted. But it may be observed, at the same time, that, after the actual inflammation was removed by copious bleeding, or other means ; or where the pneumonic affection consisted in apparent, rather than in real inflammation, as in some kinds of contagious fevers ; the practice of washing the body, particularly the head and chest, with cold water, by means of sponges, was followed with singular benefit. The rubbing of the body with snow would be still more effectual ; but snow is not always at command, and it is rarely resorted to. It excites the action of the surface more powerfully, from the greater degree of cold, as well as from the manner and greater length of the application, than the sudden and temporary affusion of cold water ; and on that account it is preferable.

From the different views, in which the subject of cold bathing has now been placed, the circumstances, connected with which, have been noticed, and repeatedly verified by the author, the reader may probably be enabled to entertain some idea of the mode of operation, and directed into the road of employing it as a remedy upon principle, and with an effect correctly estimated. Its operation consists in exciting a new

train of movement, contrary to the existing one, and analogous to that of health. The effect corresponds, in degree of perfection, with the power of the agent, and the susceptibility of the subject; that is, the degree of cold and excitability of the moving principle. It thus often fails, where the power of the agent is weak; as for example, in hot climates, where the degree of cold cannot be brought near the freezing point; more especially, where there exists, at the same time, a strong morbid impression, blunting sensibility, and rendering the machine less sensible of the impressions of minor causes. The affusion of cold water, judiciously applied to the naked body, at a temperature of thirty-two degrees of Fahrenheit's thermometer, or the rubbing of the naked body with snow, rarely fails to impress the system; to control the existing movement, though deeply fixed; and to excite a new train of action of a better kind, if the foundations of organization have not been previously loosened or destroyed. The application of snow is powerful; for even where the action of life is suppressed, as in the case of frost-bitten limbs, it speedily restores the part to its natural function. Cold may thus, in certain circumstances, be said to be a power strongly stimulative of animal life. The truth of the fact is familiar. There are few of the common class of mankind, who have not, at one time or other, experienced, in their own persons, a glowing warmth,—the marks of action, from rubbing

rubbing the hands and face with snow ; or from washing them with ice water. As the power of the remedy seems then to consist in the degree of cold, and the aptitude of the subject in the state of excitability ; the management of the application is regulated between these two points, as the success of the effect corresponds ordinarily with these conditions. Hence it is necessary, previously to the application of the remedy, to remove torpor, that is, the effect of the action of the cause of the disease. It is even necessary to increase, artificially, the excitability of the moving principle in the general system, particularly in the parts, in which the action of the disease is chiefly manifested, and to which the remedy is more directly applied. Towards the effecting of these purposes, bleeding, emetics, warm bathing, frictions of the skin, a warm temperature in the air of the sick apartments,—are all means of high service. According to the several qualities of these means, and the circumstances of the subject, the condition necessary to the successful action of this remedy, is prepared with more or less facility, and with more or less certainty of effect. But that nothing may be wanting on this subject, which the author's information is capable of supplying, the process, or manner of conducting warm and cold bathing in the cure of fevers, is described below, with the requisite circumstances of detail in the different steps.

When the condition of body, under which cold bathing acts with effect, has been prepared by previous bleeding, by emetics, by purges, or by other means; so that congestion in the venous system is removed, and that the pores of the skin are opened; or when congestions in the biliary system and derangements of the alimentary canal, consequences of the direct action of the morbid cause, have been changed or affected in their conditions; the surface of the body being then warmed by the air of an heated apartment, the skin stimulated by frictions, and animated by warm bathing; in short, when the whole moving powers have been placed upon a ticklish balance, the affusion of cold water upon the naked body,—upon the head and shoulders, in the manner of a shower bath, produces a strong effect; it then ordinarily produces its own action, which is analogous to that of health. The effect is indicated, as the act is usually followed by a full, strong, a free and expanding pulse,—frequently by a copious perspiration, by a sound and refreshing sleep, and by a sweet sensation of comfort in all the feelings. It is desirable in conducting this process, that the degree of cold be as near that of freezing as possible; it is essential, that the water be pure,—fresh from the spring or fountain, and that the affusion be continued, till marks are evident, that an impression is made upon the circulation. If the effect be not decidedly attained by the first application,

plication, it will be proper to allow the patient, after he has been rubbed dry and covered with a sheet or blanket, to recline upon a couch for a few minutes. The process must then be repeated, so modified and changed in its circumstances, as may best insure the purpose for which it was undertaken.—It was the author's custom at one time to dash water upon the head and shoulders, in large quantity, from buckets; but as the idea of such drenching is formidable to most people; and, as it is not certain, that any benefit is obtained from the impression of fear, he now generally prefers the practice of washing the body with sponges, which take up a large quantity of water, so as to imitate a shower bath, continuing the washing for a length of time sufficient to make impression. This answers well, where the degree of cold of the water is under forty degrees of Fahrenheit's thermometer; where above that, the effect is to be attained by the larger quantity and force of application. It is to the upper parts of the body,—the head, shoulders and trunk, that the cold water in this process is principally applied. It was even usual, and it was thought to be useful, to keep the lower parts immersed in warm water, during the cold affusion upon the upper parts. At other times, it was thought better to cause the patient to plunge at once from the warm to the cold bath, remaining immersed a longer or shorter time, according as the circumstances of the case might seem to require;

for, as an effect is the object, it is necessary that there be some evidence that the effect is attained, at least put into the proper train for attainment, before the process be discontinued.—It is attained with more or less facility, according to the state of the previous condition.

When the process of bathing is finished, the patient is carried to bed. There is no occasion for being scrupulously nice in drying the body. It is even better, where there is much superficial heat, that it be not dried at all. In the opposite circumstances, as it is always grateful, so it is generally useful, to rub the body for some time, with hot flannel cloths.—Such practice seems to encourage the feeble beginnings of a salutary movement.

GESTATION, OR TRAVELLING.—The remedies mentioned above, viz. bleeding, emetics, warm and cold bathing, when applied in the proper circumstances and managed in the proper manner, go a great way in the cure of the common class of febrile diseases; but where the proper time of application has been lost, or where the proper circumstances for the application have not been duly considered, the salutary effect is not attained:—the disease then sometimes gets beyond the reach of the power of these powerful remedies. In such case we must seek for other means, and it fortunately happens, that there are still some in store, capable of carrying the point some degrees higher, than those which have been already noticed. In the list of
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such means, few people, it is presumed, will expect to find mention of the term gestation, that is, the act of transporting sick persons in the open air, in carts, carriages, or other conveyances, exposed to all the chances of weather. The means may seem strange ;—the fact of the benefit is true. It is proved incontestably, in a multitude of instances, that the act of travelling in the open air, is a powerful remedy in some of the least manageable cases of fever. It is not, indeed, found in the catalogue of remedies, mentioned by medical writers. The author's attention was first directed to it, by what occurred in his own person.—In the year 1778, while attached to the late 71st regiment, he suffered a very severe attack of fever at Kingsbridge, in New-York island. The fever continued for seven days, with little intermission. It had just ceased, when he was put into a common conveyance to be carried to New-York. The distance from the place of encampment was fourteen miles ; and by the time he arrived at the end of his journey, he was so much invigorated, as to be capable of walking a mile, with less fatigue than he felt in walking twenty paces, at the time he left Kingsbridge. This fact did not strike at that time with its just impression ; but, in the following year, he was again attacked at Ebenezer, in the province of Georgia, in the month of June, with a fever of unusual violence ; for all the fevers of that place were violent,—and they were dangerous at that season. It was, in short, the
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causus of the Greek physicians. It had scarcely any remission, though fundamentally of the remitting character; the anxiety was insupportable; the internal heat was great; the pulsation of the descending aorta shook all the neighbouring parts,—the pulsation of the artery at the wrist was moderate, perhaps weak; the tongue was parched, with an abhorrence of drink,—a singular combination :—the sensation of burning was tormenting, without any actual increase of heat on the surface, as measured by a thermometer, or as striking the sensation of others.—It was agony to touch any thing of woollen or cotton; there was a desire of what was moist and cool;—but nothing cool was to be found, for the thermometer, in the best shaded part of the house, seldom sunk, during the day, under 96. With all this distress, there was a total want of sleep, a constant desire to change place and posture. In a disease of this kind, which had now lasted seven days, the author was put into an open vehicle to be carried to Savannah,—a distance of twenty-five miles. The distress and suffering, at the time of departure, were as great as a human body could well bear; at the distance of two miles, they had greatly diminished, and before the end of the journey, they were entirely gone. It rained heavily while he was on the road; he had no covering from the rain, and of course got completely drenched; but he found himself able to sit up, to walk without help, on his arrival at Savannah;—he
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even had some desire to eat, though, for the seven days preceding, he had looked at food with abhorrence, and even loathed drink, with a tongue stiff and parched, even scorched to insensibility—from internal heat.

The advantage in these two instances was signal; but as the fever had actually ceased in the one, and as it had arrived at a critical period in the other, they may not perhaps be considered as perfectly decisive of the case. An effect, which happened the following year, when the 71st regiment removed from the Cheraws, previous to the action at Camden on the 16th of August, is directly in point in all its parts;—it may be considered as conclusive evidence of the fact. The position occupied by the 71st regiment at the Cheraws, on the river Pedie, was singularly unhealthy. The disease was of a character similar with that which prevailed at Ebenezer,—of the remitting class, but with remissions scarcely perceptible. Two-thirds of the regiment were sick; and of course there were here persons in all stages of disease. The enemy advanced in force, and the 71st was ordered to retire, for it was the advance of the army. Some part of the sick were embarked in boats; in order to be conveyed to George-town by water; the country not affording waggons sufficient to carry the whole of those who were unable to march. There were, however, about one hundred and twenty persons belonging to the first battalion, who were transported in open waggons, in the manner

manner stated. They were exposed to dews by night, to a scorching sun by day, and to occasional showers of rain. At the end of the third day they arrived at Lynch's Creek, about half way between the Cheraws and Cambden. The regiment was ordered to halt, and to occupy a position. The sick, during the march, had little opportunity of taking medicine; yet no one had died; some had got entirely well; and, in others, indeed in all, where the disease had not yet ceased, the form was changed to that of distinct intermittent. Instances similar, though not in the same extent, occurred on different occasions during the following campaigns in America; they even occurred in the late war on the continent, in the campaign of the year 1794, and beginning of the year 1795. It was here noticed by many, who had no previous knowledge of the fact, that persons, ill of fevers, recovered more rapidly under actual transport from one station to another, than when they remained stationary in hospitals; though, in the one case, they had probably little help from medicine, or little extra refreshment; and, in the other, were abundantly supplied with the comforts of nourishment, and with necessary drugs. Similar benefits with those observed on the continent, in the years 1794 and 1795, have occurred, it is presumed, in every other country where necessity or chance have occasioned a similar trial. In several instances, the act of travelling seemed decidedly to arrest the progress of death; and, in numberless instances,

instances, it accelerated recovery, beyond all calculation of recovery from the effect of common means. The credit of the remedy does not rest upon the result of a few solitary instances. It has been tried, or rather witnessed in multitudes; and, under similar circumstances, uniformly with similar effects; the effects therefore are undoubted, and their value is capable of being precisely ascertained.

It is evident from the facts here mentioned, instances similar to which are numerous and authentic, that a salutary change of an extraordinary nature is operated upon persons ill of fever by the action of pure air, particularly, when combined with the act of motion through the air, in carts, carriages, or other conveyances. The change is singular; and the circumstances, in which these singular changes are most conspicuous, require to be explained and described, with as much precision as possible; for, though the means be powerful, they are not useful indiscriminately in every fever, nor in every circumstance of the same fever. It sometimes happens, and it is vulgarly known, that slight febrile indispositions are turned off in the beginning, by exercises in the open air, more severe than usual or longer continued; but though this fact has been often observed, yet it must, at the same time, be remembered, that the commencement of fever is not usually the period in which the great benefits of this remedy are to be expected. The
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period, at which the salutary effect is most certain, is the point of time when the circle of the diseased motions is completed, or nearly completed; that is, when a product of diseased action has been effected, or an office performed, in consequence of which the machine becomes again sensible to the impressions of ordinary causes. This, according to circumstances, may happen after the third day; but it rarely happens, till after the fifth or seventh. A circle of febrile movement is generally completed at these periods. Hence the stimulation of pure air, or rather a succession and forcible impression of pure air, in consequence of progression, solicits the moving principle of the animal machine to resume its usual action, or, the rhythm of movement in which health consists. Health is thus established: But if this cause,—the common stimulant of life, be not applied at this period with some degree of force, a new circle of diseased action is probably put in motion,—runs over another course, produces another product, similar to the former; or it varies its product, according to the variety of circumstances by which it may be acted upon. Hence it is in fact, as it might be expected to be in reason, that the period for the effectual employment of this remedy, is more peculiarly that point of time when the diseased movement has completed, the circle of its course; or that condition under which the diseased movements have been arrested artificially, by the effects of bleeding, of emetics, purgatives, or other means.

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The one is a natural period, that is, the termination of a diseased movement, completing its circle, or perfecting its product; the other an artificial one,—a termination by force, the effect of treatment. In both, the sensibility to impression is restored, and the remedy equally produces its effect. In plethoric torpor, the act of travelling produces no salutary change; and in plethoric fever, with local inflammation, it is not even certain that it is always safe: on the contrary, great benefit results from it, in the opposite circumstances. It is safe in the late periods of fever, and few cases occur, where apparent weakness forbids its use, if it be conducted with caution: nay many cases have happened in the author's experience, where the functions of life, from a state of apparent stagnation, have been speedily and effectually restored to alacrity, by the use of this means alone.

It has just been remarked, that the act of transporting persons in the early stage of fever, with signs of plethora, is not beneficial; it is not useful, or even safe, where there exist, with such fever, signs of inflammation in the internal organs,—the head, heart, lungs, liver, or intestines. The same means, on the contrary, are followed by the most signal and decided relief, where there are signs of congestion in secreting organs; as in the bilious or ardent fever, attended with great anxiety, with burning heat, restlessness, want of sleep; in short, with all the aggravated symptoms usual in the bilious autumnal fever of hot countries.

countries. It is in this form of disease, that its good effects were so conspicuous in the campaigns in the southern provinces of America: the rule holds equally in tropical climates. It is the last anchor of hope, in the late stages of the concentrated endemic, to which Europeans are liable soon after their arrival in the West Indies,—a disease, which may be cut short in the commencement, with almost a positive certainty; but which, when left to itself, very generally tends to destruction, degenerating into what is called yellow fever, with black vomiting, and all its formidable train of symptoms. The ostensible fever, in this case, generally subsides on or before the third day; and the remaining part of the course is rapid,—for the most part, finished within the fifth. It is believed, that a proper management of the remedy now under consideration, would be productive of benefit, even in these late periods. It is admitted, that the experience on this point is not so ample as it ought to have been; for, though the propriety of the measure was seen, the means of execution were not always under command. It has thus scarcely ever been acted upon generally, and systematically: but from the accidents, which chance has presented, it appears to be capable of going farther than any other remedy, with which we are acquainted. In the case under view, the superficial heat is supposed to have subsided; the skin is dry, thick, and impervious; the pulse nearly at a natural standard; there are no local pains; but

but there is much anxiety at stomach, an unceasing desire of change of posture, with a singular torpor and inability, often confounded with, but radically distinct from weakness, mobility, and fainting. To these is generally added nausea,—sometimes vomiting of a ropy and flakey fluid. In this situation of things, (certainly a hopeless one, for the susceptibility of impression is nearly lost,) the act of moving the body rapidly, in an open cart, or carriage, through woods, on the green turf; or in defect of woods, shaded, if in the day time, with boughs of trees, exposed, if in the night time, to all the freshness of the air, and all the dews of heaven, has appeared to do what no other means were capable of doing. The effect of this practice will be rendered more certain by previously taking away some blood, in relief of the congestion which has already taken place in the venous system; by sprinkling the body occasionally with the coldest water that can be procured; by moving at a brisk pace—even over unequal ground; by occasionally repeating the sprinkling with water; by opening the vein a second, or even third time: in short, by adopting and persisting in such a train of processes, as not only originate a new movement, but as confirm it when begun. It is vain to expect that this can be effected in a short time, that is, in less than six or eight hours: hence it happens, as might be expected, that this remedy, when ordered by design, often fails; be-

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cause the operation is not continued a sufficient length of time: when adopted from necessity, it often succeeds; for the operation is continued till the effect is confirmed.

In fevers of the contagious class, the advantages of such movement are evident,—even at an early period; and they are easily understood. Plethora rarely exists in this case. The action of the disease is principally manifested in the surface; and it is on the surface that the remedy acts by direct effect. There is thus an existing susceptibility, and an application direct to the susceptible part. The benefits of this remedy were strongly exemplified in the retreat through Holland, in the year 1795. Where due attention was bestowed in disposing the sick in the waggons, the travelling was agreeable during its continuance,—even in cold and rainy weather; the good effect was strongly manifested at the end of the journey;—even the most enfeebled acquired an evident accession of strength.

It has been noticed already, that the benefits of travelling are not very conspicuous in the early stage of fever, where the cause of disease has a strong and vigorous action. Where that action is arrested by forcible means, as bleeding, emetics, &c. or when it has naturally completed, or nearly completed its circle, so that susceptibility of impression is restored, the effect is signal. This is witnessed in a striking manner, where the diseased action has **actually** ceased, but where
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the recommencement of healthy movement is slow, and the healthy action imperfect. In such case, more benefit is visibly derived, and more strength visibly gained, by travelling for six hours in an open carriage, exposed to all the chances of weather, than by the best treatment that can be devised in a crowded hospital, for a space of six days. The greater the contrast between the condition of the apartments of the sick, and the conditions of the open air, the greater is the effect upon the health of the subject of the experiment. The good effects here alluded to are conspicuous; but they are much increased by bathing, and by entire change of clothing before and after the journey. It may also be observed in this place, that the act of travelling does not so instantaneously produce effect, as the application of cold water to the surface of the body; but it produces effect with no less certainty; and the effect produced is more permanent, for it is confirmed by a longer application of means. It is thus, that the advantages of the remedy are more remarkable in journeys of necessity, in open carts or waggons, exposed to wind and rain, to heat and cold, than in airings for an hour or two in carriages, where the subject is defended from the weather, or but partially touched by the salutary influence of the air. Airings are, in fact, but feeble substitutes for the travelling recommended in this place; for the continuance of the motion ought to be for six or eight hours at least; and all the circumstances connected with

it ought to be so arranged, that an impression may be made, that a new movement be originated, and that it be confirmed in its course by a due continuance of the application of the necessary causes. The action of pure air, on the human body, is the natural stimulant of life; the action of pure air, combined with exercise in the open air, is an obvious cause of health and vigour.

The remedy, so strongly recommended in this place, is not yet numbered among the regular means of physicians, in the cure of fevers. The benefits, so evidently derived from it, decree that it should; and the rules, which have been given for its management, will, it is presumed, be sufficient to furnish information, at what times it may be resorted to with safety, and with probability of good effect. If it does not do all the good that might be expected from it; the most scrupulous may be assured, that it has the smallest chance, of any other medical means, of doing harm; for it is more allied, than any other, with causes which keep life in motion.

The remedies, which have been noticed in the preceding pages, are of a powerful operation; and, if well managed, they are usually effective of their purpose, viz. the subversion of diseased or irregular movement,—the renewal of that which is just and natural. They are not, however, very commonly employed according to that idea. The action of bleeding, of warm and cold bathing, or the effects of the rapid successions of pure air upon animal bodies, in certain
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states of languor and disease, have not, perhaps, as yet been estimated upon the true principle. The consequences therefore are uncertain,—useful, hurtful, or of no effect. The action, arising in an animal body from the application of the causes of fever, is a foreign or unnatural action; physicians have consequently been induced to seek a remedy, in remote or foreign means. As the principle, by which the cause of fever acts, is not precisely ascertained; conjectures are formed, remedies are suggested by fancy, and employed with a confidence, as if their virtues were established. The means are numerous, and the application of them requires to be varied, modified, and changed, according to the conditions of the case. But as disease, particularly febrile disease, consists in error of movement; and as the ultimate object of all medical means, is to rectify the existing error; so it is important to accomplish the purpose by the simplest possible process. Experience teaches us, that this may be effected, in most cases, by the proper management of a few remedies. It is sufficiently clear, that, the higher the point, at which the excitability of an animal body stands, the more readily does its action explode in a circle of perverted movement, by the application of undue stimulus. The perversion is, here, the expression of an action of excess, excited by a powerful or stimulating cause, acting on the animal machine, in a state of ticklish balance. Perversion is the consequence; for there is an

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excess of excitable power not appropriated, or not expended in natural action. In this manner, those who are strong and full of life, are liable to acute diseases ; and to violent ones, from causes of strong or foreign stimulation.—The period, most favourable to such explosion of perverted movement, is that, where the impression of a natural action happens to be feeble. In a similar manner in one respect, but different in another, those, who are weak and delicate, under no strong impression of natural action, are readily sensible of the impression of a stimulating cause. A movement is excited, but it does not fly off into a perverted circle, as in the instance alluded to, where there is excess of excitable power ; for, under the point of just measure, moderate stimulation solicits only a natural and healthy action. Thus, causes, stimulative of movement in a less excitable state of the system, rarely produce an excitement, which exceeds the limit of health. This observation is the physician's guide. The animal machine is deranged by the action of foreign causes ; it is the physician's business to rectify that derangement. His studies must, therefore, be directed to discover its laws, to observe its deviations ; as his labours are employed in doing that which is most effective in correcting them. Where there exists a strong action of perverted movement, weak causes make no impression ; the disease proceeds, in its course, to a destined termination. In order, therefore, to render the subject susceptible of the impression of causes which solicit the salutary action,

tion, and which maintain the effective movements of health, when begun, it is often necessary, previously, to arrest the diseased process in its course by forcible means, in the manner which has been shewn. The way is then prepared for the action of others; particularly for the action of the class called tonic; among which Peruvian bark occupies an eminent place.

PERUVIAN BARK. The Peruvian bark is a remedy of great and known value in the cure of diseases. It is particularly distinguished as preventive of the recurrences of diseased movement, in the different classes of periodic fevers. The knowledge of the quality, by which it accomplishes this purpose, lies, like other things of Nature, out of our reach; but we are enabled to notice, and in some degree to appreciate its effects. It seems to impart strength and vigour to the moving powers,—firmness and constancy in action, in some manner similar to washing the body with cold water,—more expressly to exercise in the open air. It diminishes, or absorbs in a similar, though inexplicable manner, a seeming excess of sensibility, a quality which is acted upon by slight causes, but which does not possess a portion of force, or condition of organization capable of producing firm and steady action. It is thus useful in irritable and morbidly sensible subjects; but its best known and most decided quality lies, in preventing the recurrence of the paroxysms of intermitting fevers, and diseases of the periodic class. But though powerful, it is

not sovereign, even in these cases; unless a precise condition of body be previously ensured. That condition is, here, as in other cases, susceptibility of impression. If susceptibility of impression exists in the just degree, (and its existence is not incompatible with the existence of periodic fever,) the remedy has its effect without preparation. If it does not exist, it must be given artificially; and it is an object of care, that it be given completely. In habits, naturally of a firm, tense, and rigid texture; in conditions of disease connected with plethora, torpor, constriction of the skin and suspended secretions; the benefits of Peruvian bark are not certain, even in the genuinely periodic class. Such are the counteracting conditions, and if they exist in the circumstances of the disease, the first object goes to their removal by suitable means,—by bleeding, by emetics, by purgatives, perhaps by antimonials, and even by blisters. When that has been effected, and when susceptibility has been restored, the benefits are conspicuous. In habits on the contrary, originally distinguished by a delicate fibre; in subjects disposed to faint, and liable to irregular movements of the spasmodic kind; its good effects are eminent without the preparation alluded to.

It may not be improper to notice in this place, that the intermitting or remitting fever of the southern provinces of America, in the American war, yielded very readily to the powers of the Peruvian bark. The condition of body, connected

ned with its successful operation; whether owing to climate, or to what other cause, was generally present in these campaigns. The skin was soft; the fibre susceptible; the paroxysms terminated by copious perspirations, or by copious evacuations of bile. In St. Domingo, the case was otherwise. There, the intensity of cause and circumstances of subject seemed to conspire, for the most part, to produce a concentrated form of disease, in which remissions were obscure,—in fact scarcely perceptible. This was the usual condition; and when this was the case, the bark was of no value: yet, where this condition was removed by treatment, particularly by copious bleeding, the effect was similar as in the campaigns in the southern provinces of North America; for wherever the same condition exists, whether existing naturally, or given artificially, the same effect follows the operation of the same remedy.

The Peruvian bark is the most salutary, and the most generally useful of the tonic class of remedies. It is principally celebrated in suppressing the recurrence of paroxysms of diseases of irregular movement, not radically connected with the system of the great circulation,—with plethoric torpor, or with local congestions in important organs. It is considered as specific, in certain circumstances of disease; but, in order to obtain that praise, it must be given in a state of body susceptible of impression,—and below the point of full health. It also must be given
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in large quantity, and its doses must be often repeated ; for its effect is only temporary. For example, two drachms of the bark in common use, repeated at the interval of two hours, during remissions, is the smallest quantity that can be depended upon, as affecting the course of disease, where the cause is strong and the action violent. It is however observed, that, the lower in point of flesh and blood, and the greater the sensibility of the fibre, the more effectual, for the most part, is the operation of this remedy. In this manner, its effects are more certain after evacuations, after abstinence, and after some continuance of disease, than in the opposite circumstances ; unless where organic congestions have taken place, or where the sensibility to impression has been impaired by some particular form of action.

WINE and OPIUM. Cold bathing, and exercise in the open air, are employed to excite and to confirm the movements of health ; Peruvian bark, is more particularly employed to prevent the periodical recurrence of diseased action in periodic fevers, and in other diseases of periodic irritation. Besides these, a class of remedies,—cordial and anodyne of pain, (of which wine and opium are the principal,) occupies at present a conspicuous place among medical means, in the cure of acute diseases. There occur, indeed, many cases, where the aid of these remedies is of the most signal use ; but it is only of late years, that their virtues have been so highly extolled, as in
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a manner to supersede the employment of others. Fevers are, now, attempted to be cured by wine and opium, as radical means of cure; formerly wine and opium were only employed occasionally, — as accessories. The author's experience on this subject does not go so far as that of many; for, though wine and opium are often prescribed by him, and actually given to great extent, they are not considered as radical means of cure, even in contagious fever; consequently, they are seldom employed in early periods. The point of time, at which the benefits of wine are most evident, is the period when the diseased movement has completed, or nearly completed its circle; when susceptibility of impression is restored, but when the healthy movement is languid, scarcely supporting itself without a foreign aid. In such case, wine is given freely, that is to say, in such quantity as serves to quicken action. It is continued, in such quantity, as to support the quickened action to which it has given origin. It thus comes in, in order of time, at the period when washing with cold water, travelling in open air, or Peruvian bark are so useful. It is a remedy of the same class; and it is one, against which, the same prejudices or the same dislikes do not prevail. The quantity of the dose is to be measured by effect, — by effective action in the circulating system, by a glow of warmth and comfort in sensation. It seems, by its action, to absorb excess of sensibility: — animal movement consequently becomes uniform
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and firm,—and courage of mind is increased. When this point of impression is attained, it must be supported;—all beyond is error. The management of the remedy, therefore, requires a very correct observation; for it is a nice matter to diminish excess of sensibility in the proper degree, and in the proper degree only.

Opium has a strong analogy with wine, in its manner of acting. It absorbs excess of sensibility;—in a more peculiar manner, the sensibility connected with irregular movement, and with pain. It spreads a calm and pleasing sensation over animal action, and engrossing, so to speak, the harassing cares,—grief, despondence and fear, it removes the barriers of sleep. The quantity of the dose, must be regulated by the effect. Pain bears a large dose; but there is danger, where the powers of life are not innately strong, that a dose, exceeding the just quantity, may lay sensibility at rest for ever. It is therefore better, as being safer, even more certain, to remove previously, as far as possible, the irritations of pain by other means, leaving as little as possible to be effected by opium. In this view, previous bleeding, fomentations, and bathing are of great value.

Wine and opium have strong resemblance in their manner of acting, in several respects; yet opium is frequently useful at an earlier period of fever than wine. Wine is chiefly useful at the termination of a period or circle of movement; or where motions are languid and wavering.

ing. Opium more directly suppresses irritations. It thus sometimes prevents ;—it generally renders the paroxysms of fever, not only shorter, but milder. It is not pretended to explain the nature of the quality by which it does so. It is only known, that its effects are conspicuous in calming irregular motions, connected with sensation ; they are less conspicuous in changing or allaying tumults in the circulating system. In fevers, with signs of plethora, suspended secretions, a dry and constricted surface of body, opium is not useful. It has, moreover, one general bad effect, that, given in doubtful diseases, it often masks the real expression ; by which means, the physician is not unfrequently deceived both in the nature of the malady, and in its event.

Wine and opium, which were only occasionally resorted to in former times, have of late years risen into great importance in the cure of fevers. In military hospitals particularly, they have become the order of the day. A sick soldier, in general hospitals, is taught by custom to consider a ration of wine, as a part of his allowance. Opium pills are also common among the prescriptions of hospital practice, so much so, that, when the pill is omitted, the patient often imagines that he is neglected by the attendant. Opium, indeed, is a remedy, which a sick soldier frequently calls for. It seems to throw a veil of pleasing reverie over the mind, covering up, for a time, the sensations of bodily pain and mental anxiety.

anxiety. This practice, which has so much prevailed of late years, whether right or wrong, originates in theory ;—in an opinion, that debility is the cause of fever, and that wine and opium are stimulating powers, peculiarly appropriated to remove the debilitating cause. The means are thus supposed to be means in all stages, and in all conditions ; for the cause always exists,—in the beginning, in the middle, and at the end. It might be supposed, that their just value is now determined by experience. Wine and opium were tried to the full extent in the late war ; for the command of the means was generally in the hands of persons, who believed in the truth of the doctrine.—If any doubt of the effect exists, a reference to the returns of hospitals will furnish direct evidence on the subject.

But though bark, wine, and opium, do not possess virtues to the extent supposed by some, they are still remedies of great value, when properly employed. They are the great aids of the higher classes of society, who suffer from excesses of sensibility of mind and body. Bark has effects upon an enfeebled or morbidly sensible frame, in some degree similar with exercise in open air. Wine comforts the heart, and absorbs the cares of life ; opium represses irregular movement, whether expressed by undue excitement or depression. As the action of these remedies, particularly the action of opium produces a salutary effect,—suspensive of pain or absorbent of despondence ; in some respects different expressions
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of the action of the same cause, it must be supposed to produce this effect, in consequence of an action peculiar to itself, impressed upon the susceptible and sentient principle; for in proportion to the degree of susceptibility, ordinarily, is the effect. In disorders, affecting principally the organs of circulation and secretion, the benefit is not remarkable. In fevers of the violent and acute kind, or in the acute stage; unless of the intermitting class, opium, wine, and bark are of no value,—not always safe. They are thus perhaps less useful remedies, in the diseases of soldiers, than in the diseases of some other classes of mankind.

BLISTERS. Blisters are very commonly employed in the cure of fevers. They are one of those remedies, which physicians frequently prescribe, when they are alarmed for the safety of a patient, or when they are at a loss what to do. They are often useful; but, as they are employed in various cases or conditions of disease, it does not appear that the principle which directs their application is generally agreed upon. It therefore will not be deemed superfluous, to attempt to define that point, by a more precise rule. Blisters act evidently upon the sentient part of the machine; and their benefits are most evident in cases of irregular movement, connected with excesses of mobility and transient irritation. In fevers, accompanied with signs of fulness, with suspension of secretions, torpor, a dry and constricted skin; even in fevers, accompanied with

with a damp, a greasy, or with a withered and constricted surface of body,—without marks of sensibility and transient irritation, the value of blisters is not conspicuous. In the one case, bleeding, in large quantity, is a previous remedy; in the other, emetics, warm and cold bathing, and exercise in the open air, are necessary to prepare the condition; for in both cases, animation or susceptibility must be given, whether it is to be effected by taking away, by adding, or by changing. When that is done, blisters are an useful means, in keeping the diseased movement in a regular channel; thereby conducting matters to a safe issue. They are thus rarely useful, till the course has been in some degree arrested, or changed by previous evacuation; after this, their value is very conspicuous, for they keep matters in an equal train of movement. In the class of contagious fevers, the power of blisters is most remarkable. The action of the cause, in its febrile irritation, is principally manifested on the surface of the body, that is, in a lighter circle of movement. After the exhibition of an emetic of severe operation, the application of large blisters to the head, neck, or between the shoulders, often absolutely cuts short the course abruptly. Blisters are frequently employed in affections of the chest,—inflammations of the lungs and pleura; but, they are in reality of no value, till the condition of the disease has been changed, by bleeding, &c. After that is effected,
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a large blister to the chest is highly useful in preventing recurrence, probably, by exciting an external irritation stronger than that within. On the contrary, when matters tend decidedly to abscess, they are of no use;—when a secretion takes place, which promises to conduct to a safe termination, they are evidently hurtful. Such is the case in pneumonic affections, with free and copious expectoration,—even with beginning expectoration. They moreover appear to be hurtful in malignant sore throat, with gangrenous ulceration. In both these cases, they are commonly employed by practitioners; but if the author's observation be correct, the symptoms are generally aggravated in consequence of such application; for, if any impression be actually made upon the system by the use of such means at this time, it is usually unfavourable,—noted by delirium or an expression of general tumult. But though blisters seem to be hurtful in the instances stated; probably, by disturbing the progress of an operation in its course to a determined issue; they, on the contrary, are useful, when judiciously applied, in preventing recurrence, or in changing the fatal form of the paroxysms of malignant intermittent or remittent fevers. This effect is often manifested in the malignant periodic fevers of hot climates; the paroxysms of which are disposed to recur on the fifth day, more frequently than on others, with alarming symptoms,—stupor, coma, convulsions, &c. The disposition to such recurrence

is known, to persons of experience, by the aspect of the disease. The disposition being known, the event is foreseen ; when foreseen, it may often be prevented by opportune application. With this view, the effect of blisters to the head, neck, and other parts, so timed in application, as to be in full activity of action at the recurrence of the formidable paroxysm, often averts the threatening evil. This requires foresight in the physician, and resolution in the patient. In such malignant diseases, the type often anticipates ; the calculation must, therefore, be correctly made to hit the proper time ; and thereby insure the proper effect.

MERCURY. In considering the use and application of means, employed in the cure of fever ; mercury, which, in one form or other, has been brought forward within these few years to an eminent degree of notice, as a remedy in relief of the most formidable of the acute diseases, deserves to be noticed in this place. Mercury is known to possess the power of changing the existing action of the animal machine, even in the most intimate foundations of its structure, more completely, and with less risk to life, than any other means with which we are acquainted. Its action is discoverable in the minutest fibres of the body. It penetrates to the hardest and most solid parts. As its action affects the structure of parts so visibly, it cannot be otherwise than a powerful agent. It has been long celebrated for virtues, in removing diseases
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of congestion ; a purpose, which it effects in a manner so conspicuous, that the impeded movements of life are renewed,—the machine often in reality appearing to be new cast in consequence of its operation. In this view, it is employed as a remedy in diseases, where structure is permanently deranged. It is further employed in the cure of fever, in its acutest stage ; and, however strange the doctrine may be thought to be, it is notwithstanding true, that it frequently has an effect in influencing termination. The action of mercury, when completely established, extends to every fibre of the body. In such case, a new action necessarily arises ; a new disease is created, and the old one probably ceases ; for though it is possible, and actually does happen sometimes, that an idiopathic fever exists at the same time with a mercurial action ; yet the force of the fever is generally broken in such case, though the course of it be not altogether stopped. The action of mercury changes the existing movement ; and the original disease ceases : But the action of mercury is itself a diseased action ; and the cure, here effected, can only be considered as the change of one disease for another ;—of one, indeed, the course of which is often fatal, for one, which, though frequently troublesome and distressing in its consequences, is rarely dangerous to life. It thus saves life ; but it is only secondarily—not directly, effective of health. Hence, it must be admitted, that, if the final purpose be in reality attained, it is

not attained by the direct or shortest road. It will therefore be allowed in such case, that mercury is only a remedy of necessity; that is, a remedy to be resorted to, when no one is known capable of a directly salutary effect. But, if actually admitted among the remedies of fever, and employed on the grounds here stated, it is an object of some consequence to define the conditions, under which it can be usefully employed; for it is proved in experience, that it sometimes does nothing, and sometimes that it does no good.

It is evident that mercury, like other remedies, only stops the course of fever by acting as a stimulant, that is, by producing an action stronger than the existing one. The greater the facility with which impression is made, the greater is the certainty of the effect. There exists, among mankind, a great constitutional difference of facility or difficulty in assuming the mercurial action;—to some it scarcely can be given. There is also a great difference in this respect, according to the states of the disease. In some subjects, and in some maladies, six or eight grains of calomel, two or three drachms of mercurial ointment rubbed upon the skin, give rise to a violent salivation; in others, fifteen or sixteen hundred grains of calomel, or several ounces of ointment produce no effect. It is evident therefore that mercury is a remedy of uncertain operation; and it cannot be held warrantable to trust the life of man

to the uncertain or chance operation of any one remedy, where those of certain operation are not yet exhausted. If the disposition in the habit, which resists the action of mercury, be constitutional, we know little how to remove it; if accidental, depending upon the action of the existing disease, it may, for the most part, be put aside; the benefits of the mercurial action, whatever they are, will then be fully experienced. In fevers, with signs of fulness, suspension of secretions, a dry and torpid skin, the mercurial action is not easily or soon established. It is thus, that, in the most concentrated forms of the fevers of hot climates, mercury has sometimes been given to an enormous extent, without any action taking place. Even fifteen or sixteen hundred grains of calomel have scarcely brought on a salivation; and till a salivation be brought on and established, there is no safety;—no proof or indication that the diseased action of fatal tendency is controlled. It is stated, that life is generally safe, when salivation is established; it is not stated so clearly how many die, under the use of the remedy, without that end being attained. It might be said in the same manner, and with the same truth, that, when an universal and warm perspiration marks the operation of James's powder, life is also generally safe. The salivation and perspiration equally note a solution of disease. But in the question under consideration at present, the effect of the salivation is not that which

is to be calculated upon; the action which produces that effect must first be ensured. A preliminary to this consists in susceptibility of impression,—a condition given more certainly by bleeding than by any other means. When susceptibility is restored, connected with an effective action of the absorbent system, mercury has then its usual action; but when that condition is restored, healthy movement may be re-established by a more direct process than that of a mercurial salivation. Thus, though mercury is found to be capable of curing a recent fever, it is not yet proved that it is the best and speediest means of effecting that purpose.

The author's experience of mercury, in the cure of acute diseases, rather in the cure of general fever, has not been very extensive; but he has seen a sufficient number of instances, under the management of others, to fix his opinion of its mode of acting, and of its probable use. It is observed, that, in fevers of the intermitting or remitting class, the mercurial action is for the most part easily established. The course of the disease is then frequently broken, its danger diminished, or the symptoms are brought to greater regularity and better order. In fevers of the concentrated form, usually called yellow fever in the West-Indies, with signs of plethora, torpor, suspension of secretions and suspended power of the absorbent system, it rarely has any action. The force of the diseased
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action in such case is strong; the stimulation of mercury is not felt. But if the malady, by chance, terminate favourably, a mercurial action frequently takes place at the distance of two or three days,—after the circle of diseased movement has evidently completed its course.—In continued fevers of the more concentrated contagious class, where the subject is confined in close and ill-ventilated places, as in the 'tween-decks of a transport ship, the gums frequently become red, spongy, and almost rotten; no salivation takes place; the disease goes on to its usual period of termination,—sometimes fatal, sometimes favourable. If salivation actually does take place, it is rarely till the patient is evidently in a certain stage of recovery.

But though the value of mercury, as a remedy in the cure of general fever, does not deserve to be placed very high; yet in fevers, accompanied with congestions, particularly with congestions in the abdominal viscera, it is of the first importance. It is almost, indeed, indispensable in such cases. It repairs mischiefs, which no other means, with which we are acquainted, are capable of touching. But though useful in this view; yet, if it be admitted to be a general remedy, where it only is a conditional one, our purposes will often be defeated,—the consequences will even be dangerous. Implicit faith, in the benefits of mercury, originates an evil, somewhat similar to what arises from faith in the virtues of wine and opium. Debility is there supposed to be the

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cause of fever; wine and opium, specific stimulants of vigour and action. In this view the path of practice is easily seen; for it does not leave the tract of direct stimulation. In the other case, as relative to mercury, whatever may be opinion concerning the cause of the disease, salivation is the cure; and salivation, of course, is the object to be accomplished. The doctrine in either case opens a compendious road to the secrets of the medical art; for, if fever consist in debility, and if wine and opium be the best stimulants of action, the accomplishment of the effect comprehends no mystery. It scarcely requires the skill of a grey-haired physician to drench a patient with wine, till he shews signs of intoxication; or to augment his dose of opium, till he falls into stupor or deep sleep; for the effect in this case regulates the measure. In the other instance, it calls for no uncommon skill to give mercury internally, or to apply it externally, till the signs of salivation appear.—If these new practices be founded in principles of truth; the labour of observing, and learning by observation, will be materially abridged.

RELAPSE. The circle of febrile action has a varied, but, according to its conditions, a determined period of duration. When fever has attained the natural period of termination; or, when its course has been cut short by artificial means, the healthy movement resumes its place; but healthy movement, though thus restored, is liable, for some time, to be interrupted

interrupted by slight causes. It is observed, and indeed commonly known, that certain forms of fever manifest a strong disposition to recur at certain periods after termination; either in the original form, or with a modified change of symptoms. This is called relapse. To guard against such event is an important consideration in all cases; but it is particularly important in armies; for to relapse is to be attributed, for the most part, the great mortality of military hospitals. A few observations on this subject may therefore, perhaps, be thought not to be superfluous.

It is a truth, sufficiently well established, that the causes of acute disease do not ordinarily produce action, or rather general febrile irritation, immediately upon application to the subject. A space of time intervenes, not the same in every case, but always such as is sufficient to shew, that preparation of some kind or other is necessary, previous to the explosion of a regular febrile action. The period varies; but the fourteenth day, after exposure to the cause, or rather after the cause has made impression, seems to be the most common. This is inferred from a variety of instances, where persons, —generally soldiers, have occupied unhealthy positions, or been lodged in infected quarters; and where the manifestation of regular fever has been rarely discovered before the fourteenth day; in many later; for though the cause might be present with the subject,
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it is not certain at what period it had actually made its impression upon the susceptible organ. The action of fever is thus rarely manifest before the fourteenth day, after exposure to the cause. It rarely exceeds two months; yet there are instances, where it has been dormant for half a year. This is concluded from instances of persons, who, after visiting aguish countries in autumn, have returned to their homes in winter, and suffered attacks of ague, in the ensuing spring, in a country where such malady was not known. There are, in like manner, many instances on record, where the cause of contagious fever has been long dormant in the body; and where it would not, perhaps, have manifested itself at all, but from accident. There are certain revolutions constantly going on in animal bodies; and certain points of the machine, particularly impressed by foreign causes, seem to be touched, in these revolutionary movements, in such manner that the action alluded to explodes. The periods of revolution are diurnal, tertian, septenary, and re-duplications of septenary. The period, at which the action of causes manifests itself, is different. The action of cold is sensibly felt; and it has the shortest period, perhaps, of any; yet the febrile expression of its action is not instantaneous. The space of twelve hours, if not twenty-four, generally intervenes, between the distinct impression of the cause, and the subsequent manifestation of a febrile form of action. Hence there are grounds to believe, that it is only when
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the machine, in the course of its revolution, touches a certain unknown point of impression, that the circle of diseased movement explodes in action. It may thus, perhaps, be understood, by what rule it happens, that certain hours, or certain parts of the day, are connected with the explosion of febrile action more than others. There is evidently a point of explosive revolution in the animal machine, connected with time; but not connected with it by a fixed and invariable law, as measured by the artificial hour. It advances or retires, even in the same subject, in different periods of the disease; but it generally advances or retires according to a rule of proportion.

When the cause of disease has struck a key of movement in the animal machine, susceptible of derangement; a perverted action arises, and proceeds, according to its own peculiar rule, to a defined termination. The motion ceases finally in a given time,—sometimes perfectly, so as not to return again, as in fevers of the continued kind, arising from sensible causes, as cold, &c. accompanied with what is called inflammatory diathesis, and terminating by distinct crisis; or it ceases after a given duration, but recurs after a certain interval, as in fevers of the generally contagious and periodic class; the recurrences of which are most usual upon the fourteenth and twentieth day, connected, in some countries, with the periods of the moon. It may be observed in this place, that fever consists of various circles of movement,—of smaller or diurnal circles, compre-

comprehended in larger or septenary circles. The one is the circle of the paroxysm, the other the circle of the total disease. When the circle of the disease is completed, there is remission, that is, pause of perverted action. The ordinary stimulants of life, then, call back the healthy movement; but this does not happen certainly and uniformly. The diseased circle ceases: But instead of health, a new circle of perverted movement arises; and runs over another course, similar in duration, and of a similar character with the former; or different in time, and different in symptoms. In this manner the circle terminates on the seventh;—a new accession begins on the eighth. The new accession sometimes anticipates, mixes with the termination of the preceding circle, and the disease appears to be of prolonged duration;—but its tenor is not uniform. The pause, or change marks the existence of two different circles. The fact is obvious; the rule of uniformity, in the laws of animal movement, is consistent; and it receives confirmation from the fact which is noticed. Sometimes the circle appears to be finished on the third;—there is a pause on the fourth. Disease recurs on the fifth; and frequently, in such case, has a long course,—generally a dangerous character. It sometimes terminates on the fifth, very often on the seventh.—A healthy movement takes place, and the convalescent course continues for five days, for seven days, for a fortnight, or for three weeks.—A disease then recurs, sometimes with symptoms that are similar, some-
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times with symptoms that are different from the former.

Next to period, comes to be noticed the change in the forms and modes of symptoms, which sometimes distinguish the relapse. This depends much upon circumstances,—upon situation of place and condition of subject. In places where the cause of disease exists in force, whether depending on general causes, connected with the state of the atmosphere, or on artificial causes, connected with the circumstances which relate to the sick, or mass of sick in their manner of arrangement, the character of the disease in relapse assumes a different form and aspect. It is generally observed, where the cause is strong; whether from an endemic or contagious source, that the recurrence is more frequently in a local than in a general form, that is, more frequently dysenteric, or with partial oppression of an organ, than as a distinct and regular fever generally and energetically expressed. The season of year, the weather, and the circumstances of subject, all seem to influence the manner and frequency of relapse;—they occasionally controul and modify the effects of each other. In general it is as noticed, particularly in the southern parts of North America, in the American war, that in the months of September, October, and sometimes in November, the relapses of the endemic diseases assumed the form of dysentery or diarrhœa; in the more advanced season, they resumed the febrile form, sometimes with aggravated, sometimes with slighter symptoms.

toms. In damp, foggy, cold, and wet weather, the form of relapse is often dysenteric; in dry, sharp, windy, and cold weather, it resumes the general febrile character, often complicated with pneumonic affection. When the subject lives in a pure and open air, the symptoms and changes of symptoms are better marked. There is more energy of action, and the effect is less frequently fatal. It is thus, that, when convalescent men are in a state of movement, changing place in the service of a campaign, relapses, when they do occur, are usually marked by more energy of action, a shorter course, and a general rather than a local expression. In contagious fever, the form and character of relapse, as well as being affected by circumstances of weather, are particularly affected by circumstances and condition of subject. Where the patient moves about in the intervals of recovery, where he occupies a spacious and well-ventilated apartment, where the air is pure and wholesome, the symptoms of fever in relapse are often general, with a quick and energetic expression, sometimes with delirium, sometimes with severe pains, spasms, gripings, and purgings; but the course is usually short, and the danger is small. On the contrary, in crowded places, in damp, foggy, cold, raw weather, the form of relapse is often dysenteric. The action of fever, when the form is febrile, is, then, weakly expressed; the skin is cold and dry, or damp and greasy; there is rarely any delirium, or any active symptom;
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the countenance is overcast, and the termination is imperfect,—a subsiding of symptoms rather than a crisis. In some conditions of this disease the character is malignant.—The first action has then a gangrenous expression; which is sometimes such, as may be called general; sometimes it is more expressly local. In the first case, the venous system appears to be deprived of its power; the blood stagnates or moves slowly in the surface of the body; the effect of the disease is, thus, most conspicuous in the extremities of the circulating system. In the other case, where it is more directly local, the alimentary canal experiences the most frequent attack. The lungs also suffer on some occasions, particularly in dry weather, and in a highly contaminated atmosphere. The general gangrenous action, as occurring in relapse, is frequent, where the recurrence is at a short period, that is, at an interval of one or two days; an event which happens frequently in concentrated contagious fevers, which, subsiding on the third, recur on the fifth, with an almost total extinction of sensibility of the surface, or extreme parts of the circulating system. This also happens in malignant endemic fever, but it happens less frequently than in the other. The gangrenous action, locally expressed in relapse, is more common, upon the whole, than the general form now noticed. It happens, for the most part at longer intervals, both in the endemic and in the contagious class of fevers.

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The relapses which occur at the shortest periods are generally the worst, particularly if the character of the original disease has been malignant; for, it is remarked, that if the body has not, in the interval of recovery, been under the influence of pure air,—exercise in which seems necessary to give the real vital property to animal organization, the action of a morbid cause recurring in force, often totally subverts the structure, and destroys life by a direct action. It is thus found, that persons, remaining stationary, particularly in the atmosphere of a crowded hospital, and eating to the utmost desire of the appetite, ordinarily fill up quickly, appear plump and in good plight, as if fit for duty. A relapse comes suddenly as lightning, and blasts the principle of life by direct effect,—sometimes generally, or in the extremities of the circulating system, oftener locally, for the most part in the alimentary canal, or its connexions. On the contrary, persons, who, with the observance of a measured diet, move about in pure air, in the intervals of recovery, suffer relapse at a fixed period as well as the others; but the effect is different:—the expression, then, is generally by an energetic mode of action, assuming the character of the creative process. For, though there be certain keys in the animal machine, which, when moved in the course of its revolutions by change or impression, run over a circle of perverted action,—it is observed, that the mode or character is different; and that

difference appears to be determined by the circumstances of the subject,—the vital condition of the instrument. As relapse therefore arises from a certain correspondence, or aptitude of action, between the cause and the subject, it is evident, that the rules of prevention must be under the guidance of a principle, which guards against the occurrence of the correspondence alluded to. It is clear, that causes act upon animal bodies, according to susceptibility of impression, or excitability of the moving power. Hence, causes, which produce that excitable power in the greatest abundance; or, which amounts to the same thing in effect, which do not expend it in action, may be supposed to favour such condition of accumulation; that effect or explosion readily takes place with the application of slight causes, or with the recurrence of certain inexplicable periodic revolutions. The language employed in this place, must be considered figuratively; for we, in reality, know not what life or excitability is;—we only know some of the laws, which regulate its expression. If there therefore exist any means, capable of retarding the manufacture of the excitable power; of absorbing (if the expression may be allowed) the excess of its sensibility; of expending its quantity in natural action; so that excess in quantity, or excess in sensibility do not obtain in an unusual degree; a perverted movement does not readily arise, with the application of a foreign cause:—in other words, relapse is prevented. Among the means, cele-

brated for this purpose, is reckoned Peruvian bark; a remedy, which seems to possess a quality of absorbing excess of sensibility. The effects of Peruvian bark are valuable in this view; but they are far inferior to those of exercise in open air,—exercise, active and continued, so as to impress a routine of strong movement; as happens in travelling, in change of air and place, in new and various scenes of service, in campaigns, and in sieges. Among the means, which retard the manufacture of the excitable power, may be reckoned a measured, even an abstemious diet. On this ground, temperance is a general preservative of health, and a particular preventative of relapse. Relapse is observed, almost uniformly, to be connected with fullness. Fullness is the natural consequence of full living: there, moreover, seem to be certain periods in the circle of time, at which the tide of fullness, in the animal machine, is more particularly manifested than others. This effect is, therefore, to be prevented by opportune evacuations, particularly by emetics and brisk purgatives; which, while they remove the repletion, may also be supposed, by the strength of their operations, to affect the movements of the machine; or change its routine, if tending towards disease. It thus appears, that, though the means, employed in preventing recurrence of diseased movements, be various, they all hang upon the principle of absorbing excess of sensibility;—a purpose effected, by raising and supporting a strong impression, analogous to health; by removing excess of quantity in the excitable

citable power, by evacuation ; or by proportioning manufacture to expenditure, by means of an abstemious or measured diet. Thus, a measure of diet, correctly proportioned to the wants ; the use of emetics or purgatives, well timed ; and the judicious management of means, which make impression on the sentient system, such as bark, exercise in open air, and a course of animating employments, are the instruments by which purpose is effected. The mode may be varied,—the above is only the outline of the principle.

To conduct the stage of convalescence to the goal of established health, is a matter of great consequence every where ; but it is particularly so in armies. It is desirable that every musket, in the army, be effective in the field of action ; and it is unfortunate, that the mode, too frequently pursued, of collecting sick soldiers into general hospitals, so multiplies the causes of disease, as defeats the purpose. Where men, particularly, where sick men are crowded together in narrow space, the air is contaminated ; where air is contaminated, the progress in the recovery of health is slow ; even if apparently restored, the permanence is not secure. On this ground, the proper object, in providing hospital accommodation, goes more to a provision of space, than to the provision of a building magnificent in appearance, and of the first taste among the orders of architecture. It is proved in innumerable instances, that sick men recover health sooner and bet-

ter, in sheds, in huts, and barns, exposed occasionally to wind, and sometimes to rain, than in the most superb hospitals in Europe. Pure air, in this respect, is alone superior to all forms of care, and to all other remedies, without such aid. Where a number and variety of human beings are accumulated under the same roof, the air cannot long remain pure. It may not be positively impregnated with contagion ; but it is not salutary ; and the energies of life are but feebly expressed, under such condition. In arranging the health of armies, it is therefore necessary in the first place, carefully to separate those who are sick, from those who are not sick. But instead of collecting masses of sick persons into large and magnificent hospitals, it will be a preferable mode, to place small parties in separate and detached houses, arranged primarily according to the nature of diseases, selected, and removed to other apartments or hospitals, at given periods, according to progress and condition of recovery. In this manner, while there is not only space, but a proper classification among those who actually are in the sick hospitals ; it is useful, indeed essentially necessary, if the rapid and perfect recovery of health be the object of a medical establishment, that persons in the first stage of convalescence be removed to apartments, distant some hundred paces from the sick hospital ; and, advancing to a higher stage of convalescence, that they be again separated, and placed in a new convalescent quarter, in which they ought to remain

main till health be perfectly established. In the first stage of convalescence, the measure of diet, the regimen, and the modes of exercises are supposed to be exactly adapted to the powers of the subject. The diet, moderate,—small in quantity, but savoury and stimulative of the powers of digestion;—the exercises light, but varied, and often repeated;—the whole regimen, so ordered and connected, as to solicit and confirm the customary movements of health. In the higher stage of convalescence, the diet is supposed to be increased, but still under the measure of full diet; the exercises are varied, longer continued, and carried to the point of impressing an action of effect upon the system.—The exercises are, walking, running, playing at ball, cricket, quoits;—such amusements, in short, as induce the patient to forget, that he either is, or has been sick. By such exercises, the action of the machine advances in progress towards health. Ground is gained, and, when ground is gained in this manner, it is effectually secured, by the practice of washing the body with cold water, while the impressions of the active movements, from the exercises and amusements, are yet in force. The surface of the body, the muscles, or instruments of motion, are then susceptible. The application of cold water, in such condition, has a powerful effect. It produces a salutary action; and, if followed by friction and the refreshment, arising from clean apparel, it gives and confirms a mode, which may be called

the mode or tone of health.—Such plan of discipline, as is here suggested, is important in the highest degree. In regiments it may be executed by intelligent non-commissioned officers, under the direction of regimental surgeons. In general hospitals, where there is a mass of sick men belonging to different corps, it falls to the lot of military superintendants, or military commissioned officers, who, in this duty, must receive directions from physicians; for the judgement, and consequently the authority of physicians, must be allowed to be superior, in whatever concerns the management of health. The subject of convalescence is important to the interests of the British military service: it is to be hoped, that it will now, in a particular manner, attract the attention of those, who have the power to enforce the execution of salutary measures. It will almost uniformly be found to hold true, in referring to histories of health among soldiers, that mortality in general hospitals, compared with mortality in regimental hospitals, bears a high proportion in similar diseases, notwithstanding the apparent superior accommodation of the general establishments, and the supposed superior medical skill of the persons employed in these establishments. An effect, so little expected, usually arises from mortality, in relapse, being greater in the one case than in the other; and this arises, among other causes, from the air being contaminated, or deprived of its vital qualities, by the respiration of a numerous mass
of

of people collected into a narrow space. It was hinted above, that it is only in pure air, and under exercise in pure air, that animal organization acquires its proper vital quality. That quality is obviously diminished, weakened, or changed under a febrile process; for, though the excitability, or power of manifesting action, may not be exhausted, or absorbed under the continuance of the condition expressed, the consequent mode of action is not energetic, as in the vigour of health. It is evident, that the vital organization of the machine is affected, in its circumstances, by a febrile movement. It is not pretended to explain the manner how. It may be said to lose a quality, which, in defect of precise knowledge, may be termed elasticity,—a quality only to be restored by movements, tried and practised, in a variety of forms, under the influence of a pure air. It seems principally to be the influence of pure air, which gives constancy and firmness to the organic action of animal bodies. For, those persons, whose limbs are never moved by hard labour, and whose bodies are never, or but rarely visited by the rude winds of heaven, possess not that quality of organization, which supports a firm and steady action. The machine, in such, flies off into irregular movements, with the application of slight causes. Its sense is exquisitely fine, but its action is not strong. It is thus, that violent diseases rarely occur in the delicate frames of the higher classes of luxurious nations, where the condition of the

organization is ticklish or morbidly sensible. The expression of diseases, in such case, is, for the most part, manifested in the sentient system; the organs, which circulate red blood, are rarely primarily affected; and mortality, from acute maladies, is comparatively small. The condition of the organization of the delicate frame, is not consistent with vigour; but it is different from the condition of organization of persons, who have suffered the derangement of a febrile action. For, where disease recurs in such, before the limbs have been tried, and practised in movement or exercise in the open air, the mode of action is often expressed by a direct corruptive or gangrenous process. This is particularly witnessed in large and crowded hospitals, where the atmosphere, though not positively impregnated with contagion, is necessarily contaminated and inelastic. But, whatever the cause may be, or whatever mode of explanation may be assumed, the fact is certain, that persons, who, during convalescence from fevers, move about in the open air, performing such exercises as their strength permits, are rarely brought into danger, by the recurrences of the disease in its relapses. The mode of expression then usually assumes the productive or creative process; the course is short; nay, increased energy, in animal action, is often the consequence of such recurrence. This was strongly exemplified in the periodic fever of the southern parts of the continent of North America, in the American war. Here an evident

dent accession of strength was usually the consequence of a relapse; provided the subject of relapse was in the field of service, with no other covering but a blanket, and no protection from weather, but the shade or shelter of a tree. On the contrary, where persons of the same class, under the same circumstances of disease or recovery, were confined under a roof day and night; the subsequent recurrences of disease were generally more aggravated than the preceding; the principle of life was evidently enfeebled, undermined,—at last destroyed, and, in many instances, destroyed by the primary action of the disease, in its relapse; for, the mode or character was often corruptive or gangrenous.

Relapse is the leading cause of mortality in general hospitals; and, as the cause which renders relapse mortal, is a cause of artificial manufacture, it is hoped, that it will be so viewed by those who have authority to direct; and being so viewed, it will necessarily be suspended from a farther operation, in the armies of Great Britain. The remedy is obvious. It consists in arranging such establishment for sick soldiers as precludes the necessity of general hospitals; viz. the provision of hospitals for the sick regimentally, so arranged, that the sick may be separated and classed according to their diseases, that a quarter be allotted for the convalescents, possessing the means of carrying into effect such a train of amusements and exercises in the open air, as, if not equal to prevent relapse altogether, may at least impart
that

that portion of vitality to the organization of the machine, that the recurrence of disease will be little fatal in its effects. That such will be the fruit of the proper establishment and good management of regimental hospitals, is demonstrably proved, through all the histories of military service. That the establishment of general hospital is an artificial cause of the destruction of armies is amply witnessed, in all wars,—never perhaps so strongly witnessed as in the late war. The effect of accumulation evidently corrupts the air, and thus generates an artificial malignity ;—life is lost, or the cure is protracted ; independently of which, the military qualities of the surviving soldier, as depending on discipline and impressions of energy from example, are impaired, if not totally destroyed. *

The above sketch has been written rather in an hurried manner ; for, the first part of the work was in the press, before the necessity of the last
was

* There seem, at present, to be hopes of the measure recommended in this place being, in some degree, carried into effect. Mr. Knight, the present Inspector-General of Regimental Infirmaries, appears, since his appointment, to have considered the subject of his duty with care, to have collected information assiduously, and to have employed himself, in arranging a plan for the better management of regimental hospitals. If the arrangement be founded upon sound and simple principles, and duly executed, he will deserve the thanks of the British nation ; for, the measure recommended is capable of saving the lives and morals of soldiers ; of preserving many muskets in the field, which otherwise rust in hospitals ; and of covering up securely an unfathomable abyss of expence.

was perceived. The author felt himself called upon to explain the principles, upon which he acted in the cure of acute diseases. The subject has gone into a longer detail than he intended; and he is still ready to allow, that the information is defective in many points; but, though defective, he is confident to believe, that none of the directions or hints suggested, have a tendency to lead the unexperienced astray. It is not unlikely, but that much of what is said in this place, will be considered as nonsense by the young and fashionable physicians of the present time. Opinion is free; but the truth of the observations, as respecting the movements of Nature, in her morbid derangements, he will confidently commit to the testimony of those, who, like himself, have spent the best of their days at the bedside of the sick, —not in cursory or casual visits, but in a series of connected attendance. The explanation, which is given in this place, rests upon no preconceived theory,—upon no assumed, undemonstrated principle. It goes no farther than simply to analyze observations of experience. An attempt of this kind is necessary: for, it must be admitted, that till observations are analyzed; estimated in their connexions with others; and arranged by the true principle of their relations; they may load the memory, but they have no practical utility. It is obvious to every man's common sense and common feeling, that the health of an animal body is radically connected with a harmonic rhythm, in the movement of its various

various organs. Disease implies perversion of the harmony of movement. The act of restoring health, is, consequently, the act of restoring harmony, or rhythm of movement, to its natural order. The idea gives a simple view of the subject; and the practical operations would be easy and certain of effect, if the machine had only one movement. But an animal body consists of various organs, which have distinct and peculiar laws; which are liable to subordinate and complicated derangements, variously expressed in parts, or in the whole. The art, therefore, of restoring rhythmical or harmonic movement, does not proceed upon one rule; for, the derangement is not precisely of one kind in all. It supposes, previously, an accurate knowledge of the structure of the animal machine in its visible organic form, and in its visible organic connexions. It supposes an accurate knowledge of the common laws of movement in health,—the condition, where the movement is perfectly in unison. This is preliminary; but the direct object of the physician's study relates to the laws of movement under disease,—to derangements of various description and character. This is most correctly known from personal experience of sickness. It can only be learned in such experience, or in experience systematically instituted, and prosecuted through a series of observations, at the bedside of sick persons. The physician's art is, therefore, an art, only to be acquired by experience. The road may be rendered easy
by

by previous instruction ; but it is practical experience alone, which leads to the useful point in application. Experience is acquired with toil and labour ; but, when so acquired, and referred to its true principle, it then deserves the name of knowledge ; for, it is useful to its possessor. By experience, that is, the exercise of the powers of vision and touch, a quality of discriminating nice and difficult relations of diseases insensibly and inexplicably engrafts itself on the observer. The possession of such quality leads to the true application of means ; for, it is on circumstances of application, not on actual force of remedy, that the benefits of medical prescription depend. This faculty of discrimination is, as it were, engendered by attentive observation. No rules can teach it ; and on this ground, it is only to experienced men, that the concerns of health, particularly the health of armies, ought to be committed.

The medical art is an art of tedious acquisition. If young men were aware of all its troubles and imperfections, it would perhaps rarely be the object of their choice ; but opinion and fashion come in aid of their difficulties, dictating to physicians, as to others, the path in which they are to walk. This law of fashion, engrossing the thinking faculty for a time, in some manner commands the physician to attempt the cure of fever, on the assumption of opinion ; that is, on the supposition that plethora, heat, debility, &c. are causes of disease. These opinions have

have severally had their reigns. On the assumption of such opinions, the rule of practice is simple; for, it implies little mystery to take away what exceeds, to cool what is hot, to warm what is cold, or to comfort and strengthen, with cordial and strengthening things, the movements which are feeble and weak. These grounds however are not true in fact, as causes of fever. They are merely points assumed,—accidents or symptoms of the action of a previous cause; the remedy, therefore, is only proper by accident, or it is rather only by accident, that it is not wrong. The art may, thus, be supposed to have made but little progress: so it has in fact; for, it is confined to simple observation, without action; or to action, on presumption, almost without observation. According to the idea suggested in this place, the acquisition of medical knowledge is painful and laborious,—only to be learned by experience. The object of the art is directed to bring back to harmonic or rhythmical order, the perverted and discordant movements of a complicated machine. Every case therefore requires consideration; for, every case has a greater or lesser shade of difference. To cure disease requires daily observation, carefully made. Such doctrine does not flatter vanity. Experience informs us, that we must every day look and learn; and that with all this we are liable to oversights, and even to errors. But, at the same time that we encounter these difficulties, we get into the road, in which truth lies; in which

truth

truth may be found, if sufficient labour and perseverance be dedicated to the pursuit of it. It is of consequence to ascertain how far our knowledge extends; as it is our duty to employ with diligence the knowledge we have acquired. It is forbidden to indulge in conjectures; nor must we cease to search for remedy, till we have demonstrative proof that we have found one, in the case in question. In the common class of fevers,—endemic and contagious, the means recommended in this place will rarely fail of effect, if applied in the proper circumstances. The proper circumstances are the early periods of the disease, where organic derangement has not yet taken place. In cases of relapse, in a malignant constitution of the atmosphere, the remedies, as yet known, are often ineffectual. They are also insufficient in pneumonic affection, accompanied with excess of gluten in the blood; in the erysipelatous class of diseases, particularly sore throat; and in other epidemics, where the gangrenous or corruptive process predominates.



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a Diet Table of the Hospitals of the Army Depôt in the Year 1801.

xxv

ABSTRACT of EXPENDITURE of PROVISIONS, &c. at the HOSPITAL of the ARMY DEPÔT, from 18th July, 1801, to 15th January, 1802, inclusive.

	Diets.				Total Number of Persons dieted.	Wine and Spirits.														Refreshments.				Distribution of Soap.																		
	Full.	Half.	Low.	Bread.		Meat.	Potatoes.	Pot. Herbs.	Oatmeal.	Barley.	Rice.	Brown Sugar.	White ditto.	Tea.	Sago.	Indian Arrow Root.	Flour.	Salt.	Milk.					Small Beer.	Lemons.	Apples.	Eggs.	Soap.	Articles washed.	No. of each	Quantity of Soap.											
																				Galls.	Pints.	Galls.	Pints.									Galls.	Pints.	Galls.	Pints.	Galls.	Pints.	Dorchester Ale.	Cyder.	Porter.	Gs. qts.	Gs. qts.
Sick Soldiers	12162	-	-	-	6081																								4197	209 13												
	-	11123	-	-	5061 1/2																								7550	310												
Sick Women	-	-	21985	-	5496 1/2																								1205	60 2												
Resident Assistants	348	-	-	-	194 1/2																								1496	149 5												
Servants	3686	-	-	-	348																								820	82 6												
	-	-	-	-	2764																								310	9 3												
Extra	-	-	-	-	110																								733	73 3												
Total Expenditure					20055 1/2	18442	24851	2394	2416	2240	6174	2689	45	249	110	38	380	1472	802 1/2	88 7 32 1/2	120 1/2	3	326 1/2	408	14383	1360	16868	395	1263 1/2	Expenditure of Soap	1203 1/2											

Examined and certified to be correct, corresponding with Diet Tables, and authentic Orders of Authority.

Signed by

ВЪ

President of the Board.

1802, *inclusive.*

Distribution of Soap.			
Articles washed.	No. of each	Quan- tity of Soap.	
		Pds.	oz
Sheets - - - -	4197	209	13
Shirts - - - -	7550	310	
Hospital Dresses -	1205	60	2
Blankets - -	1496	149	5
Rugs - - - -	820	82	6
Bed Sacks - - -	310	9	3
Each Men cured -	733	73	3
Wards - - - -	-	255	
Bath - - - -	-	90	
Barbers - - - -	-	35	3
Extra Allowance -	-	19	
Expenditure of Soap -	-	1293	31

of the Board.

TABLE III.

General Expence of the ARMY DEPÔT HOSPITAL, from 29th June, 1801, to 15th January, 1802.

Soldiers	45270
Women	778
Servants	4034
Total Persons	50082
Voucher Table of Expenditure.	
Servants Wages as p. Pay-Bill	£. s. d.
Bread 20055 lb. 4 oz.	195 1 9
Meat 13442 14	204 5 0½
Milk 8102½ quarts	462 8 7¼
Potatoes and Pot-Herbs	101 5 7½
Liquors, &c. supplied by	54 9 4½
Mr. Steane	455 15 2
Groceries, &c. supplied by	
Mr. Cox	370 5 8½
A Chelt of Tea, Carriage, &c.	25 8 0
Steward's Bill of Sundries	14 15 7
	1883 14 10½

CONTINGENCES.

Paid Dr. Borland and Mr. Warren, as per Vouchers	£. s. d.
Mr. Steane's for Spirits furnished for the Laboratory	6 3 0
Mr. Albin for Medicines, Lamps, &c.	81 9 6
For Carriage of Water to Medina Hospital	205 2 2
For Carriage of Stores	1 10 0
Mr. Pedden, for Buckets	3 2 9
Mr. Wilkins, for repairing Iron Bedsteads	15 18 4
Mr. Powell, for Articles furnished the Laboratory	26 0 6
Ditto, for his Allowance of 2s. 6d. per day, as Med. S. K.	63 3 0
Mr. Graham, for his Allowance of 2s. 6d. per day as Hospital Store-Keeper	23 15 0
Ditto, his Expences in going to Gofport	23 15 0
Steward's contingent Bill of Sundries	1 3 6
	70 10 8
	521 13 5
Paid to the Purveyor of Foreign Hospitals 6d. per day for 7570 men	2405 8 3¼
	189 5 0
Total Expence	L. 2594 13 3¼

Note. The amount of the expence of each man per day is under-ten-pence, according to the estimate in this table, including pay and provisions of servants; but if the value of the quantity of provisions in store—at the period of closing the account be deducted, and some other extra allowances which were necessary in the circumstances of the case, it will appear that nine-pence per day for each man is equal to defray the common expences, in an hospital of more than one hundred persons, when the economy is exact.—If the money account be examined by a board of officers, weekly, or at appointed periods, and compared with the abstracts of expenditure as regularly vouched, the account being then signed by the president, may be considered to be approved by the only competent controul.—No error, in such case, can well escape undetected.

GOVERNMENT

Ce

Expenditure in the Purchase of Foreign Holdings

per day for 2250 men

Total Expenditure

1. 3104 13 31

180 2 0

2402 8 31

1893 14 10

Government's share of expenditure

14 12 7

A. C. C. Co. Ltd. (Canton)

210 2 8 1/2

Government's share of expenditure

210 2 8 1/2

Government's share of expenditure

210 2 8 1/2

Government's share of expenditure

210 2 8 1/2

Government's share of expenditure

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Government's share of expenditure

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Government's share of expenditure

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Government's share of expenditure

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Government's share of expenditure

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Government's share of expenditure

210 2 8 1/2

Government's share of expenditure

210 2 8 1/2

Form for Expenditure of Medicines and Surgical Apparatus, from

inclusive.

Number of medical Patients daily prescribed for in the given Period.

Note. The above form of table furnishes the means of judging, as near as the nature of the thing will admit, of the correct expenditure of medicines and surgical means in general or regimental hospitals, for a given period. The voucher is to be authenticated by a reference to the daily returns of the sick;—the losses or damage are to be proved by regular survey and certificate.

Date of Birth	Age	Sex	Religion	Marital Status	Education	Occupation	Deficiency
1890-1895	15-20	Male	Hindu	Single	None	None	None
1895-1900	20-25	Male	Hindu	Single	None	None	None
1900-1905	25-30	Male	Hindu	Single	None	None	None
1905-1910	30-35	Male	Hindu	Single	None	None	None
1910-1915	35-40	Male	Hindu	Single	None	None	None
1915-1920	40-45	Male	Hindu	Single	None	None	None
1920-1925	45-50	Male	Hindu	Single	None	None	None
1925-1930	50-55	Male	Hindu	Single	None	None	None
1930-1935	55-60	Male	Hindu	Single	None	None	None
1935-1940	60-65	Male	Hindu	Single	None	None	None
1940-1945	65-70	Male	Hindu	Single	None	None	None
1945-1950	70-75	Male	Hindu	Single	None	None	None

TABLE A.

TABLE A. - Statement of persons in each class of deficiency, 1900-1950.

TABLE V.

COMPARATIVE ABSTRACT of the Returns of the Hospitals of the Army Depot, from the 1st March 1801, to the 30th April, 1802, inclusive, shewing the Proportion of Mortality in each Class of Disease.

DISEASES.	Chatham.			Jlle of Wight.			Jlle of Wight.	Number of sick in de- rate circumstances on the 31 st Dec. 1801, to be deducted from the mortality of the return from Jan. to April 1802.
	From the 1 st March 1801 to the 30 th July following.	Discharged to duty.	Died.	From the 1 st July 1801 to the 31 st Dec. following.	Discharged to duty.	Died.	From the 1 st Jan. 1802 to the 30 th April following.	
Fever periodic - - -	19	20	1 in 32 nearly	24	1	1 in 24	10	3
continued - - -	635	15	1 in 3 nearly	775	33	1 in 23½	152	36
pneumonic - - -	41	15	1 in 3 nearly	96	9	1 in 10½	47	17
catarrhal - - -	54			23	4	1 in 6 nearly	25	4
rheumatic - - -	11			13	2	1 in 6	8	
anginal - - -				67	1	1 in 67	12	3
scarlet - - -				30	4	1 in 7½	1	1
erysipelatous - -				2				
Small-pox - - -	29	5	1 in 6 nearly	3	1	1 in 3	16	2
Measles - - -	34	2	1 in 16	68	19	1 in 3½	2	1 in 8
Mumps - - -				10			1	
Dysentery - - -	52	5	1 in 10	121	14	1 in 9 nearly	53	14
Hernia humoralis - -	2			11				
Colic - - -	2			3			1	
Apoplexy - - -	1			2			1	1
Pulmonic Inflammation	2	4		5	8		2	2
General Watking - -				6	1	1 in 6	3	1
Diarrhoea - - -	27	2	1 in 14 nearly	33	2	1 in 16	18	
Catarrhy - - -				1				
Dropsy - - -	7	1	1 in 7	2			2	1
Jaundice - - -	1			2	1	1 in 2	5	
Headach - - -				1			1	
Hæmorrhia - - -	5	1	1 in 5					
Rail - - -	1							
Ophthalmia - - -	6						3	
Asthma - - -	1						1	
Gangrene - - -	1							
Scrophula - - -	1							
Strangury - - -	3			2			3	
Yaws - - -				1				
Chronic Rheumatism -				1				
Tetters - - -				10			3	
Lues Venerea - - -	122			4			13	
Gonorrhoea - - -	64			84	2	1 in 42	51	
Sore Legs - - -	168			65			22	
Wounds and Accidents	148	3	1 in 50 nearly	135			101	
Abscess - - -	2	2		48	2	1 in 24	22	
Fistula in ano - - -				5			6	
Lamellis - - -	21			6			3	
Tape Worm - - -	1							
Total Proportion.	1,52	61	1 in 23½	1677	110	1 in 15½	604	76
							1 in 8	
								Deducted - 14

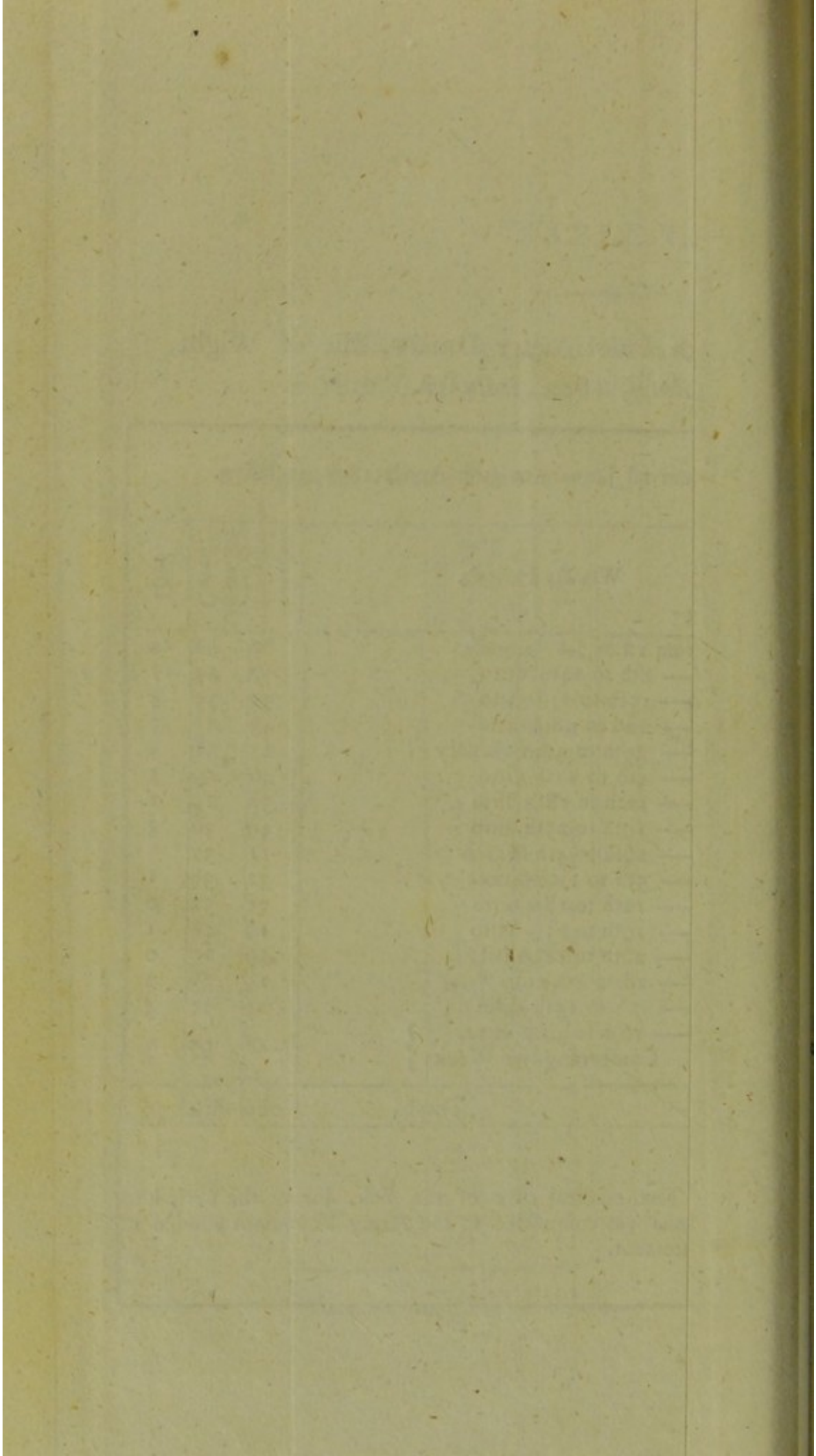


TABLE VI.

General Abstract of Weekly Movement of the HOSPITAL of the ARMY DEPÔT, Isle of Wight,
from the 18th July, 1801, to the 30th April, 1802, inclusive.

From 18th July to 31st December, 1801, inclusive.				From 1st January to 30th April, 1802, inclusive.			
Weekly Periods.	Number Admitted.	Dismissed Cured.	Died.	Weekly Periods.	Number Admitted.	Dismissed Cured.	Died.
From 18th to 24th July	61	45	1	From 1st to 7th January	82	52	24
— 25th to 31st ditto	108	40	2	— 8th to 14th ditto	47	44	17
— 1st to 7th August	62	60	0	— 15th to 21st ditto	30	39	4
— 8th to 14th ditto	87	66	0	— 22d to 28th ditto	43	45	5
— 15th to 21st ditto	89	76	1	— 29th to 4th February	27	36	4
— 22d to 28th ditto	75	92	2	— 5th to 11th ditto	46	29	5
— 29th to 4th September	72	64	0	— 12th to 18th ditto	38	27	2
— 5th to 11th ditto	76	61	4	— 19th to 25th ditto	49	36	3
— 12th to 18th ditto	73	78	3	— 26th to 4th March	11	37	2
— 19th to 25th ditto	58	62	4	— 5th to 11th ditto	32	38	1
— 26th to 20th October	75	69	1	— 12th to 18th ditto	35	32	0
— 3d to 9th ditto	53	54	4	— 19th to 25th ditto	19	28	1
— 10th to 16th ditto	111	59	3	— 26th to 1st April	19	20	0
— 17th to 23d ditto	104	63	4	— 2d to 8th ditto	15	33	2
— 24th to 30th ditto	116	79	7	— 9th to 15th ditto	25	11	3
— 31st to 6th November	102	53	5	— 16th to 30th ditto, } Comprising two Weeks }	148	97	3
— 7th to 12th ditto	91	92	8				
— 13th to 19th ditto	69	82	4				
— 20th to 26th ditto	93	59	9				
— 27th to 3d December	79	89	12				
— 4th to 10th ditto	88	56	7				
— 11th to 17th ditto	82	89	8				
— 18th to 24th ditto	117	97	9				
— 25th to 31st ditto	101	92	12				
Total	2042	1677	110	Total	666	604	76

Note. The medical care of the sick, during the period of this column, was committed to the Army Physicians alluded to in the statement.

TABLE VIII.

FORM of HOSPITAL RETURN,
from *to* *inclusive.*

Form of Disease.						Number of Convalescent, Proportion of Relapse, and other explanatory Remarks
	Remained the	Admitted.	Dismissed.	Died.	Present State.	
Periodic	-	-	-	-	-	

TABLE VII.

FORM of RETURN of Sick and Wounded used in British Military Hospitals.

Acute.	Chronic.	Wounds and Ulcers.	Venereal.	Punished.	Itch.	Convales- cents.	Total.	Dead since last Return.	Decreased since last Return.	Admitted since last Return.	Dismissed since last Return.	Increased since last Return.

Note. The above is the form of return used in British military hospitals. The purpose of hospital returns is to submit to the general or commander in chief, a history in figures of the health of his army; placing the matter before his eye, in such manner, that he may be enabled to form some estimate of what the hospital is likely to produce for service, or what is likely to be the loss from disease; for every military officer knows that some diseases are in their own nature mortal, and that others have no mortality.—Itched men and punished men, unless some untoward accident arises, ought never to be admitted into general, or even into regimental hospitals, and thus ought not to appear in hospital returns. This return gives no information of any kind.

TABLE IX.

Abstract of average Time required for Cure at the DEPÔT HOSPITAL at different Periods, and under different medical Management.

Period.	Average Time of Cure per Man,	During this Period one-third of the Patients borne
Periodic		

TABLE VIII.

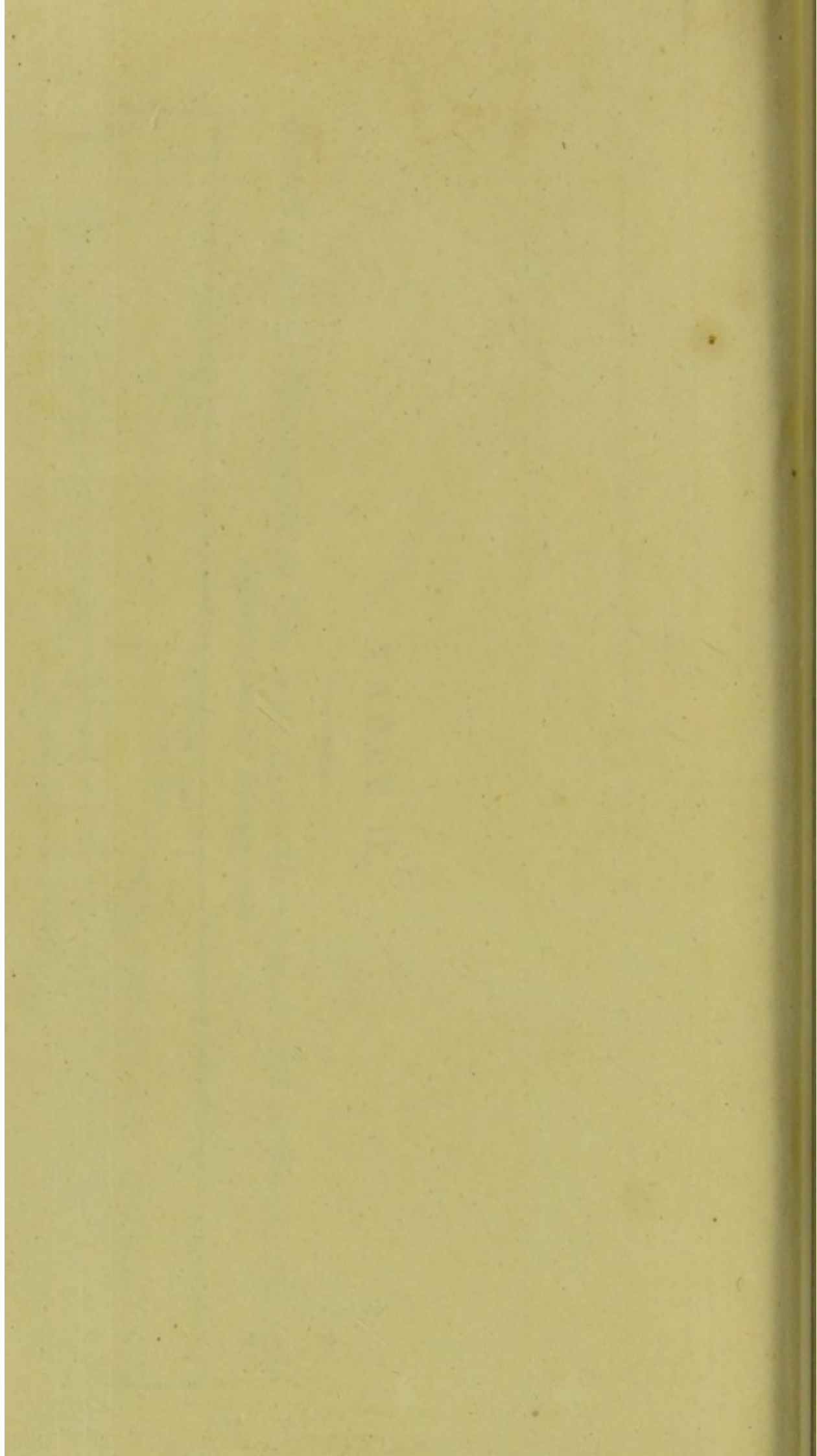
FORM of HOSPITAL RETURN,

from

10

inclusive.

[illegible]



T A B L E IX.

Abstract of average Time required for Cure at the DEPÔT HOSPITAL at different Periods, and under different medical Management.

Period.	Average Time of Cure per Man,	
Chatham. From 25th July, to 13th December, 1800, previous to Dr. Jackson's management.	About 34 Days.	During this Period one-third of the Patients borne on the Return were itchy Men, whose Cure could not require more than ten Days, the average Time for Cure of those actually sick could not be less than 40 Days.
Chatham. From 1st March, to 26th June, 1801, under Dr. Jackson's Management.	About 20 Days.	No itchy nor punished Men, were borne on the Hospital Return.
Isle of Wight. From 18th July, to 31st December, 1801, under Dr. Jackson's management.	About 23 Days.	No itchy Men, nor slight Cases of Disease admitted into Hospital, the latter being treated in Barracks, from want of Hospital Accommodation.
Isle of Wight. From 1st January, to 30th April, 1802, subsequent to Dr. Jackson's medical Management.	About 45 Days.	No itchy Men,—but Sickness having abated, all Persons, requiring Hospital Treatment, were accommodated in Hospital.

